This item was submitted to Loughborough's Research Repository by the author.
Items in Figshare are protected by copyright, with all rights reserved, unless otherwise indicated.

Do workers with long-term health conditions need self-management support at work?

PLEASE CITE THE PUBLISHED VERSION

PUBLISHER

Loughborough University

LICENCE

CC BY-NC-ND 4.0

REPOSITORY RECORD

Hemming, Sally. 2020. “Do Workers with Long-term Health Conditions Need Self-management Support at Work?”. Loughborough University. https://doi.org/10.26174/thesis.lboro.13325912.v1.

Do Workers with Long-Term Health Conditions Need Self-Management Support at Work?

by

Sally Hemming

A Doctoral Thesis

Submitted in partial fulfilment of the requirements

for the award of

Doctor of Philosophy of Loughborough University

September (2020)

© Sally Hemming, 2020.

This thesis is dedicated to Gail Bridges for not letting the idea of a PhD go and Peter Hemming, who did not doubt that I would grasp the maths in the end.

Abstract

Background: Due to an ageing population and longer working lives, long-term health conditions are an increasing global burden and particularly among people of working age. A long-term health condition (LTC) can affect people's workability and lead to premature work exit. Supporting a worker's self-management of LTCs has the potential to minimise adverse effects through enhanced health and work outcomes. Evidence suggests that self-activation, self-efficacy, empowerment and support from others can promote LTC self-management in general and that psychosocial factors interact to influence health, but little is known about workers' support needs. No data exists on employers' perspectives of what self-management support workers with LTCs require. Utilising self-efficacy theory, the Patient Activation® concept and a psychosocial framework, this project aimed to understand if workers with LTCs need workplace self-management support.

Method: The project adopted a mixed methods approach with four inter-related studies. Participants completed a cross-sectional online survey questionnaire (Study 1) measuring demographic and LTC characteristics, activation, self-efficacy, quality of life (QoL), wellbeing, workability and working conditions (stressors). For the survey, 736 workers including 327 with mental health, musculoskeletal (MSK) and other LTCs were recruited from across industries. In order to establish a longitudinal picture of changes and patterns in workers LTCs, self-management and work characteristics a sub-sample (n = 67) participated in a 10 week online diary study (Study 2). Participants' LTC information, perceived control of an LTC, self-management activities, LTC and work interactions, received support, support satisfaction and work engagement were measured. The exploration of employers' views on worker's LTC self-management (Study 3) involved recruiting 15 participants with responsibilities for health and wellbeing, who participated in a semi-structured interview about self-management and support. Lastly, 14 workers participated in a narrative interview (Study 4) exploring their experiences of self-managing an LTC at work. Data were analysed using quantitative statistics for the survey and online diary (ANCOVAs, t-tests, chi-square tests, regression and multi-level modelling) and qualitative techniques for the interview studies (content, thematic, narrative thematic and narrative structural analyses).

Results: Of 736 participants completing the Study 1 survey, 327 reported a diagnosed LTC including mental health n = 119, MSK n = 94 and other n = 114 conditions.

Participants without LTCs (n = 409) reported more people to turn to at work for support [$F(1, 730) = 9.67$, $p = 0.002$], better manager [$F(1, 729) = 14.2$, $p = 0.001$] and peer support [$F(1, 729) = 12.1$, $p = 0.001$], better current workability [$F(1, 730) = 58.9$, $p = 0.001$] and less stress about control [$F(1, 729) = 5.21$, $p = 0.023$] and change [$F(1, 729) = 5.18$, $p = 0.009$]. When compared to workers with MSK and other LTCs, workers with mental health conditions reported reduced current workability ($p = 0.014$), manager support ($p = 0.008$) and wellbeing ($p = 0.001$) and increased stress about change ($p = 0.028$) and role ($p = 0.049$). Differences in activation ($p = 0.006$) but not self-efficacy ($p = 0.158$) emerged between mental health and all other LTCs suggesting workplace support is important. Increased activation scores were associated with increased self-efficacy ($p = 0.001$), wellbeing ($p = 0.001$) and current workability ($p = 0.001$). Workers who had not disclosed an LTC (mainly mental health) reported less workplace support ($p = 0.001$) and were non-significantly more activated and self-efficacious. Increasing LTC severity was associated with reduced self-efficacy ($p = 0.001$), wellbeing ($p = 0.001$) and current workability ($p = 0.001$). Increasing age was associated with higher activation and self-efficacy together with current and future workability. Significant variability in the change of participants self-management confidence over time was revealed ($B = 1.43$, SE = 0.62, $p = 0.02$). Interactions between self-management confidence and support satisfaction and time were not significant ($p = 0.61$), nor between self-management confidence, LTC control and time ($p = 0.62$). However, interactions between self-management confidence and work engagement were significant [$F(1, 54) = 1.69$, $p = 0.027$]. Qualitative data from studies 3 and 4 provide insight into workplace LTC self-management. Data from the survey and diary study suggest that support in respect of flexibility, leeway, openness and reasonable job demands will be helpful. This was reinforced by the narrative interview data that work-modifications, disclosure, low levels of stigma, and relational support from managers and colleagues was important to workers. The employer interview study findings suggest that self-management support is not purposely provided to workers with LTCs and that managers have a main support role. Employers made it clear that workers are expected to disclose an LTC for support to be offered and recognised that obstacles to support include poor manager behaviour, stigma and work demands.

Conclusion: This research examined if workers with LTCs need workplace self-management support. The findings from the studies reported in this thesis lead to the conclusion that workers do. This has important implications for employers. Psychosocial factors interact to affect workers ability to fit self-managing around work. Findings suggest that workers confidence and empowerment to self-manage rests largely on

managers supporting flexibility, leeway and autonomy. Yet, employers lack awareness and self-management support is not purposely provided. Whilst employers and managers might not realise the control they exert on workers LTC self-management, they have an important role to play and need guidance in the principles and practice of supporting self-management. This research identifies support needs specific to the workplace and proposes a model for psychosocial LTC self-management support. This can be used to generate discussions about obstacles and support needs to guide workers and employers. Potentially, the model can inform the design of a LTC self-management support tool for managers and update existing self-management support models.

Acknowledgements

I would like to specially thank Dr Fehmidah Munir and Dr Hilary McDermott for supervising this research. It has been a challenging and fascinating journey. Your expert advice, knowledge, insights and support during the long months of this project have been invaluable.

My thanks extend to Dr Ian Taylor who (twice and around his job) reviewed my multi-level modelling analysis. Particular thanks go to Professor Kim Burton who has acted as an independent mentor and generously spent time discussing and reviewing my work. You helped my confidence hugely. Also, to the numerous unnamed people at work and academic conferences who shared ideas and asked questions about the studies.

Thank you to my friends who endured my talking about this research over many years and appreciate why this question matters to me personally. Special thanks to Sue for your help and support. I wish to also thank my previous employer Thrings Solicitors LLP who unreservedly agreed to support me by funding the research.

Importantly, I would like to express my deepest gratitude to the workers and employers who gave their time to participate and who made this research possible. I would like to specifically thank the participants who shared their health narratives. I felt privileged to hear your stories.

Above all, to my husband Joe and sons Henry and Arthur. Thank you for your patience, perseverance, help and for giving me the space and encouragement to complete this. I am sorry for being distracted and not giving you time whilst writing. This PhD is a team effort.

Publications and Presentations

Braspenning, I., Tamminga, S., Frings-Dresen, M. H., Leensen, M., de Boer, A., Tikka, C., Veerbeek, C., Munir, F., Hemming, S., Amir, Z., Smith, L., Sharp, L., & Haste, A., (2018). *Rehabilitation and return to work after cancer - instruments and practices.* European Agency for Safety and Health at Work.

Hemming, S (2018). Young researcher PhD presentation. *European Academy of Health Psychology Conference,* 5-7 September 2018, Lisbon, Portugal.

Hemming, S (2018). The influence of psychosocial working conditions on workers' LTC self-management. Poster presentation and young scholar award, *International Conference on Health, Wellness and Society,* 20-21 September 2018, Imperial College, London.

Hemming, S (2019). Do psychosocial working conditions affect workers' self-management of long-term health conditions? Poster presentation, *Health and Wellbeing in a Changing World conference,* 22-24 May 2019, French National Research and Safety Institute, and European Research in Occupational Health and Safety, Paris, France.

Hemming, S (2019). *Work Disability and Integration Conference*, University of Southern Denmark, Odense, 4-7 June 2019:

- Oral presentations - Is patient activation related to self-efficacy and workplace self-management of employees affected by long-term health conditions? and; Employees with long-term health conditions - A diary study of workplace self-management behaviour, support needs and work factors.
- Poster presentation - Chronicles of workplace health self-management.

Hemming, S (2020, October 26). Helping employees self-manage long-term conditions such as long Covid. *People Management Magazine, Chartered Institute of Personnel and Development.* https://www.peoplemanagement.co.uk/voices/comment/helping-employees-self-manage-conditions-such-as-long-covid

Table of Contents

Abstract ..... **i**

Acknowledgements ..... **iv**

Publications and Presentations ..... **v**

List of Tables ..... **x**

List of Figures ..... **xiii**

1 Long-Term Health Conditions: Prevalence, Economic Impact and Work **1**

1.1 Overview of Long-Term Health Conditions 1

1.2 Prevalence of Long-Term Health Conditions 2

1.3 Economic Impacts of Long-Term Health Conditions 4

1.4 Work Impacts of Long-Term Health Conditions – Absence 5

1.5 The Project's Long-Term Health Condition Focus 6

1.5.1 Mental Health Conditions in the Workplace 7

1.5.2 Musculoskeletal Conditions in the Workplace 10

1.5.3 Other Long-Term Health Conditions in the Workplace 12

2 Literature Review: The Background to Workplace Long-Term Health Condition Self-Management Support **16**

2.1 Introduction 16

2.1.1 Approach 16

2.2 WORKPLACE INTERVENTIONS 17

2.2.1 Work Modifications (reasonable adjustments) 21

2.2.2 Workplace Health Promotion Programmes 23

2.2.3 Employee Assistance Programmes 26

2.3 THEORETICAL AND CONCEPTUAL BACKGROUND 28

2.3.1 Self-Management Definitions and Concepts 28

2.3.2 Self-Efficacy and Patient Activation 32

2.3.3 Psychosocial Conceptual Framework 35

2.4 WORKPLACE SELF-MANAGEMENT STUDIES 38

2.5 Summary and Current Project 48

2.6 Research Objectives, Questions and Hypotheses 48

3 Methodological Approach 56

3.1 Research Process 56

3.2 Project Overview 57

3.3 Overview of Participant Recruitment for all Studies 60

3.4 Ethical Approval 61

3.5 Data Protection and Confidentiality 61

4 The Workplace Self-Management Support Needs of Workers with Long-Term Health Conditions – A Survey Study 63

4.1 Introduction 63

4.2 Method 66

4.2.1 Design 66

4.2.2 Procedure 66

4.2.3 Expected Sample Size 67

4.3 Background Survey 68

4.4 Analysis 74

4.5 Results 78

4.5.1 Hypothesis Testing Results 83

4.5.2 Content Analysis Results 91

4.6 Discussion 94

4.7 Summary and Conclusion 99

5 The Nature of Workers Self-Management of Long-Term Health Conditions at Work Over Time: A 10 Week Diary Study 101

5.1 Introduction 101

5.2 Method 104

5.2.1 Design 104

5.3 Participants 104

5.4 Materials 105

5.5 Procedure 108

5.6 Analysis 109

5.7 Results 111

5.7.1 Hypothesis Testing Results 117
5.7.2 Content Analysis Results 121
5.8 Discussion 128
5.9 Summary and Conclusion 132
6 Employer Perspectives Concerning the Self-Management Support Needs of Workers with Long-Term Health Conditions: An Interview Study 134
6.1 Method 136
6.2 Participants 136
6.3 Interview Schedule 136
6.4 Procedure 137
6.5 Analysis 138
6.6 Results 142
6.7 Discussion 159
6.8 Summary and Conclusion 163
7 A Narrative Interview Study of the Self-Management Support Needs of Workers with Long-Term Health Conditions 165
7.1 Introduction 165
7.2 Method 167
7.3 Participants 167
7.4 Interview Framework 168
7.5 Procedure 168
7.6 Analysis 169
7.7 Results 173
7.8 Discussion 186
7.9 Summary and Conclusion 188
8 Discussion 190
8.1 Methodological Considerations, Strengths and Limitations 206
8.2 Implications of the Findings 209
8.3 Future Directions 213

8.4 Summary and Conclusion 215

References 217

Appendices 269

List of Tables

Table 2.1. Level, Description and Types of Intervention Support for Workers with LTCs including Stakeholders and Disclosure Requirements.....19

Table 2.2. Summary of Workplace Health Promotion Interventions.....24

Table 2.3. Summary of Workplace Health Promotion Benefits.....25

Table 2.4. Psychosocial Flags, Context and Description.....38

Table 2.5. Summary of Workplace Studies Featuring Aspects of LTC Self-Management 43

Table 2.6. Table of the Project's Main Objectives and the Studies' Aims and Hypotheses...53

Table 2.7. Table of the Project's Main Objectives and the Studies' Aims and Research Questions.....54

Table 4.1. Summary of the Survey Items by Participant Group 68

Table 4.2. Socio-Demographic Characteristics of Participants by LTC Status 80

Table 4.3. Socio and Health Demographic Characteristics of Participants with LTCs.....81

Table 4.4. Participants Self-Management Characteristics by LTC Group, Including Activation, Disclosure, Workplace Behaviours and Reasoning 82

Table 4.5. ANCOVA Results for Working Conditions, Support and Current Workability for Participants With and Without LTCs.....84

Table 4.6. ANCOVA Results by LTC Group for Activation, Self-Efficacy, Wellbeing, QoL, Working Conditions, Workability and Support.....86

Table 4.7. Correlations Among the Key Survey Study Variables 89

Table 4.8. Regression Analysis Results of Variables Predicting Self-Efficacy, Wellbeing and Workability.....90

Table 4.9. ANCOVA Adjusted and Unadjusted Means by Disclosure Group for Activation, Self-Efficacy and Support 90

Table 4.10. Content Analysis Results and Representative Extracts Concerning Participants Self-Management Confidence and Aspects of LTC Self-Management Improvement 92

Table 4.11. Content Analysis Results and Representative Extracts Concerning One Change Identified by Participants to Enhance their Workplace LTC Self-Management.....93
Table 5.1. Diary Study Participants Socio and Health Demographics.....112
Table 5.2. Other Types of LTC Affecting Diary Study Participants.....113
Table 5.3. Needed Self-Management Behaviours Reported by Diary Study Participants in the Study 1 Survey by Type of LTC 113
Table 5.4. Descriptive Health, Self-Management and Work Characteristics, Average Means for all Diary Study Variables Across the Study Period and by Time-point (T).....115
Table 5.5. Coefficients from the Null and Covariate Models.....117
Table 5.6. Hypothesis 5, 6, 7 and 8 MLM's: Assessing Changes in Participants Self-Management Confidence and Variations between Persons Over Time and Differences in Change Over Time of Participants Self-Management Confidence from Support Satisfaction, LTC Control and Work Engagement 120
Table 5.7. Summary of Content Analysis Headings, Schemes and Categories 121
Table 5.8. Content Analysis Results and Representative Extracts Concerning the Interaction of Participants' Health and Work Over the Diary Study Period 124
Table 5.9. Content Analysis Results and Representative Extracts Concerning Participants Reasons for Self-Management Confidence and Satisfaction with Self-Management Support 125
Table 5.10. Content Analysis Results and Representative Extracts Concerning Types of Self-Management Support Needs 126
Table 5.11. Content Analysis Results of Participant Journal Entries.....127
Table 6.1. Demographic Characteristics of Employer Interview Study Participants 143
Table 7.1. Thematic Analysis Themes and Sub-themes by Psychosocial Flag.....170
Table 7.2. Characteristics and Plots of Frank's Illness Narrative Types 172
Table 7.3. Socio, Health and Disclosure Demographic Characteristics of Worker Interview Study Participants.....174
Table 7.4. Participant Self-Management Behaviours.....176

Table 8.1. Project Findings Related to the Proposed Research Hypotheses 192

List of Figures

FIGURE 2.1. Self-Management Confidence Framework.....35

FIGURE 2.2. Representation of the Project's (Bio)psychosocial Features 37

FIGURE 3.1. Diagram of the Project Approach, Parts and Recruitment Protocol 58

FIGURE 3.2. Summary of the Research Process Applying the Explanatory Design Participant Selection Model to the Project 59

FIGURE 5.1. Overview of the Diary Study Time Schedule.....104

FIGURE 6.1. Six Stages of the Interview Study's Thematic Analysis 138

FIGURE 6.2. Thematic Map of the Study's Final Themes and Sub-themes.....141

FIGURE 6.3. Worker Empowerment Cycle.....154

FIGURE 8.1. A Psychosocial (Flags) Model of Workplace LTC Self-Management Support 212

Chapter 1

1 Long-Term Health Conditions: Prevalence, Economic Impact and Work

This chapter presents the background to the project including an overview of long-term health conditions (LTCs) and a discussion of their prevalence together with the economic and work impacts. This forms an important backdrop to understanding the focus of this thesis. Firstly, LTCs and their prevalence are discussed and key self-management definitions provided. Secondly, the economic and work impacts of LTCs are presented including a discussion of sickness absence and aspects of presenteeism. Thirdly, by presenting evidence from the literature and exploring the two-way relations between LTCs and work, a detailed introduction to those LTCs that are the focus of this thesis is provided.

1.1 Overview of Long-Term Health Conditions

Long-term health conditions (also known as chronic conditions or chronic diseases) are defined by the World Health Organization (WHO) as '*those requiring ongoing management over a period of years*' (Pruitt et al., 2012, p. 11). Similarly, the UK's National Health Service (NHS) defines an LTC as '*a health problem that requires management over a period of years or decades that cannot currently be cured but can be controlled with the use of medication and/or other therapies*' (NHS Business Definitions, 2020). Other terms shed light on LTCs and are italicised and defined in this section.

Long-term health conditions are chronic longstanding illnesses and vast in their diagnoses (Organisation for Economic Cooperation and Development (OECD), 2012). They include mental health (e.g., depression and anxiety), MSK (e.g., arthritis), respiratory (e.g., asthma), neurological (e.g., multiple sclerosis) and endocrine conditions (e.g., diabetes). Long-term conditions can lead to permanent or temporary *impairment* (a part of the body not working correctly) and *disability* (when a part of the body cannot be completely or easily used) (Oxford Dictionary Online, 2020; Oxford Learner's Dictionaries, 2020a). The WHO and NHS definitions capture non-communicable conditions, *disorders* (illnesses preventing parts of the body working properly) and *diseases (*illnesses affecting a person) (Oxford Learner's Dictionaries, 2020b; 2020c). Communicable conditions such as HIV and other stable illnesses and impairments considered chronic, long-term and requiring ongoing management such as deafness are also captured. In this thesis long-term health conditions, illnesses, disorders and diseases are referred to as *LTCs*.

The diagnosis of an illness as a LTC is disruptive. A person's biography and everyday life is interrupted (Bury, 1982) together with impacting family, friends and employers (Beatty & McGonagle, 2016). Whilst diagnosis can entail re-evaluating personal, work and career identities to adjust to potential repeat health losses, an LTC often necessitates the acquisition and integration of new skills such as responding to symptoms (Beatty & McGonagle, 2016; Charmaz, 1995). Although conditions can change people's life expectations (Pesantes et al., 2020), LTCs have strong behavioural components affecting their course including taking medication on time (OECD, 2012). Therefore, self-management tasks might need to be learned and integrated in daily life and this could include the workplace (Corbin & Strauss, 1988; Whittemore & Dixon, 2008).

Despite diagnostic diversity, LTCs are ongoing, mostly incurable and *self-managed* outside of healthcare settings. Self-management is discussed in depth in the next chapter but is broadly concerned with the things people do themselves to manage a condition (e.g., by following a medication regime or attending a medical appointment). Whilst not all LTCs are treatable most are manageable. However, a person's ability to self-manage can be challenged by their conditions' persistent, fluctuating or episodic symptoms, either with or without experiencing acute stages. Therefore, condition severity, pattern of ill health, disability and impairment can change with people moving between periods of wellness and illness (Boyd, 2012; Gignac et al., 2020; Steadman et al., 2015) due to symptoms and treatments. In particular, worsening LTCs are associated with lower self-management confidence (self-efficacy) and poorer wellbeing (Beatty, 2012; Flurey et al., 2014; Lind et al., 2011; Macmillan Cancer Support, 2013; Munir et al., 2007; Nilsen & Elstad, 2009; Steadman et al., 2015; Thompson et al., 2019). This suggests that people might need support that may change over time. Given that many conditions can be affected by external factors including work demands and job support, this could make it hard for employers to decipher what support is needed and create difficulties providing generic support for diverse needs (Gignac et al., 2020). Currently, little is known about workers LTC support needs.

1.2 Prevalence of Long-Term Health Conditions

According to NHS statistics, 26 million people in England are affected by at least one LTC and 10 million by two or more (NHS, 2018). Other statistics based on UK annual population survey data (January to December 2019) report that 18,313,109 people (aged 18 to 99) are affected by LTCs expected to last more than one year (Office for National Statistics (ONS), 2020). Also, due to increased age and longevity the prevalence of LTCs is increasing. By

2030, 40 percent of working age people (aged 16 to 64) are forecast to have at least one LTC (Public Health England, 2016).

Many people with LTCs are working. In Europe between 28 and 33 percent of the working population are estimated to have an LTC (Hutting et al., 2015). Comparably in the UK, 31 percent are reported to have an LTC and are in work (Public Health England, 2019a). Moreover, 81.6 percent of the 5.3 million people with non-disabling LTCs (not impairing day-to-day activities) are reported to work compared to 81.2 percent of the 28.4 million people without a non-disabling LTC who are in work, suggesting that an LTC might not in itself be a barrier to work (Public Health England, 2019a). Other statistics report one in six people of working age having a diagnosable mental health LTC and one in 10 an MSK condition (Public Health England, 2019a). That said a multitude of conditions affect workers. Based on medical records representing five percent of the UK population, one in five people have a history of respiratory illness (British Lung Foundation, 2016) with about 40 percent below usual retirement age (Department of Health, 2011; Megari, 2013). Seventy percent of people with the neurological condition multiple sclerosis are affected during working years (Bevan et al, 2011; Vijayasingham & Mairami, 2018) as are the majority with diabetes (3.8 million) (Diabetes UK, 2018; Ruston et al., 2013). Therefore, workforce LTC profiles are diverse and changeable but little is known about that of UK workers.

Despite the high prevalence of people working with an LTC, there are still around three million people in the UK of working age with disabilities who are economically inactive for health reasons (Powell, 2019). Over half of those with LTCs consider it a barrier to the type or amount of work they do (Public Health England, 2016). Whilst LTCs are not always work disabling (meaning a person is unable to work) worklessness can result due to condition related ill health and put people at risk of early retirement (Bajorek et al., 2016; Nathwani et al., 2015; Waddell & Burton, 2006). Moreover, evidence shows LTCs can negatively affect people's work productivity (de Jong et al., 2015; Kopnina et al., 2014), workability (a worker's assessment of their ability to work) (De Vries et al., 2013; Leijten et al., 2014), quality of (working) life (QoL) (de Jong et al., 2015) and wellbeing (Naylor et al., 2012).

Comorbidities, where more than one LTC occurs at the same time or over time, are an added complexity with 16 to 57 percent of adults in developed countries affected (Hajat & Stein, 2018). Workers with a primary (main) LTC are at risk of experiencing others. For example, people with rheumatoid arthritis are at risk of cardiovascular disease (Crowson et al., 2013). More specifically, existing LTCs increase people's susceptibility to mental health problems. People with back pain and stress are three times more likely to experience

depression (Read et al., 2017) and multiple sclerosis patients are more likely to be depressed (Skokou et al., 2012). Workers with comorbidities also report greater work impairment (Hirschfeld, 2001; Steadman et al., 2016). Given the burden LTCs can impose it is unsurprising the employment rates of people with comorbidities are lower (Powell, 2019).

1.3 Economic Impacts of Long-Term Health Conditions

The economic impact of LTCs is profound. In England the annual cost of worklessness and sickness absence amounts to approximately £100 billion (Public Health England, 2019a). Data from the NHS outcomes framework identified a 10.6 percent difference in the employment rate between the general population and people with LTCs (for the period 1 October to 31 December 2019) (NHS Digital, 2020). Therefore, despite expectations that more working age people will have LTCs those affected are more likely to be unemployed, lessening their economic contribution and creating gaps in employment and human resources. This is troubling because people with LTCs are more likely to be (or become) impaired or disabled, and not working increases the risks of poor health, wellbeing and reduced QoL (Bajorek et al., 2016; Black, 2008; Waddell & Burton, 2006).

There is growing evidence that (good) work is good for people's health and wellbeing including for people with LTCs who, with well managed conditions and support, can often work (Black, 2008; Stevenson & Farmer, 2017; Waddell & Burton, 2006). For these reasons LTCs are an area of government and employer focus (Department for Work and Pensions & Department of Health., 2016; Vandenberg et al., 2015). The aims of this focus are four-fold: 1) job retention; 2) reducing the disability employment gap (the difference between the employment rates of disabled and non-disabled people) albeit LTCs do not necessarily impose disability; 3) boosting economic productivity by keeping and returning people to work; and 4) improving health.

However, workers with LTCs can increase employer costs and reduce productivity. Two concepts commonly incorporated into discussions about the impacts are: 1) sickness absence and 2) presenteeism (OECD, 2012). Sickness absence relates to workers time away from work due to an LTC. Absences are of short (less than four weeks) or long (over four weeks) duration (Chartered Institute of Personnel and Development (CIPD), 2020). Presenteeism relates to workers being well enough to attend work but with reduced performance due to health problems (Schultz et al., 2007) and other work effects of an LTC. In turn, workability can be affected, reflecting the extent to which workers with LTCs are physically and mentally able to cope with demands (De Vries et al., 2013).

Psychosocial approaches to managing and supporting people with workplace disability are recommended (Kendall et al., 2009; Main et al., 2016). Absence and presenteeism (discussed in the next section) can be viewed in a psychosocial context. Psychosocial approaches account for personal factors (e.g., psychological) and social environmental factors including features of work such as manager support. In a recent scoping review of prognostic factors for sickness absence and return to work for workers with mental health conditions, psychosocial factors helped frame the findings that high symptom severity, job demands and strain, plus low support and control predicted sickness absence (de Vries et al., 2018). Therefore, a psychosocial approach is useful to this project and is presented in Chapter 2, Section 2.3.3, p. 35.

1.4 Work Impacts of Long-Term Health Conditions – Absence

According to UK data, 141.4 million working days were lost in 2018 due to sickness and injury (ONS, 2019). Workers with LTCs were one of five groups with the highest absence. The sickness absence taken by workers with LTCs is costly for employers due to productivity losses, but also continuing salary and benefit payments despite work not being undertaken. Therefore, minimising absence and boosting performance is critical for employers.

A 2020 CIPD report presented benchmarking data of UK workers sickness absence (CIPD, 2020). Based on 1,018 employer respondents (in 2019) with reference to 4.5 million workers regardless of LTC status, the average number of sick days marginally decreased from 5.9 per worker in 2018 to 5.8 in 2019. Differently, UK labour market data, based on 1,070 respondents, estimated a lower 4.4 days per worker for 2018 (ONS, 2019). Workers with LTCs reported higher absence (4.4 percent) than those without (1.1 percent) but interestingly, experienced the greatest reduction in sickness since 1997 suggesting LTC related absences could be lessening.

Notwithstanding this trend, sickness absence is problematic. Short-term absence is especially common and disruptive. According to ONS data, in 2018 minor illnesses including coughs and colds, MSK conditions such as back pain, other health problems including diabetes and accidents and mental health conditions (stress, anxiety and depression) were common sickness absence reasons (ONS, 2019). In the CIPD study, for 93 percent of employers (n = 689) minor illnesses including colds and flu were in their top three short-term absence causes. However, for 52 percent of employers, MSK conditions (including neck

strains and back pain) were top causes. This was followed by stress and mental health problems such as depression and anxiety for 38 and 28 percent. Workers with LTCs could need short periods of time off due to fluctuations or acute illness episodes in order to maintain working. Workers could also be more vulnerable to short-term illnesses due to LTC treatments including immunosuppressing therapies. These data suggest that workers with LTCs could benefit from support to minimise periods of sickness absence. Research is needed to explore this further.

Long-term sickness absence is most costly, disruptive and is associated with LTCs. In the CIPD study, for 59 percent of employers (n = 650) mental ill health were main causes, which is a known long-term absence risk (Nexo et al., 2018). In a study of Dutch workers (for the period April 2002 to November 2005), people with depressive symptoms took extended absence and on average, 200 days for men and 213 days for women (Koopmans et al., 2008). In a different study of 4,747 Danish workers, those with severe depression were reported as at risk of future long-term absence (Bültmann et al., 2006). In the CIPD study, MSK problems were also included among the top causes for 53 percent of employers (CIPD, 2020). For 46 percent, stress and acute LTC episodes (e.g., relating to cancer) were joint top causes of long-term absence.

Although LTCs can necessitate sickness absence, workplaces are not arranged to sustain recurrent short and long-term absences. While employers might be accommodating for a time via company sick pay, insured benefit schemes and colleagues picking up work, this is unlikely to be sustainable in the long-term. The foreseeability of regular work attendance and reliability is vital for productivity and continued employment. This includes for workers with LTCs.

1.5 The Project's Long-Term Health Condition Focus

This section presents the LTC focus of this thesis and their work impacts. Mental health and MSK conditions are prevalent in working populations (Powell, 2019) but other conditions also have an important impact. Over 60 LTC groups and an undefined list of long-term conditions exist. Based on the categories of the WHO's *International Statistical Classification of Diseases and Health-related Problems* (ICD-10) (WHO, 2016), three prevalent LTC categories emerged in this project and are its areas of focus: 1) mental health; 2) MSK; and 3) *other* conditions including neurological, endocrine, metabolic and respiratory types. The reasons for these areas of focus are presented in Chapter 4, Section 4.4, p. 74. Next, the

LTCs are introduced including details of their prevalence and the literature concerning their work impacts and interactions.

1.5.1 Mental Health Conditions in the Workplace

According to the WHO mental health is '*a state of wellbeing in which an individual realises his or her own potential and can cope with the n* (WHO, 2018). One in six working age people experience symptoms of mental ill health (McManus et al., 2014). People with severe and common mental health conditions including anxiety and depression, are seven and three times respectively more likely to be unemployed than those without (OECD, 2012).

Mental health LTCs affect people's mood, behaviour and thinking. While diagnoses are diverse, stress, anxiety and depression are most common with 602200 cases of affected workers in 2018/19 (Health and Safety Executive (HSE), 2019a). Although conditions often co-occur, they differ. Stress is an adverse reaction to excessive pressure or demands including personal and job aspects. If an event is perceived as stressful (too demanding) this can manifest in adverse emotional, physical and behavioural ways (Schneiderman et al., 2003) such as headaches and muscular pain. Anxiety causes general feelings of nervousness, fear and unease. Conditions include generalised anxiety disorder and phobias, whereas depression is a (usually) long-lasting mood disorder affecting people's thoughts, feelings and actions. Symptoms vary but include emotional distress, social withdrawal and physical symptoms like breathlessness. In the UK, combined anxiety and depression are more common than any other mental health condition including bi-polar disorder and schizophrenia (National Institute for Health and Clinical Excellence (NICE), 2019).

Mental health LTCs have a considerable economic impact. In the UK the annual costs are estimated between £74 and £99 billion in lost output (Stevenson & Farmer, 2017). As discussed in the previous section, mental health conditions are a leading cause of sickness absence affecting employer costs, staffing and service provision. In 2018, the sickness absence taken by UK workers with stress, anxiety and depression was estimated to account for 17.5 million lost working days (ONS, 2019). Nonetheless, according to a collaborative report from Oxford Economics, the Work Foundation and UNUM, workers with mental health LTCs contributed a £226 billion gross value added contribution to UK gross domestic product (GDP) in 2015 (Oxford Economics, 2016).

Costs are not always explicit or limited to sickness absence. Evidence suggests that workers with mental health LTCs can *present* (i.e., attend work) with compromised performance (De

Lorenzo, 2013). Whilst some evidence suggests workers can turn off an LTC to maintain workability, by engaging with other things including work tasks and distracting themselves from an LTC (Jansson & Gunnarsson, 2018), in one study and compared to controls, workers with depression reported more problems with mental and physical tasks and time management (Adler et al., 2006). A different study highlighted more adverse effects of psychological conditions on older workers (aged 45 - 64) workability and productivity, when compared to other conditions such as MSK and diabetes (Leijten et al., 2014). More recently, studies suggest depression more negatively impacts productivity and absence than anxiety (Hendriks et al., 2015) and that relative to stress, depressive symptoms affect people's workability more (Lerner et al., 2010). This might not be surprising because mental health conditions can impair cognition and concentration. Whist differences should not underplay the effects of any mental health condition, this suggests that their impact on work is considerable but various, and with workers affected differently.

Workers' management of mental health can interfere with work productivity. In England, 65.6 million prescriptions for antidepressants was reported in 2016/17 (NHS Business Services Authority, 2017). Whist an important treatment, the medication is not without undesirable side effects including headaches and fatigue. In a focus group study of workers taking anti-depressants, the physical side effects disrupted people's work productivity, made people feel worse, failed to improve symptoms and had as much negative work effects as the symptoms of anxiety and depression (Haslam et al., 2004). Another study showed cognitive behavioural therapy (CBT) for depression had a more beneficial longer-term effect on people's employment status than antidepressant treatment (Fournier et al., 2015). Despite the general view that taking medication to manage mental health symptoms is beneficial, this suggests it is not necessarily helpful for work purposes. Therefore, affected workers seem to have to balance the risks (adverse effects) and benefits (performance) in order to manage a conditions potentially multifaceted effects.

Psychosocial work features including job demands, control and support can promote, cause, undermine and aggravate LTCs. Two important features are stressors (working conditions) and stigma. It is well known that work can be stressful such as due to high job demands (Liang et al., 2018) but specifically, stress can undermine mental health (HSE, 2019a), worsen problems and trigger new ones (Cooper & Cartwright, 1994). In a Dutch study of a general working population (n = 3,707), high psychological demands, low decision latitude, low support, high emotional demands and poor manager relations were associated with the onset of anxiety (Andrea et al., 2009). Another study found leaders with laissez faire attitudes promoted worker stress by creating role ambiguity (Skogstad et al., 2014).

Comparably, another study found role ambiguity impaired workers' ability to employ resources to achieve job tasks (Harris et al., 2006). These studies suggest that workers with long-term mental health conditions may be more vulnerable to work stress which could undermine their productivity and workability. Workers could be more vulnerable to work stress due to the potential burden and additional stressors a mental health LTC imposes including stigma. Despite this, not enough is known about the working conditions of those affected.

Stigma is a complex workplace problem affecting workers' social interactions. A qualitative study of workers with multiple sclerosis and their impression management (i.e., the efforts taken to control the impression others make of you) defined stigma as: '*a universally defined trait or characteristic of a group that is devalued and deeply discreditedô*(Vickers, 2017 p. 178). Stigma prompts negative responses including defamatory and discriminatory comments and can affect people's behaviour, including at work (e.g., a manager not allocating work to a worker with a long-term condition because of expectations about health and capability). Broadly, stigma negatively differentiates people from others and can result from social situations such as team meetings. Moreover, because stigma is affected by people's perceived social roles (Goffman 1963) its affects are variable. What the literature makes clear is that long-term health conditions (particularly mental health conditions) are heavily stigmatised (Brouwers et al., 2019).

As workers' disclosure of an LTC can facilitate access to workplace support, including for self-management and authenticity (Brouwers et al., 2019; Munir et al., 2005b), not being able to be open about an LTC due to stigma could make managing a condition at work difficult. Challengingly, stigma manifests in many workplaces. Stigma presents inaccurate and sometimes prejudicial and discriminatory pictures of LTCs (e.g., depressed workers are unreliable) (Brohan et al., 2010). Mental health LTCs are especially stigmatised (Brouwers et al., 2019; Brouwers, 2020; Butler & Modaff, 2016; Stratton et al., 2018).

Stigma signifies that being open, for example by disclosing depression (telling someone about a condition in a conversation) is risky (Munir et al., 2005b), and precludes workplace support (Brouwers et al., 2019). In one study, 40 percent of workers with mental health conditions (n = 2000) were too afraid to disclose, fearing their career would be jeopardised (The Mental Health Foundation., 2017). In contrast, a high 96 percent disclosure rate was reported in a study of workers with physical conditions (Varekamp & van Dijk, 2010). Nonetheless, the literature makes clear that closedness about an LTC is unhelpful. In a secondary analysis of cross-sectional survey data concerning manager support for workers

with depression, managers not openly talking about depression with workers was associated with people taking more sick leave (Evans-Lacko & Knapp, 2018). For these reasons, de-stigmatising work interventions aimed at improving attitudes toward mental health are recommended (Brouwers et al., 2019). Feasibly, this could promote worker's self-management of mental health conditions but little is known about this.

1.5.2 Musculoskeletal Conditions in the Workplace

Musculoskeletal conditions are disorders, injuries or damage to the joints or other tissues in the upper and lower limbs or the back including nerves, tendons, muscles and supporting structures. Inflammatory conditions (e.g., rheumatoid arthritis and rheumatism); painful MSK conditions (e.g., back pain); and degenerative conditions (e.g., osteoarthritis and spondylosis) are three main types (as cited in Versus Arthritis, 2019). Conditions often accumulate over time (providing a valuable insight given ageing workforces) and whist all age groups are affected, MSK problems are a considerable burden on working age people (Walker-Bone et al., 2004).

In the UK, around three in 10 people are affected by an MSK condition (Versus Arthritis, 2019) and in 2018/19, 498,000 workers reported work related MSK conditions (new or long-term) including of the back, upper and lower limbs (HSE, 2019b). Similar to people with mental health conditions, evidence suggests that people's work capacity is affected. For example, the work capacity of people with arthritis is reduced within five years of diagnosis (WHO Scientific Group, 2003). A US study suggested 23 percent of people with arthritis stop working within three year of diagnosis (Allaire et al., 2008) and the disability rates of those affected are substantial (Verstappen et al., 2004). Moreover, an earlier cohort study of UK workers with arthritis found that people were 32 times more likely to stop working due to their LTC compared to matched controls (Barrett, 2000). In sum, while not usually life threatening the evidence suggests that MSK conditions can significantly affect people's workability. This is unfortunate because working can improve QoL for people with LTCs (de Jong et al., 2015).

Similar to mental health, MSK conditions were a main cause of sickness absence in 2019, second most common in 2018 (ONS, 2019) and year-on-year dominate as a cause, accounting for approximately 30 million yearly lost working days (Public Health England, 2019b). While recent reports suggest a marginal downward trend in work-related MSK conditions (HSE, 2019b) and high return to work rates after MSK-related absence (Wynne-Jones et al., 2014), not all conditions are work related. Also and regardless of causation,

MSK symptoms can interfere with workability and recurrent problems can put continuing employment at risk (Bugajska & Sagan, 2014).

Musculoskeletal conditions are a main cause of health related productivity loss, and in Europe (among those of working age) is estimated to be as high as 2% of GDP (Bevan, 2015). While conditions can lead to work disability many affected people work and are keen to continue (Holland & Collins, 2018). Nonetheless, conditions can be disruptive to work. Evidence reports high proportions of workers with upper back and neck pain (49 percent) having high sickness presenteeism (Aronsson, 2000), with workers' productivity and work quality adversely affected (Summers et al., 2014). Just as a long-term mental health condition can impair concentration, MSK symptoms can distract workers from doing their job properly. For example, rheumatoid arthritis symptoms can be acutely painful and disabling (Varekamp et al., 2005) and can impair concentration, reduce movement and workability (Aronsson et al., 2000; Miranda et al., 2010; Wynne-Jones et al., 2014).

Several psychosocial features have been shown to affect workers with MSK conditions. High job demands and low control have been shown to predict so-called repetitive strain injury and other MSK complaints, and contribute strongly to sickness absence (Bugajska & Sagan, 2014), pain and LTC severity (Bergsten et al., 2015; Torp et al., 2001). In a study of manual workers, those with perceived work control and social support coped better with MSK problems (Torp et al., 2001). Additionally, ergonomic features including physical and environmental elements, such as manual handling and job design, can have important effects. For example, repetitive strain, awkward posture, task repetition and exertion are all risk factors for MSK problems (Summers et al., 2014). This suggests that the relations between MSK conditions and features of work are multifaceted. Therefore, psychosocial approaches can help us explore the experiences of workers with MSK conditions, particularly because conditions are often non-specific including where causes of pain are unclear (Bartys et al., 2017; Kendall et al., 2009; Roquelaure, 2019; Waddell, 2006). It can be drawn that targeting psychosocial features of demands, control and support might be beneficial. However, we need to know more about these features to ascertain this.

As discussed earlier, stigma defines traits and characteristics of groups that are devalued and discredited, eliciting negative responses. Similar to mental health LTCs the literature suggests stigma can undermine people's disclosure of MSK conditions and lead to mental distress and presenteeism (Bevan, 2015). In a study of 490 workers with arthritis, those with physical limitations and perceived peer support were more likely to disclose (Gignac & Cao, 2009), perhaps because an LTC is more noticeable and due to regular interactions in the

working day. Moreover, in the study of a workplace psycho-educational self-management support intervention, for workers with chronic physical MSK health limitations (e.g., aches and discomfort), employers perceived the programmes' specification of '*chronic p a i* as a barrier to workers openness to participate (Pransky et al., 2014). Overall, understanding the interactions between MSK conditions and psychosocial features could be key to identifying and providing effective workplace support to enable workers to look after MSK conditions themselves.

1.5.3 Other Long-Term Health Conditions in the Workplace

Common LTCs in working populations have been discussed. However, other LTCs occur among working age people. These can be usefully grouped as neurological, endocrine and metabolic, and respiratory. Together these groups which represent the majority of *other* conditions in this project are presented and briefly discussed.

Neurological LTCs are disorders of the nervous system including the brain, spinal cord and nerves and have diverse affects. About one in six people have a neurological condition including migraine, epilepsy, multiple sclerosis and Parkinson's disease (Neurological Alliance, 2019). Conditions can lead to significant sensory and mobility deficits. In multiple sclerosis a person's immune system mistakenly attacks healthy cells, with 130,000 people estimated to be affected in the UK (MS Society UK, 2020) and was prevalent in this project's *other* LTC group. Mainly diagnosed in people's 20s or 30s symptoms vary and include cognitive, mobility and continence deficits. In Parkinson's (characterised by involuntary and slow movement) brain cells are lost over time and estimates suggest 145,149 people over age 20 are affected (Parkinson's UK, 2018). Globally, neurological LTCs are the largest cause of disability (Holland & Collins, 2018) and those affected are likely to withdraw from working early (Zwibel, 2009). In one study, 42 percent of people with multiple sclerosis were working with employment rates declining over time (Ford et al., 2012; Vijayasingham & Mairami, 2018). While people with Parkinson's disease reportedly lose employment five to nine years from their first symptom (Murphy et al., 2013).

Endocrine LTCs are concerned with the over or under production of hormones while metabolic conditions relate to problems in processes regulating nutrients, vitamins and energy from food. Common conditions include diabetes and hypothyroidism. In diabetes the body experiences problems regulating sugar or glucose. In hypothyroidism not enough hormones are produced leading to symptoms of tiredness, depression and weight gain. This discussion focuses on diabetes of which two predominate: type 1, which is mostly managed via insulin injections and type 2, which is more often managed via lifestyle factors including

diet rather than injections. Similarly to other LTCs, symptom severity varies but include dizziness, thirst and blurred vision and can lead to complications with nerves, kidney function and cardiovascular health. Forecast to rise to 5 million by 2025 (Fit For Work, 2017), at least four million people are diabetic in the UK (Diabetes UK, 2019) and many of these are below retirement age. While one study showed workers with type 1 diabetes were no more likely to retire than the general population (Hakkarainen et al., 2017b), a recent review found consistent evidence diabetes has a negative association with work participation (Pedron et al., 2019).

Respiratory LTCs are a major disease burden in the UK (Salciccioli et al., 2018) and are characterised by obstructed air flow making breathing difficult. Research by the British Lung Foundation (between 2013 and 2016) suggests about one in five people has developed chronic obstructive pulmonary disease (COPD) including bronchitis and emphysema, asthma or other long-term respiratory illness (British Lung Foundation, 2016). Symptoms include coughing, wheezing, tightness of the chest and shortness of breath, with at least 160,000 people diagnosed with asthma each year in the UK. Second most common, 1.2 million people are living with COPD (British Lung Foundation, 2016), with 80,000 diagnosed annually in England (National Institute for Health and Clinical Excellence (NICE), 2018). Respiratory LTCs are a major cause of disability and associated with low employment rates and high worklessness (Patel et al., 2014; Sin et al., 2002).

Comparing sickness absence data from different sources is problematic due to differences in absence measures and LTC categorisation. Moreover, data for LTCs that are not main absence causes is scarce. However, similar to workers with mental health and MSK conditions, workers with other LTCs take periods of sickness absence. Based on ONS data, respiratory conditions accounted for 2.8 percent of UK sickness absence in 2018 (ONS, 2019). Whilst the ONS's *other* condition category accounted for 13.7 percent of sickness absence, conditions are consolidated into a broad category making it impossible to attribute absences to neurological, endocrine and metabolic LTCs. Nonetheless, prior research suggests that workers with multiple sclerosis and workers affected by asthma, have elevated absence levels compared to controls (Hansen et al., 2012; Landfeldt et al., 2016), and diabetic workers are highlighted as at risk of long-term absence (Nexø et al., 2019).

Consistent with mental health and MSK conditions, characteristics of other LTCs can undermine workers' productivity and workability. People can struggle to work or withdraw early due to symptoms and progression. For workers with COPD, the condition can interfere with a person's ability to cope with strenuous work activities (Sin et al., 2002). Evidence

suggests that mobility and cognitive symptoms representative of multiple sclerosis can obstruct work by making movement and concentration hard (Vijayasingham & Mairami, 2018). In a different study of 377 workers with multiple sclerosis, productivity losses were reported by almost half and were associated with fatigue, depression and increased condition severity (Glanz et al., 2012). Similarly, common diabetes symptoms including fatigue can lead to reduced productivity and work limitations (Tunceli et al., 2005) which could predict future work disability (Van Amelsvoort et al., 2002; Weijman et al., 2003). Furthermore, despite inconsistencies in the evidence between respiratory conditions, including for COPD's effects on work productivity (Rai et al., 2018), studies show reduced work participation of people with COPD and high incidents of presenteeism in workers with asthma especially with increasing condition severity (Hiles et al., 2018; Sin et al., 2002). A small Finnish population-based study associated both mild and more severe asthma symptoms (in males aged around 20) with reduced workability at 40 (Lindström et al., 2011). As the effects of other LTCs are variable, conditions could undermine people's workability in multifaceted ways.

As previously suggested, psychosocial features interact to affect workers' health and behaviour and can impose limitations on people's workability. These include features of work. Whilst ergonomic features might be more recognisably associated with MSK and respiratory conditions, they remain important for other LTC types. For example, while the workplace is arguably neglected in research featuring workers with multiple sclerosis (Vickers, 2008), studies highlight how open-plan features of work and poor toilet access are problematic, making accommodations for workers with multiple sclerosis difficult (Vickers, 2017; Vijayasingham & Mairami, 2018). Physical and less adapted work demands are also suggested to impact the workability of workers with multiple sclerosis (Wickström et al., 2017). Furthermore, features of poor relational and social support can be problematic (e.g., fearing stigma, colleague resentment and poor manager support), while in a study of workers' asthma self-management, low decision latitude (i.e., control) and low social support, were associated with poor symptom self-management (Heinrichs et al., 2019). A study of diabetic workers similarly highlighted the influence of work features. Diabetic workers with high workloads were more likely to perceive injecting insulin as burdensome with social support positively related to workers dietary management of type 2 diabetes (Weijman et al., 2005b).

Stigma serves to devalue and discredit people by their health status. While it might be argued that LTC related stigma is non-specific to work (Goffman, 2009), the literature concerning workers with multiple sclerosis relates work productivity losses and depression to

workers perception of stigmas (Cadden et al., 2018; Hategeka et al., 2016) and disclosure to job retention (Kirk-Brown et al., 2014). Other research alludes to the complexity of disclosure decisions. Whilst studies show workers with diabetes and asthma worry about disclosing because of stigma, for some this was to avoid personal embarrassment (Ruston et al., 2013; Zhao et al., 2018). In contrast, a study of workers with arthritis research found many workers had disclosed their condition inferring stigma was not a pronounced problem (Gignac & Cao, 2009). Nonetheless, as non-disclosure could result in workers feeling unable to self-manage and, given stigmas are changeable, it follows that productivity losses could be reduced if workers with other LTCs felt more able to be open.

In summary, it is clear that LTCs can affect workers attendance, productivity and workability thus people's QoL. It is inferred that LTCs affect employer and government costs in an unsustainable way and the literature suggests that problems are not limited to workers with mental health and MSK conditions. It is also indicated that in addition to an LTC's affects, psychosocial features such as job demands, support, symptoms and stigma impact a person's work capability. However, these features need to be brought together to account for personal aspects including workers' confidence to self-manage an LTC if the restrictions a condition imposes are to be reduced and managed. The next chapter presents this project's theoretical focus, conceptual backdrop and discusses the workplace LTC self-management support literature. It begins by examining common workplace interventions aimed at supporting workers with LTCs to reduce problems.

Chapter 2

2 Literature Review: The Background to Workplace Long-Term Health Condition Self-Management Support

2.1 Introduction

This chapter presents the background to workplace LTC self-management support and further establishes the rationale for this project. Firstly, the literature search approach is described. Secondly, using the literature existing workplace health support is examined. This focuses on an examination of primary, secondary and tertiary level interventions. Thirdly, as the literature suggests that *self-management* concepts vary, are ambiguous and interchangeable (Ellis et al., 2017; Van de Velde et al., 2019), the definitions to this project are introduced and explained. Fourth, the project's theoretical basis including self-efficacy and patient activation is discussed and the conceptual framework presented. Finally and to position the project, the literature featuring workplace LTC self-management support is reviewed and discussed.

2.1.1 Approach

To identify key studies and research gaps, searches of the academic literature were conducted. A traditional review approach was taken (Dijkers, 2009) in order to provide a broad picture of the topic, meaning a strict methodology was not followed. While traditional approaches are criticised for their lack of systematicity (Grant & Booth, 2009), a methodical approach was taken by the researcher. An initial search sought to understand what LTC self-management is, how people self-manage, what self-management support is available, why support is important and in the workplace. This was in order to explore and understand the current state of knowledge, isolate and define concepts, identify workplace support and deficiencies, and inform the studies' design.

Firstly, based on the thesis research question and the researchers' existing knowledge of work interventions, initial search terms were identified including: health promotion, employee assistance and adjustments, self-management, self-management support, long-term health condition, workplace, self-efficacy, employer and employee. Synonyms such as self-care, worker and modifications were identified. A search of databases (including PsychInfo, Scopus, PubMed, BMJ and Cochrane) with no time filters, and then with a <10 year filter were undertaken with Boolean terms. The study titles and abstracts of the results were reviewed by the researcher, and compared against the project objectives to decide their relevance. For example, did the article cover self-management or LTC support at work and

were workers or employers included? The initial review was broad and articles (n =75) were recorded in a table by their main findings and LTC(s) focus. Articles the researcher identified as key due to their workplace specificity or quality were highlighted.

Based on the initial search, it was felt that there was not enough data for a systematic review of workplace LTC self-management support need studies to yet be useful. Whilst the research base for LTC self-management and support is ample, the evidence related to mainly clinical, primary care and health disciplines rather than work or worker's needs. To narrow and consolidate the evidence and build on highlighted articles, searches were re-run with additional terms and synonyms incorporating concepts (and LTCs) emerging from the literature. These included patient activation, workability, psychosocial, mental health and MSK and synonyms such as chronic conditions and worker. Articles were reviewed by the researcher in the same way. Recent systematic reviews have examined the evidence for interventions supporting the work maintenance of workers with LTCs (Nazarov et al., 2019), determinants of workers self-management of asthma (Heinrichs et al., 2018) and the overall evidence for self-management support (Dineen-Griffin et al., 2019; Taylor et al., 2014). Sixty five articles are included in the review below including 15 systematic reviews.

Over the project period, alerts via zetoc helped the researcher maintain knowledge and searches were periodically rerun with time filters. In addition, given the researchers' professional background in human resources (HR), health and wellbeing and awareness of organisations such as the Health Foundation, the grey literature was included. It is suggested that much of the evidence for public health related matters is contained in the grey literature (Adams et al., 2016). Given this project's work context accounting for this evidence was felt appropriate. The literature for existing workplace health support is examined next as primary, secondary and tertiary level interventions.

2.2 WORKPLACE INTERVENTIONS

This project is concerned with the self-management support needs of workers with LTCs. But how are workers with LTCs currently supported? Workplace support is mainly provided through generic health promotion, or disability management interventions characterised by formality (e.g., a workplace policy or programme). Health promotion interventions are generic forms of employer support concerned with keeping people well, encouraging behaviour change, reducing LTC risks and absenteeism, and promoting productivity (Bending et al., 2008; Meng et al., 2017). Whilst a recent systematic review of 12 workplace interventions (featuring n = 2,752 people managing MSK problems) including resistance and

strength training indicated condition specificity to programmes (Skamagki et al., 2018), most are unspecific to LTCs. Disability management interventions focus on workplace changes to jobs and working practices to help people remain at, or return to, work (Williams-Whitt et al., 2016) and can be more specific.

Broadly speaking, interventions can be conceptualised as forms of vocational rehabilitation (Waddell et al., 2008) ranging from ergonomic assessments, education sessions, smoking cessation classes and coaching, to mental health first aid training (MHFA), and employer policies and practices such as for *modifications* (Main et al., 2016) e.g., flexible hours and job changes. Therefore, the types of interventions are vast and the evidence for their effectiveness is variable perhaps because of this.

Drawing on the literature, common interventions for workers with LTCs can be grouped under three headings and levels *primary*, *secondary* and *tertiary* (Goetzel & Ozminkowski, 2008). The levels and the interventions they capture are summarised below:

1. *Primary* interventions can be fixed, regulatory and are concerned with preventative action to reduce the risks of an LTC (e.g., health screening);
2. *Secondary* interventions are episodic, responsive, rehabilitative and relate to reducing an LTCs impact and symptoms (e.g., work modifications);
3. *Tertiary* interventions help workers take action by providing support when LTCs affect work and intend to reduce longer-term effects (e.g., occupational health (OH) support).

Practically, interventions are often amalgamated into workplace health and wellbeing strategies. This means that disclosure of an LTC and employer awareness (i.e., making a manager aware of an LTC) can be, though not always, a prerequisite to accessing support. Intervention levels and examples of support are presented in Table 2.1 with key stakeholders and disclosure requirements highlighted. Common interventions that might support workers with LTCs (by level) include:

1. Work modifications (secondary and tertiary);
2. Workplace health promotion programmes (WHPs) (primary);
3. Employee assistance programmes (EAP) (tertiary).

The evidence for the interventions in supporting workers with LTCs is discussed next.

Table 2.1. ***Level, Description and Types of Intervention Support for Workers with LTCs including Stakeholders and Disclosure Requirements.***

Level	Description	Types	Stakeholders and disclosure
PRIMARY Regulatory, fixed, preventative.	Equality Act, 2010.	- Terms, conditions, contracts; - Equal opportunity policies; - Working practices.	- Government; - Employer;
	Health & Safety Act at Work, 1974.	- Workplace policies; - Ergonomic assessments.	- Employer; - Government; - Health and Safety Executive.
	Health promotion programmes.	- Diet and lifestyle, onsite gyms; - Stop smoking programs; - Education programs, counselling, mental health first aid training; - Health assessments and screening; - Flu jabs, eye tests and cancer screening.	- Employer; - GP and occupational health; - Workers choose to participate; - Charities.
	Ergonomic and environmental.	- Ergonomic assessments including desk and seat adjustments; - Removal of workplace hazards;	- Employer; - Occupational health; - Health and safety;
	Psychosocial factors.	- Demands, control, support, relations, manager/peer support, change; - Stigma and authenticity; - Working patterns.	- Employer; - Colleagues; - Unions, works councils, worker networks.

Level	Description	Types	Stakeholders and disclosure
SECONDARY Responsive, episodic, rehabilitative.	Modifications (adjustments).	- Reduced hours/targets, home working, reassigned duties, redeployment; - Return to work programmes and vocational rehabilitation.	- Employer, GP, occupational health and worker; - Worker disclosure mostly required.
	Equality Act, 2010.	- Reasonable adjustments.	- Employer; - Worker disclosure mostly required.
TERTIARY Supportive, enabling, long-term.	Social support.	- Work based support groups, worker networks; - Line manager training; - Employee assistance programs; - Occupational health services; - Private health insurances; - Stress-management; - Resilience training.	- Employer; - Colleagues; - Benefit providers; - Worker chooses to join networks and attend programs.
	Equality Act, 2010.	- Adjustment duties.	- Employer; - Worker disclosure required.

2.2.1 Work Modifications (reasonable adjustments)

One way of supporting workers with LTCs is via work *modifications* including altered hours and job(s). At a secondary level, modifications would seek to reduce the harm working practices (e.g. working hours and job demands) may pose to an LTC. At a tertiary level, modifications could be embedded in return to work programmes in order to help faciliate worker's workability on return from sickness absence. The Equality Act (2010) is UK legislation that protects disabled workers and is a main way workers access modifications for LTC support. This mandates employers to make work modifications termed *reasonable adjustments* under the Act (mostly referred to as modifications herein). The Act protects a worker when: 1) a person (P) has '*a physical or mental impairment* ô *a has a substantial and long-term adverse effect on a Pôs ability a c t i v* (Equality Act, 2010, c.6); or 3) has multiple sclerosis, HIV or cancer; and 4) an LTC is disclosed or an employer is reasonably aware a person has one. Consequently, the Act protects many workers with LTCs but not all.

A systematic review of interventions promoting the work participation of people with LTCs found that those focused on changing aspects of work including hours (at secondary and tertiary levels) were most effective (Vooijs et al., 2015). As the Act requires employers to consider and implement '*r e a s o n a b l e* , including practical aids for people with LTCs, in this way it targets employers' behaviour towards workers with LTCs to reduce any disadvantages (Clayton et al., 2012). A recent synthesis of qualitative studies concerning workers' self-control of LTCs found that modifications were crucial for work retention, productivity and the management of LTC fluctuations (Bosma et al., 2019). By changing aspects of work and making working easier (Vooijs et al 2015), modifications can reduce the limitations an LTC imposes (Munir et al., 2005a). This could aid workability by modifying hours to lessen fatigue, promote work attendance, restore work capability (Holland & Collins, 2018) and prevent premature work exits (Bevan et al., 2011). Modifications emerge in the literature as a disability management intervention (more than a means for workers to self-manage an LTC). The evidence for modifications is substantial and discussed next (see Appendix 1 for a summary of the 22 studies reviewed).

Whilst being unable to modify work can be detrimental to people returning to work from LTC related absence (Bastien & Corbière, 2019; de Boer et al., 2017; Johansson et al., 2006), a worker's ability to undertake LTC related tasks whilst *at work* can be impeded by inflexibility (Mannerkorpi & Gard, 2012). Inflexibility is suggested to lead to poor self-management of MSK conditions (Shaw et al., 2012), and low levels of modifications and autonomy can lead to greater sickness absence (Boot et al., 2013; Leijten et al., 2013; Nilsson et al., 2013).

Furthermore, in one study diabetic workers put themselves at risk of complications by running blood glucose levels high rather than modifying work (Ruston et al., 2013).

Whist some evidence suggests that modifications should be more accessible for LTCs (Clayton et al., 2012) other evidence suggests they are already accessible. In a Dutch study of 2,631 workers with chronic disease, 22 of the 30 percent needing modifications received one (including for MSK, mental health and respiratory conditions) (Boot et al., 2013). In a study of 746 workers with multiple sclerosis, 87.7 percent reported receiving a modification (Leslie et al., 2015). Moreover, a qualitative study of modifications and support for workers with chronic conditions reported managers regularly interacting with workers to accommodate periods of illness and pain (Nelson et al., 2016). Nonetheless, not all modifications are effective and in Leslie et al's (2015) study of workers with multiple sclerosis, modifications did not promote workers' job satisfaction or longevity.

One of the problems with modifications is knowing what changes to make, when and for how long. For example, modifications for mental health LTCs might be less straightforward than making buildings accessible for impaired mobility (McDowell & Fossey, 2015). Fluctuating features of LTCs including changeable severity further complicates matters. Despite this, modifications for flexibility and control are generally effective (Bastien & Corbière, 2019; Clayton et al., 2012) and a scoping review of nine studies (concerning workers with mental health LTCs) identified flexible working, modified jobs and training as important (McDowell & Fossey, 2015). Furthermore, a focus group study of 27 workers with the MSK condition fibromyalgia identified work and job demands as important modifiable factors (Mannerkorpi & Gard, 2012).

However, research of cancer survivors suggests that managers can perceive modifications as burdensome (de Boer et al., 2017) and in a study of employer attitudes toward mental health, less than one third had a prescribed approach to modifications (Little et al., 2011). In an interview study of workers with back pain, modifications were casually agreed and implemented with managers, with OH reportedly lacking expertise (Coole et al., 2010). Other research suggests modifications are more available to workers who are physically limited rather than cognitively including workers with depression and anxiety (Munir et al., 2005b). So despite the regulation's intention to reconcile workers LTC needs with work in a standardised way (Bell, 2015), this is not always so (Baanders et al., 2001). On the other hand, in the UK not all modifications are (or need to be) delivered under the Equality Act. Informal leeway including giving people latitude to modify their own tasks and routines

(Nelson et al., 2016; Tveito et al., 2010) could allow workers the freedom to adjust to an LTC.

What stands out is that modifications can enable workers to self-manage. Yet employers implementation of regulations, together with the disempowerment of workers in work processes (where they might not have any real authority to modify work), could be obstacles (Baanders et al., 2001; Bell, 2015; Foster, 2007; Nelson et al., 2016; Paulides et al., 2019; Vornholt et al., 2018; Williams-Whitt et al., 2016). Employers' restrictive enforcement or misinterpretation of modification duties (Bell, 2015) could also cause problems. These problems are no more apparent than in UK employment tribunal cases (where a worker raises a legal complaint against an employer). In one case, an employer was in breach of the Equality Act's duty to make *reasonable adjustments* (modifications) by failing to allocate a worker with ulcerative colitis a parking space near a toilet (Mrs Linsey v Her Majesty's Revenue and Custom, 2018). Whereas in a different case, an employer was justified in refusing home working for a worker with severe back problems (Mrs Shah v TIAA Limited, 2018). Therefore, the modifications a worker considers *reasonable* might not be viewed the same by their employer or a tribunal, potentially making workplace LTC self-management impossible.

In sum, despite their potential benefits modifications are not always possible (Bosma et al., 2020a). Yet employers are not always aware of modification needs, so may act without reason when declining requests. It also cannot be assumed that modifications are always feasible or will be effective. Whilst the ability to generalise studies' findings are limited to the workplace, worker and LTC status in question at the time, diverse modification needs emerge from the literature. Whilst some jobs will be unmodifiable, flexibility and changes that empower workers to meet LTCs demands are largely important. However, it would be useful to better understand how modifications support workers self-management.

2.2.2 Workplace Health Promotion Programmes

Workplace health promotion programmes are common (primary) interventions aimed at improving workers health and wellbeing, preventing LTCs and their progression. The European Network of Workplace Health Promotion (ENWHP) defines health promotion as the '*combined efforts of employers, workers and society to improve the health and wellbeing of people*' (ENWHP, 2007, p.2). Programme support is directed at workers' knowledge and understanding to target health behaviours, and work settings to facilitate healthy behaviour (Leka & Houdmont, 2010; Noblet & LaMontagne, 2006). Programmes can include smoking cessation classes, diet and exercise advice or access to on-site gyms and

mental health counsellors. Programme examples and their target populations are presented in Table 2.2.

Table 2.2. ***Summary of Workplace Health Promotion Interventions.***

Level	Population	Examples
PRIMARY: Prevention.	Without LTCs.	- Weight management; - Fitness initiatives; - Flu jabs.
SECONDARY: Risk reduction.	At high risk of LTCs.	- Health behaviour advice e.g., stopping smoking; - Weight loss courses; - Health screening; - Mental health first aid training.
TERTIARY: Management.	With LTCs.	- On-site physio; - Workplace counsellors; - Cognitive behavioural therapy; - Maintenance of work and return work programmes.

The World Health Organization (WHO, n.d.) identifies several WHP benefits (summarised in Table 2.3). When designed properly, programmes have been associated with improvements in workers' health and productivity (Goetzel & Ozminkowski, 2008), reduced sickness absence, improved mental wellbeing and work satisfaction (Aust & Ducki, 2004). In a study of 237 Austrian workers, WHPs improved subjective well-being from workers' perspectives (Nöhammer et al., 2011). Well-designed WHPs have leadership commitment, are evidence based, multi-component and evaluated (Goetzel & Ozminkowski, 2008). However, an evidence review assessing the evidence for WHPs suggested employer approaches are due to convention rather than evidence (Hill, 2007). Moreover, WHPs are multitudinous and target general health behaviour more than LTC related behaviour.

Overall, the evidence for WHP's effectiveness varies which could relate to their vastness. Thirteen studies examining the evidence are discussed in this section (see Appendix 2 for a summary of the studies).

Table 2.3. ***Summary of Workplace Health Promotion Benefits*.**

Employer	Worker
Well-managed health & safety	Safe & healthy work environment
Positive and caring image	Enhanced self-esteem
Improved staff morale	Reduced stress
Reduced staff turnover	Improved morale
Reduced absenteeism	Increased job satisfaction
Increased productivity	Increased skills for health protection
Reduced health care/insurance costs	Improved health
Reduced risk of fines & litigation	Improved sense of well-being

A systematic review of 74 (systematic) reviews focusing on the effectiveness of WHPs (including CBT, mindfulness sessions and sit-stand desks) for the prevention of MSK and psychological conditions and for older workers, found that the scientific evidence was too limited to recommend specific interventions (Pieper et al., 2019). However, moderate evidence for the positive effects of CBT and stress management on stress, and for ergonomic interventions on MSK pain were reported. Other reviews found moderate evidence for WHPs reducing workers absence and enhancing workability, with psychological and education programmes having little impact on absence or wellbeing (Kuoppala et al., 2008). However, the findings of a randomised controlled trial, assessing the effects of a mental health first aid training (MHFA) programme for 89 line managers, suggests that enhancing managers' knowledge and understanding helps improve mental health support for workers (Moffitt et al., 2014). While research suggests MHFA cannot be relied on for managing workplace mental health (Morgan et al., 2018), this infers that WHPs promoting managers' awareness could benefit workers with mental health LTCs.

Building and maintaining general health is important for people with LTCs. Many employers make efforts to encourage workers to maintain general physical and mental health including sleep, diet and exercise. Regarding physical health, the literature suggests WHPs have moderate effects although findings are diverse and not specific to LTCs. One systematic review of 58 studies of WHP physical activity interventions (including counselling and information support) reported inconclusive evidence for the efficaciousness of programmes, although significant increases in people's physical activity against controls were observed in 32 of the studies (Malik et al., 2014). A study of a different intervention, a workplace

coaching programme targeted at enhancing sleep, reported improved worker wellbeing and self-care (Röttger et al., 2017). Furthermore, while the evidence base is small, the findings of a literature review of coaching studies for Dutch workers with chronic diseases suggests education focused coaching interventions can promote self-management (Lindner et al., 2003).

Nonetheless, WHPs are voluntary and mostly with low participation rates (Goetzel & Ozminkowski, 2008; Linnan et al., 2001). People are not mandated to participate in WHPs so workers with LTCs need to possess a personal belief and motivation that participating in a programme is good for them. Therefore, WHPs need to be clear about how they meet the needs of workers with LTCs (Hassard et al., 2012). This is challenging when workers might already be affected by an LTC and conceivably might not see the value of taking part. Despite some evidence for CBT programmes, the reviewed studies are not persuasive for WHPs as a LTC self-management support. This could be because workers with LTCs were not the specific focus meaning WHPs effects on self-management cannot be ascertained.

2.2.3 Employee Assistance Programmes

Employee assistance programmes (EAPs) started out to change workers alcohol and health behaviours but evolved in complexity (Levy Merrick et al., 2007). Tertiary interventions are concerned with workers experiencing challenges to their wellbeing (Leka & Houdmont, 2010). Employee assistance programmes intend to help workers identify and resolve issues both in and out of work. Typical services include confidential telephone helplines, counselling, financial advice and online information. A review of the evidence for EAPs is discussed in this section (see Appendix 3 for a summary of the 9 studies reviewed).

Employee assistance programmes are one of the most common workplace wellbeing interventions in the UK. Estimates suggest over 13 million workers have access to one, representing 47% of the UK working population (Employee Assistance Programme Association, 2013). In a recent study of 162 employers, 77% indicated EAPs are used to support workers with LTCs (Healthshield, 2018). Currently, EAPs form part of many employer wellbeing strategies (Bajorek, 2016) and while provision has trebled in a decade (Mellor-Clark et al., 2013), they are not available to all workers.

Employers, managers and OH typically signpost workers to EAPs through workplace communications, or in response to a perceived need (e.g., during a return to work process). Most workers can also self-refer. Despite their confidentiality and popularity with employers

(Joseph & Walker, 2017) usage rates are low and evidence suggests 2.5 to 16 percent of workers (regardless of LTC status) use EAPs where available (Bajorek, 2016). Although low usage could be due to stigma or confidentiality concerns (UK Employee Assistance Professionals Association, 2016), this raises questions about EAPs usefulness, communication and value to workers with LTCs.

The evidence for EAPs effectiveness and cost value is mixed (Arthur, 2000). A systematic review of 17 studies found that programme usage enhanced presenteeism and productivity (Joseph et al., 2014). Other evidence suggests users experience greater reductions in absence (Nunes et al., 2018) with counselling services having a generally positive effect on people's psychological wellbeing and absence (McLeod, 2010). However, a review by Rick et al (2012) found no evidence EAPs were more effective than no intervention, and Arthur (2002) suggested that whilst EAPs could provide some mental health support, they cannot be relied on to counter stressful working conditions. Overall, the evidence for EAPs is weak.

Research suggests robust campaigns advertising EAPs are likely to promote workers' programme utilisation (Azzone et al., 2009). Workers with LTCs who are familiar with an EAP are perhaps more likely to use one. However, whilst it is not suggested EAPs have harmful effects, they are not clearly positioned as support for workers with LTCs. If programmes were better defined, targeted and communicated they could be an important support and help guide workers with LTCs to take pro-active action. Programmes might also unveil missed problems. In one study, 86.6 percent of workers who self-referred for EAP stress counselling were likely to be suffering serious mental health problems (Arthur, 2000). Given that people with LTCs are at greater risk of mental health problems EAPs could therefore prove invaluable.

To a large extent, modifications, WHPs and EAPs are interventions employers offer. These might encourage employers proactivity about workplace health but in contrast, workers (including those with LTCs) might adopt inactive, consumptive and disempowered positions. Although employers should remain engaged in promoting general health, the evidence is modest for WHPs and weak for EAPs with little (if any) evidence for their effects on workers LTC self-management. Whereas work modifications stand out as a workplace support measure that could enable workers agency to self-manage.

There seems to be an opportunity for improved forms of workplace support for workers with LTCs. Overall, the evidence reviewed suggests that the effects of workplace interventions are mixed, with some systematic reviews showing a positive impact (Clayton et al., 2012;

Joseph et al., 2014; Kuoppala et al., 2008; Malik et al., 2014; McLeod, 2010) and others not (Davies, 2015; Hill, 2007; Rick, 2012) for the same type of intervention. The evidence suggests that interventions targeted at individual's motivations, self-beliefs and confidence work best. These concepts also determine people's LTC self-management (Bandura, 1997).

2.3 THEORETICAL AND CONCEPTUAL BACKGROUND

In the literature an agreed definition of self-management is lacking. A recent concept analysis of self-management for LTCs reported '*considerable ambiguity regarding the c o n c e p t*' suggesting confusion and a need for clarity (Van de Velde et al., 2019, p 10). For this reason and in order to aid our understanding, this project's theoretical and conceptual background and overarching framework of reference is now clarified and presented. Firstly, self-management definitions and concepts are provided. Secondly, self-efficacy and patient activation are introduced and discussed. Finally, the project's psychosocial conceptual framework is outlined.

2.3.1 Self-Management Definitions and Concepts

Generally, self-management refers to the things people do to take care of an LTC themselves to minimise adverse effects and enable coping (Lorig et al., 1993). In reality, people self-manage LTCs away from healthcare most of the time and during everyday life. Despite studies deliberating definitions (Ellis et al., 2017; Jones et al., 2011), self-management can be broadly considered as a form of *empowerment* (Raven, 2015) and a health behaviour strategy that is influenced by a person's belief in their ability to manage an LTC (Schopp et al., 2017).

Self-Management and Empowerment.

Specifically, self-management is the actions people take themselves for an LTC. These include medical, role and emotional actions and behaviours such as taking medication, managing stress and emotions (Corbin & Strauss, 1988; Lorig et al., 2001; Lorig & Holman, 2003). According to Lorig and Holman (2003), self-managing involves a series of processes including problem solving, taking action and enhancing self-efficacy. Overall, self-management is concerned with how people care for and adapt to an LTC (Corben & Rosen, 2003; Lorig & Holman, 2003). One way of minimising the work effects of an LTC might be by worker's self-managing. In this project, self-management is conceptualised in the following way:

Self-management is a term used to describe the actions taken by a person with an LTC to recognise, treat and manage their own health (e.g., taking medication or managing stress).

Self-management is important because research suggests it can be effective. Whilst this is perhaps more obvious for some conditions (e.g., insulin-controlled diabetes), LTCs are affected by the behaviours and actions people take. Evidence suggests that people who are more activated and confident to self-manage (physical and mental health LTCs) report less healthcare utilisation. In an intervention study of arthritis patients, those more actively self-managing after the intervention reported greater LTC control, better health behaviours and health status (Barker et al., 2018; Barlow, 2002). Although most self-management research focuses on healthcare rather than work contexts, it can be reasonably expected that people with LTCs will need to self-manage at work at some point (Gallant, 2003; Shaw et al., 2014). However, healthcare providers (including GPs) might not be familiar with self-management strategies to prevent work disability (Johnston et al., 2013), meaning conversations about work support are not started because providers concern themselves with supporting health rather than work (Bartys et al., 2019; Cohen et al., 2009). Therefore, the workplace could provide support that healthcare does not. Empowering workers' self-management via workplace support could beneficially affect people's health and potentially work. The question remains whether it does.

Paternalistic healthcare models treated patients as passive recipients of care (Barlow et al., 2002). Models have now shifted (at least in principle) to ones of empowerment. These engage people in their own healthcare and focus on people's abilities to manage LTCs themselves. In this context, empowerment is key and an enabling process in which people's control, confidence (self-efficacy) and coping is enhanced (Small et al., 2013). Empowered patients are central to the UK's *Chronic Care Model* (Jones, 2015) which proposes that supporting self-responsibility is preferable to health providers retaining people's health responsibilities (Funnell & Anderson, 2004). Moreover, putting people at the centre of their care and empowering them to self-manage could enhance people's confidence, wellbeing and QoL (Coulter et al., 2013; Tol et al., 2015). Yet, how this takes place at work is unclear.

Self-management infers people are in control of an LTC. This is not always possible and could mean people are unprepared to cope (Panagioti et al., 2014). Rodham (2018) argued that people struggle to self-manage outside of structured healthcare support programmes, with the focus on the individual underplaying key contextual influences such as family (interestingly the workplace was not mentioned). Self-management takes time and effort. Its benefits are not always evident. In turn, a person's motivation to self-manage could be

affected. Furthermore and at work, people might not be able to find the time to make the effort to self-manage due to work demands or permission.

Nevertheless, self-management is accepted as essential to LTC care and forms an integral part of the NHS's Long-term Plan (NHS England, 2019). In fact, many LTCs are inherently and only self-manageable. It is also accepted that LTC self-management is underpinned by skills and beliefs including problem-solving, decision-making, resource utilisation, healthcare/patient partnerships and confidence (Lorig et al., 1993). Many of these attributes could be acquired, maintained, reinforced and enhanced with workplace support.

Self-Management Support.

As highlighted, LTCs are managed in the context of people's everyday lives and either with or without access to healthcare, family, social support and work (De Iongh et al., 2015). In a study of LTC self-management and social networks, Vassilev et al (2013) highlighted features of illness management that lay outside of individuals control, and where others contribute to a conditions' management (e.g., people helping with everyday jobs). Plentiful evidence suggests that social support including having people to turn to, positively affects people's health (Gallant, 2003; Lorig et al., 1993), wellbeing, QoL and protects against stress by modifying people's appraisals and responses. In a large prospective study of 4,724 Dutch men and women, negative social support experiences including a lack of understanding, related to poor general physical activity, smoking and self-perceived health (Croezen et al., 2012). Moreover, workplace support from colleagues, OH and managers to assess and deal with work problems, is suggested to affect the workability of people with LTCs including diabetes, arthritis, hearing loss and cancer (Détaille et al., 2003; Taskila et al., 2006).

Self-management support is a related but somewhat different concept to social support and is conceptualised as the help provided to someone managing an LTC. Thus it is a collaborative activity between a person and those providing support (Jones et al., 2011). Although this collaboration has social elements, traditionally self-management support involves practical, psychosocial and structured programme support. This includes disease management skills workshops, problem solving and goal planning from healthcare providers and other lay leaders.

The Chronic Disease Self-management Programme (CDSMP) (and adapted UK version entitled the Expert Patients programme (EPP)) are examples of skills workshops delivered by lay leaders (Allegrante et al., 2018; Department of Health, 2001). The CDSMP, developed from two decades of Stanford University research, is an education programme for people

with long-term health problems and is well disseminated (mostly in the US). The programme is concerned with increasing people's confidence, physical and mental wellbeing, knowledge of LTC management and motivation to deal with challenges. It is delivered to groups of 10-16 and weekly over a six week period by trainers with LTCs themselves. It is made up of interactive sessions focused on problem solving, decision making and action planning (Centers for Disease Prevention and Control, 2019) and is shown to improve the health behaviours, self-management and self-efficacy of people with various LTCs including arthritis and cancer (Brady et al., 2011; Salvatore et al., 2015). However, the programme is not yet embedded in work settings. Although self-management support overlaps with broader social support concepts including emotional, tangible, informational and appraisal support (Schwarzer & Leppin, 1988), this highlights a gap for employers' support.

Successful LTC self-management is underpinned by support. Self-managing without adequate support can lead to psychosocial and practical problems (Heinrichs et al., 2018; Varekamp & van Dijk, 2010). In particular, workplace support is crucial for effective LTC self-management in order for workers to meet their physical, social and psychological needs (Gallant, 2003; Shaw et al., 2014). Studies have found work support to improve attitudes toward self-managing an LTC (Detaille et al., 2013), and improve perceptions about being able to work and job retention (Beatty & McGonagle, 2016; Haafkens et al., 2011). In work support might involve supportive supervision, emotional support including understanding, and practical or intrumental support (e.g., modifications to working hours; Munir et al., 2009a; Reidy et al., 2016).

Self-management support has traditionally been viewed from a clinical perspective as '*the assistance caregivers give patients with a chronic disease in order to encourage daily decisions that improve health-related behaviours and clinical outcomesô*(Bodenheimer et al., 2005, p. 4), and broadly defined as '*increasing the capacity, confidence and efficacy of the individual for self-management*,' (Kennedy et al., 2013, p. 2). This focus on care givers and healthcare fails to account for workplace support. Therefore, taking account of the literature, this project's work context and to account for interactions outside of healthcare settings, self-management support is conceptualised in the following way (Bodenheimer et al., 2005; Corbin & Strauss, 1988; Gallant, 2003):

Any form of care and encouragement provided to help (or intended to help) workers with LTCs self-manage and engage with healthy behaviours (e.g., by providing information).

Receiving support can enable better self-management (Gallant, 2003), better confidence (self-efficacy) (Barlow et al., 2002; Kennedy et al., 2007; Vassilev et al., 2014) and better health and work outcomes (Redman, 2005; Schopp et al., 2017). A PRISMS (Practical Systematic Review of Self-management Support) for LTCs including depression, lower back pain, diabetes and neurological conditions found that support helps minimise symptoms, prevent or delay worsening, aid recovery from relapses and acute episodes (Taylor et al., 2014). Moreover, support can lead to improved self-confidence in self-management skills, resilience in dealing with set-backs and better regulation of emotions which in turn, can improve overall QoL (Barlow et al., 2002). However, not everyone is effectively supported to self-manage, including by healthcare providers (Bodenheimer et al., 2002; Corben & Rosen, 2003; Hibbard & Gilburt, 2014; McBain et al., 2018; McCabe et al., 2018). Furthermore, in a qualitative study of people with diabetes, arthritis and heart disease, family support could undermine people's dietary self-management and coping (Gallant et al., 2007). So, the right type of support is important including at work.

Whilst support can alleviate problems, little is known about the support workers with LTCs value from worker, employer and workplace perspectives (Foster et al., 2015b; Shaw et al., 2012; Varekamp & van Dijk, 2010; Vornholt et al., 2018). Furthermore, little is known about how work affects workers' self-management (Gallant, 2003). One problem is that workers with LTCs are embedded as patients in broader health and self-management support models. These models map support by healthcare services, organisational, clinical and commissioning processes (Coulter et al., 2013; Kennedy et al., 2014). A limitation of this approach is the exclusion of work and employers. This is pertinent given that healthcare providers are not always engaged with supporting self-management (McBain et al., 2018), and patients might spend more time in their employers care than in theirs. Nonetheless, employers' views concerning LTC self-management support are unknown.

2.3.2 Self-Efficacy and Patient Activation

To understand workers' LTC self-management support needs it is important to appreciate people's self-management confidence. To understand workers' confidence, this project draws on the Social Cognitive Theory (SCT), self-efficacy theory (Bandura, 1997; Bandura, 2002) and on the Patient Activation concept (Hibbard & Gilburt, 2014; Hibbard et al., 2004).

Self-efficacy is a good indicator of a person's motivation (i.e., activation and confidence) and maintenance of behaviour, to self-manage (Walker, 2001). Self-efficacy has been associated with people's persistency in dealing with obstacles due to cancer (Foster & Fenlon, 2011), and considerable evidence shows that self-efficacy underpins LTC self-management

behaviour for other LTCs including diabetes, asthma and heart disease (Foster et al., 2015b; Munir et al., 2009a; Schopp et al., 2014; Smith et al., 2015; Taylor et al., 2014; Weijman et al., 2005b). Moreover, self-efficacy to self-manage an LTC relates to better workability (Hjärtström et al., 2018), job satisfaction (Siu et al., 2013), is amendable to employer support (Gallant, 2003; Munir et al, 2009a) and can positively influence the decisions people make about self-managing such as deciding to disclose an LTC at work (Brouwers et al., 2019). Other studies relate low self-efficacy to poorer self-management, poorer health behaviours (Tharek et al., 2018), QoL (Motl & Snook, 2008) and wellbeing outcomes (Peters et al., 2019; Foster et al., 2015a).

In SCT, personal, behavioural and environmental features interact to determine a person's motivation to self-manage an LTC. One pivotal feature of the theory and relevantly to this project is people's perceived '*self-efficacy*'. Self-efficacy is concerned with motivation and reflects a person's judgment and confidence in their ability to control their behaviour (Bandura, 1997). Self-efficacy is defined as:

> *ó Beliefs in oneôs capabilities to organise and execute courses of action required to produce given attainments ô* (Bandura, 1997, p.3).

According to Bandura (2002), along with outcome expectations (the perceived consequences of a behaviour) self-efficacy beliefs influence people's behaviour in cognitive, affective, motivational and decisional ways. People with perceived self-efficacy are knowledgeable and skilled and believe in their capabilities for control. They have coping strategies to potentially lessen an LTCs effects, disability and enhance wellbeing whereas people who believe they are unable to affect LTC outcomes are not motivated to try to (Bandura, 1997). Self-efficacy beliefs are regarded as predictors of empowerment (Belil et al., 2018). Workers who perceive they are self-efficacious are likely to feel capable of undertaking self-management behaviours at work, remain optimistic when challenged and find ways to self-manage to minimise work limitations (Siu et al., 2013). However, we know very little about workers self-efficacy to self-manage an LTC at work.

For Bandura (1997), self-efficacy is formed by an interaction of four information sources in a complex process of cognitive self-persuasion including:

1. *Mastery experience* such as learning from prior experience and successful outcomes that encourage further action and capability, or failing and losing confidence;

2. *Verbal persuasion* such as strengthening self-beliefs by receiving positive feedback from others and being told of capability;
3. *Vicarious experience* such as comparing personal capabilities to other people's successes and being motivated to believe in ourselves;
4. *Emotional arousal* such as reading and responding to emotional and physical cues affecting our behaviour, including being stressed and fearful of a Dr's visit.

Theory suggests that enhancing workers perceived self-efficacy will improve their LTC self-management (Schopp et al., 2014). This is why self-management support interventions are mainly concerned with self-efficacy improvements (Lorig et al., 1993). If increased self-efficacy is underpinned by behaviour change workplace support targeting these four sources could be beneficial.

Patient Activation

Similarly, patient activation is concerned with people's self-management confidence (self-efficacy) and capability (knowledge and skills) but goes beyond specific behaviours to measure people's wider engagement to self-manage. Therefore, the 13-item Patient Activation Measure (PAM®) measures self-efficacy but also readiness-to-change components including the extent to which a person is both interested and motivated to change to self-manage (Hibbard & Gilburt, 2014). Participants are given a score between 0-100 indicating their concept of themselves as an active self-manager together with a *level* between 1 (not engaged) and 4 (actively engaged), which can be used to target support. Level 1 suggests a person needs support in acquiring skills and getting started with self-managing an LTC. Whereas level 4 indicates support to maintain self-management behaviours, especially when under stress, could be beneficial (see Study 1 in Chapter 4, Section 4.3, p. 68 for a detailed description of the measure) (Hibbard & Gilburt, 2014).

Similar to self-efficacy, higher activation relates to better self-management, better health behaviours and is amendable to change (Hibbard & Gilburt, 2014; Hibbard et al., 2004). This relationship is demonstrated in various LTCs. A UK study assessing patients' activation in primary care settings and in relation to depressive symptoms, associated low activation scores with increased symptoms and poorer QoL (Magnezi et al., 2014). A descriptive study of US patients with the cardiovascular condition atrial fibrillation related higher activation to better health status (McCabe et al., 2018). A mixed methods study of people with the mental health condition schizophrenia found that those more activated were more accepting of their LTC including its need to be managed (Salyers et al., 2013). Moreover in a rare workplace study of a working population, higher activation related to better job performance (Harvey et

al., 2009). However, this was the only workplace study identified to use the activation measure and there are no studies using it to explore the LTC self-management support needs of UK workers, meaning an insight into their activation profile is unavailable.

To provide an overall picture of the mechanisms of workers' self-management confidence that is of interest to this project, a framework was designed incorporating Bandura's sources of self-efficacy and activation components. This is shown in Figure 2.1.

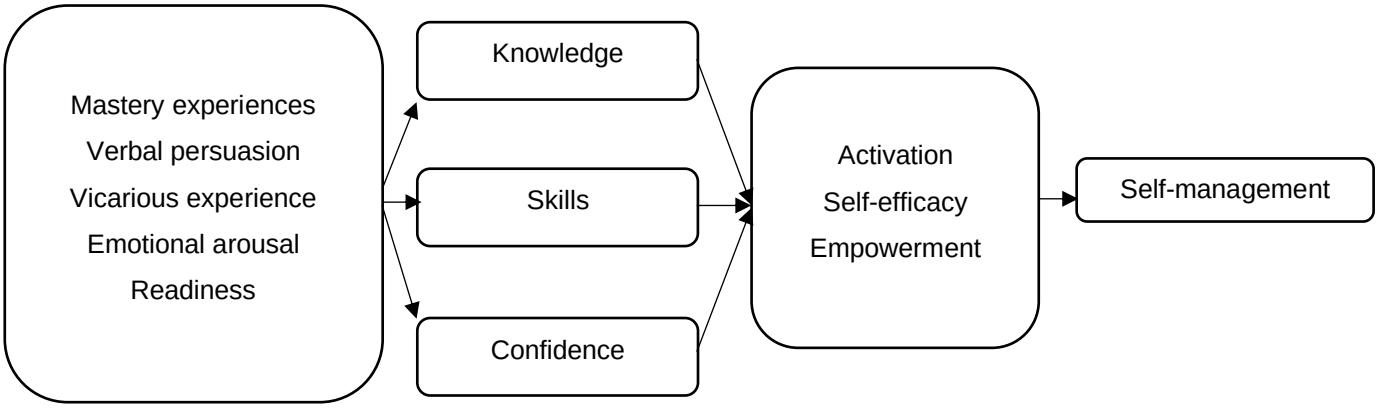


FIGURE 2.1. ***Self-Management Confidence Framework.***

In summary, examining people's confidence via self-efficacy and patient activation could help enhance our knowledge and understanding of workers' LTC self-management, and gaps in support. Using the concepts to explore characteristics of workers' LTC self-management at work is potentially valuable to employer discussions about workers' support needs. This could inform future workplace support interventions. Furthermore, a psychosocial framework could help us understand the research gaps and make sense of the linkages between these concepts. The next section outlines the project's psychosocial framework which forms its conceptual background.

2.3.3 Psychosocial Conceptual Framework

Psychosocial approaches bring together wellbeing aspects to explain health behaviour. Health is conceptualised as an interaction between three domains: 1) biological; 2) psychological; and 3) social (Lunt et al., 2007). After a review of the literature, a psychosocial approach was taken to understand and assimilate the potential complexities of workers' LTC self-management (Kendall et al., 2009; Lunt et al., 2007). Taking a psychosocial approach is useful and enables the exploration of self-management confidence concepts in a work context (de Vries et al., 2012) including social features (e.g., job aspects

and attibuted responsibilities). Moreover, as LTCs can be viewed as ongoing stressors (Heijmans et al., 2004) the framework is influenced by stress theories. These broadly suggest that coping is an outcome to a balance of demands and resources (including control and support), affected by people's appraisal of situations and abilities (Bakker & Demerouti, 2007; Johnson & Hall, 1988; Karasek, 1979; Lazarus & Folkman, 1984) and are discussed first.

Stress Theory.

The demands-control-support model (ISO-strain) (Johnson & Hall, 1988) proposes that job demands induce strain, depending on worker's autonomy (control) and support (which can have a moderating effect). This can be applied to LTC self-management. Research suggests that poor support and control over job tasks at work (Karasek, 1979) relate to workers poorly self-managing asthma symptoms (Heinrichs et al., 2018). Perceiving low control because of a belief you cannot positively affect an LTC (Hibbard & Gilburt, 2014) due to lacking self-control (Bosma et al., 2019), such as not being supported to manage symptoms at work, could undermine workers' self-management confidence. Whereas according to SCT and stress theories, support can enhance self-management confidence (Bandura, 1997) such as receiving manager support for LTC tasks (Bandura, 1997; Gallant, 2003; Munir et al., 2009a) and moderate strain. In a study of workers with LTCs, increased job control buffered the effects of lost productivity for workers with reduced workability (Van Den Berg et al., 2011).

Unbalanced demands and resources might also affect workers' work engagement. Xanthopoulou et al (2009) suggested that job resources (i.e., physical, social and organisational aspects that help workers achieve goals) initiate people's work engagement and performance. As perceiving inadequate resources can lead to stress, low energy and undermine coping, disengaged workers lacking the vigour and energy of being work engaged (Schaufeli & Bakker, 2004), could then be less motivated to self-manage an LTC at work. However, there is a gap in research examining work engagement and LTC self-management.

Conceptualising LTC self-management as an outcome of combined (bio)psychosocial features including demands, control and support (DCS) (Johnson & Hall, 1988) helps envisage the interactions and workers' support needs. Figure 2.2 captures these features.

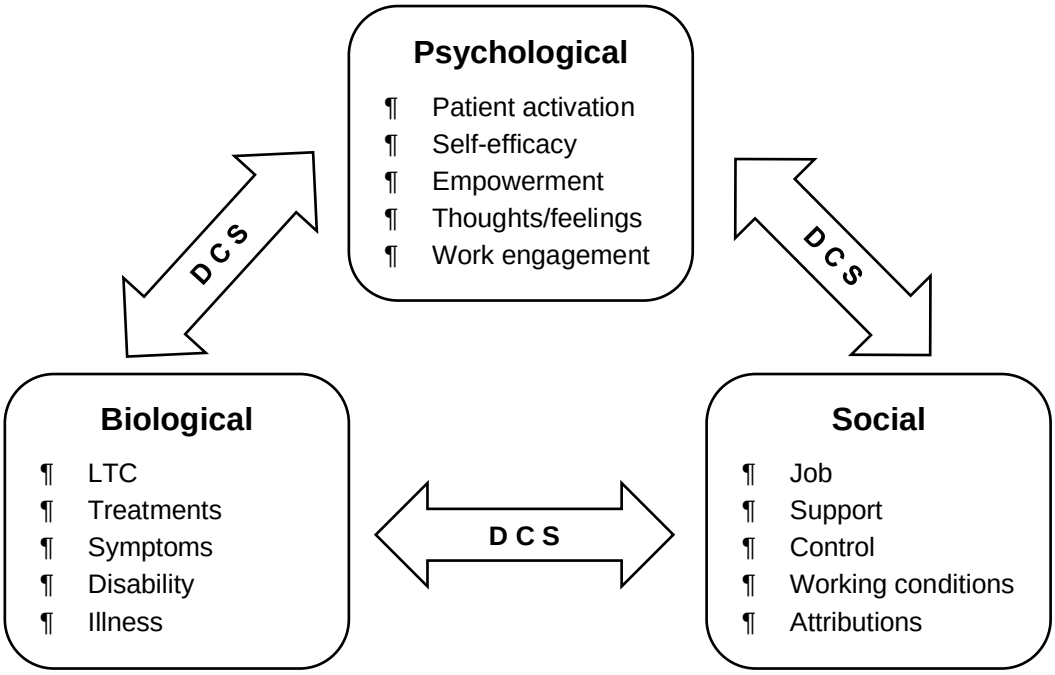


FIGURE 2.2. Representation of the Project's (Bio)psychosocial Features.

The Psychosocial Flags Framework.

To apply this approach and focus on modifiable risk factors (rather than clinical LTC 'bio' features) the Psychosocial Flags Framework (Kendall et al., 2009; Lunt et al., 2007) is a useful framework of reference. Coloured flags highlight features that workers with LTCs are struggling with and could help facilitate support to overcome them. The three Flags are yellow, blue and black. Their features and related factors are presented in Table 2.4. Yellow flags relate to individual thoughts, feelings and behaviours (e.g., confidence). Blue flags relate to the worker and work context (e.g., manager support) and overlap with black flags, which relate to things outside of workers direct control such as workplace policies.

In a study of a psychosocial intervention to reduce workers absence for upper and lower limb disorders, McCluskey et al (2006) highlighted the Flags usefulness. In another study, Flags helped identify prevalent psychosocial obstacles for workers with shoulder and elbow injuries (Razmjou et al., 2018). Whilst much research using the Flags focuses on MSK problems there is no reason to think the approach is not useful for other LTCs (Waddell & Burton, 2004). Certainly, a qualitative study used the Flags to identify and conceptualise workplace difficulties for workers with a range of health problems including MSK and mental health problems (Buck et al., 2011). No study to date has examined workers LTC self-management support needs using the model. As the model accounts for multiple interactions (Buck et al., 2011) it is a useful frame of reference to this project and allows for a combination of features.

Table 2.4. Psychosocial Flags, Context and Description.

Flag	Context	Description
Yellow	Individual.	Psychological, emotional and LTC factors including thoughts, feelings and behaviours.
Blue	Worker and workplace.	Work factors, perceptions and beliefs about work.
Black	Environmental, occupational and social.	Workplace, industry features and societal influences.

2.4 WORKPLACE SELF-MANAGEMENT STUDIES

Overall, a review of the evidence suggests that workplace LTC self-management support is not embedded in work settings. The research is scant and emerging slowly. Studies seem to fall into one of two camps. One is concerned with randomised controlled trials of work adapted LTC self-management support interventions, mainly based on the CDSMP. The other with features of workplace disability approaches including return to work programmes and fewer with LTC and disease management. Consequently, not all studies specifically feature LTCs or self-management despite the greater focus on patient responsibility, potential employer benefits and reduced healthcare costs (Caloyeras et al., 2014; Grady & Gough, 2014). No systematic reviews of workplace LTC self-management support studies emerged. Taking this complexity into account this section concerns itself with the evidence from 21 studies that broadly feature work, LTC self-management and support aspects (summarised in Table 2.5).

As previously mentioned, support can promote people's self-efficacy and activation to self-manage an LTC. Overall, the evidence suggests that self-management support is a complex intervention that is broadly beneficial. Taylor et al's (2014) PRISMS review highlighted beneficial components of support including education, strategies for adjusting to an LTC, practical support for daily activities and social support. An earlier review (of over 550 studies of self-management approaches and interventions for various LTCs) revealed that self-efficacy, active goal setting, decision making, opportunities to learn and feedback, help monitoring and managing symptoms, problem solving and behaviour change approaches were important (de Silva, 2011). Neither review focused on workplace support. So what should make up workplace self-management support?

A limitation of the evidence is that the influence of support on LTC self-management is mostly examined from patient and personal perspectives (Dube et al., 2017; Taylor

et al., 2014). Most studies examine LTC self-management support outside of work and in primary care settings, or focus on return to work rather than support for people at work (Dineen-Griffin et al., 2019; Dwarswaard et al., 2016a; Gallant, 2003; Wynne-Jones et al., 2014). Perhaps this is because work is not viewed as significant for people with LTCs or due to organisational needs to reduce the disruption caused by absence. Or perhaps health is considered a personal or healthcare issue more than a work concern.

A recent Public Health England evidence review suggests work conversations are not a routine part of healthcare practices (Bartys et al., 2019). Either way, few studies focus on workers' solutions to working with an LTC (Vooijs et al., 2017). As little research focuses on work settings and worker perspectives (Munir et al., 2005b), the leading components of workplace self-management support remain unclear. It has long been recommended that LTC self-management is integrated into workplaces (Glasgow et al., 2008), but Smith et al (2018) recently re-highlighted how little is known about the best way to do so. A close look at the literature reveals a gap for workplace LTC self-management studies to uncover workers' support needs. It would be more useful for studies to focus on work and to account for worker and employer perspectives.

There are very few workplace LTC self-management support intervention studies done. The literature provides some information about what workplace LTC self-management works. Those that exist and informed by the CDSMP report several promising results suggesting this type of workplace support is beneficial. Four studies were influenced by the CDSMP (Detaille et al., 2013; Hutting et al., 2015; Schopp et al., 2017; Smith et al., 2018). A study of an adapted version of the CDSMP for a US workplace (Schopp et al., 2017) assessed if participation increased workers' self-efficacy, general health behaviours and health status. Whilst not all participants had LTCs, improved health behaviours and self-efficacy after the intervention were reported. This aligns with other research suggesting worksite versions of the CDSMP improve the health behaviours of workers with LTCs. In a different study of an adapted programme for workers with somatic disease including diabetes and arthritis, workers' attitudes towards self-managing improved (Detaille et al., 2013). Moreover, a recent review of the effectiveness of a worksite CDSMP for workers with various LTCs reported improved dietary habits and healthcare communications with reduced mental work limitations (Smith et al., 2018).

Other evidence suggests that different support could be beneficial. One study (based on the CDSMP) examined the effectiveness of a six session programme and e-health module to reduce the work limitations of workers with non-specific MSK complaints of the arm, neck and shoulder (Hutting et al., 2015). No significant between group improvements in attitudes towards self-managing or work capacity were shown. Yet, improvements in attendees perceived disability during work (which contributed to better workplace self-management) were revealed and in a later qualitative analysis of workers' experiences of the programme, improved LTC awareness with evidence of positive health behaviour change were reported (Hutting et al., 2017). Although it is recognised that not all principles of self-management programmes can be usefully implemented in workplace programmes (Shaw et al., 2012), Hutting et al (2019) pointed out that studies consistently highlight active approaches including practical support, education, social support, feedback, psychological training and self-monitoring as important.

However, the number of interventions promoting workers LTC self-management is still low (Smith et al., 2015). None of the studies featured the UK's EPP or UK workers and the programmes content differed, making comparisons problematic. This limits our understanding of worker's self-management support needs and the question of the effectiveness of CDSMP or EPP interventions in UK workplaces remains to be addressed.

Observational studies will now be discussed. Although studies are few, the evidence suggests that workers' success at self-managing an LTC is subject to an interplay of personal and work factors. The qualitative findings suggest that disclosure, practical information and social support promote workers' self-control, which could affect people's LTC self-management (Bosma et al., 2020a) together with control over job tasks, receiving support (Heinrichs et al., 2019), flexibility and leeway (Tveito et al., 2010). Other studies highlight the importance of people's own beliefs and attitudes in managing health problems (Hill, 2007). Whereas the findings of a study concerning the influence of work on asthma self-management, suggest that LTC self-management is affected by the overall balance of workers' perceived control and support (Heinrichs et al., 2018).

In a series of studies, Munir et al (2005b, 2007, 2009a, 2009b) examined different facets of workplace LTC self-management and support. In one study, managers' support was directly related to workers' self-efficacy to self-manage medication and symptoms of MSK pain, arthritis and rheumatism, asthma, depression and anxiety, heart disease and diabetes (Munir et al., 2009a). In an earlier study, workers were suggested to be more likely to disclose an LTC (telling someone about a condition in a conversation) where there was a

greater need for self-management support at work, including due to condition severity (Munir et al., 2005b). Disclosure is important for self-management because it can enable access to practical (e.g., modifications), emotional, psychological and social support (de Vries et al., 2016; Serovich, 2001), and could help people cope with an LTC by alerting employers to a support need. However, neither study explored workers' self-management support needs specifically or working conditions. A later study suggested employers should support workers' general wellbeing to help people overcome LTC related work limitations (Munir et al., 2007) but again, self-management support was not the focus. Another study highlighted a need for tailored self-management support accounting for age and work contexts (due to differences between older and younger workers management of diet and exercise; Munir et al., 2009b) suggesting further complexities.

One outstanding feature is that of manager support. Support has long been known to directly and indirectly affect health (Cohen & Wills, 1985). Munir et al's (2009a) study of employer support for LTC self-management found that line manager support directly related to workers' management of symptoms and medication, suggesting that manager support promotes workers' self-efficacy to self-manage. Certainly, qualitative findings suggest that poor manager support has adverse health effects. In two separate studies, poor manager support hindered workers avoidance of triggers for their asthma (Heinrichs et al., 2019) and prevented workers with diabetes self-managing properly (Ruston et al., 2013). Although one study found that support is not always important this could be evidence of a healthy worker effect, where older and sicker people are out of work, thus were excluded from the analysis (Buckley et al., 2015; Saunders et al., 2018; Thygesen et al., 2011). Studies concerned with work retention and workplace disability (rather than self-management) also highlight the importance of manager support for the functioning of workers with LTCs (Abma et al., 2013; Varekamp et al., 2013). As workplace LTC self-management support is poorly understood, manager support warrants further investigation.

The evidence suggests that workplace LTC self-management support could help workers overcome the limitations an LTC imposes and interventions based on the CDSMP could be effective. Yet the evidence base for workplace LTC self-management support is not substantial. This review suggests that personal and work factors including self-efficacy, disclosure, control and support, flexibility, leeway and modifications influence workplace LTC self-management. Nonetheless, a clear picture of workers' LTC self-management and the sufficiency of existing workplace support is not available. Moreover, studies' predominant focus on diabetes, MSK and respiratory LTCs (particularly arthritis and asthma) overlooks other work relevant LTCs (e.g., mental health). This makes it difficult for employers to know

what support to provide as our understanding of the outcomes people with different LTCs value is limited (Foster et al., 2015b). This prompts a need to better understand what support works by understanding workers' needs. In sum, further work needs to be done to understand workers' LTC self-management to establish the support they value.

Table 2.5. ***Summary of Workplace Studies Featuring Aspects of LTC Self-Management.***

Author (year)	Aim	Design	Sample (n)	LTC (n)	Findings
Bosma et al (2019).	Profile elements of self-control (for work participation) to gain insight to its exertion, from the perspective of workers with a chronic condition.	Synthesis and thematic analysis of qualitative studies.	17 studies.	Various including diabetes, multiple sclerosis and rheumatoid arthritis.	Four aspects of self-control were important: disclosure, having a healthy balance, work modifications and management of symptoms and limitations.
Bosma et al (2020a).	Explore the lived experiences of workers with chronic conditions and identify barriers, facilitators and support needs for staying at work.	Focus group study.	n = 30 employed/self-employed workers with LTCs.	Metabolic, lung, MSK, neurological, digestive or combination.	Disclosure, practical information, social and employer support were important. Manager and colleague knowledge, lack of focus on work during treatment, dissatisfaction with OH and absence of support for self-employed workers were barriers. Support should be available to all and tailored.
Detaille et al (2013).	Investigate the effect of a self-management programme (adapted CDSMP) for workers with chronic disease.	Randomised controlled trial (RCT).	n = 47 usual care and n = 57 intervention group.	Somatic disease e.g., arthritis, diabetes.	Older, female and low educated people benefited most. Attitudes (enjoyment) towards self-management at work improved after eight months in the intervention group.
Heinrichs et al (2018).	Explore the perceived influences of working conditions on asthma self-management.	Qualitative semi-structured interview study.	27 interviews with n = 15 workers.	Asthma.	Colleague, manager and employer support e.g., practical, emotional and structural affected symptom prevention, condition management and communication (i.e., disclosure). Perceived control and support aid successful self-management.
Heinrichs et al (2019).	Investigate the association of job decision latitude (control) and social support with workplace self-management behaviours at work and morbidity.	Cross-sectional survey.	n = 221 workers.	Asthma.	Low control and social support related to poor acute symptom management, poor asthma control and QoL. Adverse working conditions relate to poor self-management with increased morbidity.

Author (year)	Aim	Design	Sample (n)	LTC (n)	Findings
Hill et al (2007).	Review of the evidence for the effectiveness of workplace interventions for common health problems.	Review of systematic reviews and high-quality evidence.	n = 33 studies.	Back pain and MSK, anxiety, stress, depression and cardiorespiratory.	There was mixed evidence for health promotion. Interventions with employer-worker partnership were more effective and should address personal/organisational aspects. Workers' attitudes, beliefs and LTC should be considered.
Hutting et al (2015).	Evaluate the effectiveness of a self-management intervention and e-health module, compared to usual care (informed by CDSMP).	RCT.	n = 66 intervention and n = 57 usual care.	Chronic non-specific complaints of the arm, neck or shoulder.	Improved perceived disability during work was reported. Mostly non-significant differences between groups emerged.
Hutting et al (2017).	Investigate the experiences of workers participating in a workplace self-management programme.	Semi-structured interviews (cohort of RCT participants).	n = 31 workers.	MSK: arm, neck or shoulder LTCs.	Participants developed more insight into their LTCs contributing to behaviour change and coping. Some made workplace changes although maintaining this was perceived to be problematic for some.
Munir et al (2005b).	Explore the self-management of chronic illness as a predictor for LTC disclosure to managers.	Cross-sectional survey study.	n = 610 workers.	Asthma, arthritis, irritable bowel syndrome, migraine and diabetes.	Workers disclose for a need or reason related to an LTC e.g., regular symptoms or require support. Disclosure is a self-management strategy and can facilitate self-management via line managers.
Munir et al (2007).	Examination of psychosocial factors associated with psychological and health related distress for workers with LTCs.	Cross-sectional survey study.	n = 1,029 workers.	MSK, asthma, depression and anxiety, heart disease, diabetes.	Low psychological wellbeing and high health related distress were associated with work limitations, poor symptom management, presenteeism and poor social support. Workplace support for wellbeing to overcome health limitations is important.
Munir et al (2009a).	Examination of the relationship between employer support,	Cross-sectional survey study.	n = 772 workers.	MSK pain, asthma, depression and	Manager support directly related to worker's symptom and medication self-management. No

Author (year)	Aim	Design	Sample (n)	LTC (n)	Findings
	self-efficacy and workplace LTC self-management.			anxiety, heart disease and diabetes.	direct relationship was shown between OH and self-management. Self-efficacy was an important mechanism in worker's self-management.
Munir et al (2009b).	Examine the self-management behaviours of younger (20-49) and older (50-69) workers with LTCs.	Cross-sectional survey study.	n = 759 workers.	MSK pain, arthritis and rheumatism, heart disease, asthma, depression and anxiety, diabetes.	Younger and older workers have different diet and exercise practices. To improve workplace self-management better communication between healthcare and workers is recommended.
Ruston et al (2013).	Explore the perceptions and work experiences of diabetic workers.	Semi-structured interviews.	n = 43 workers.	Diabetes.	Managers do not appreciate the work environment effects on self-management and support is not expected. Workers were concerned about stigma with job demands prioritised. Workers adapt disease management running blood glucose levels high, putting themselves at risk of complications.
Saunders et al (2018).	Investigate levels and needs for workplace support for Australian workers with chronic illnesses aged 45 and over.	Cross-sectional survey.	n = 314 workers.	Diabetes, heart, kidney, lung, mental health and MSK conditions.	Fifty percent considered support as nil to small in terms of importance. Gaps in workplace support for flexibility, supportive policies and from colleagues were identified.
Schopp et al (2017).	Adaption of the CDSMP as a standardised workplace health promotion programme.	RCT.	n = 91 workers.	n/a.	Workers in the intervention group reported increased self-efficacy and health behaviours compared to comparisons. Adapted CDMSP is promising for workplaces.
Smith et al (2015).	Compare differences in personal and delivery characteristics of workers who attend a workplace CDSMP	Cross-sectional data.	n = 25,664 adults participated in a CDSMP, n = 436	High cholesterol, hypertension, mental health conditions incl.	Workers who attended a workplace programme were younger, had fewer LTCs and attended more sessions. CDSMP adoption at work is low.

Author (year)	Aim	Design	Sample (n)	LTC (n)	Findings
	compared to other settings e.g., community centres, and compared to the greater US workforce.		attended a worksite programme	anxiety and depression, diabetes.	Opportunities for workplace translated programmes exist.
Smith et al (2018).	Examine the effectiveness of a workplace version of the CDSMP relative to usual care to improve the health and work performance of workers with one or more LTCs.	RCT.	Control n = 109, intervention n = 72 workers.	High cholesterol, hypertension, mental health conditions and diabetes.	Worksite CDSMP can potentially improve health among workers with LTCs and was associated with reductions in unhealthy physical and activity days, fatigue and improved dietary behaviour, patient-provider communications and mental work limitations.
Summers et al (2014).	Exploration of the workplace self-management behaviours of people with MSKs.	Semi-structured interviews.	n = 15 workers.	MSK LTCs.	Workplace self-management support needs to improve. Work is an important form of self-management for participants who compromise employment aspects (i.e., career), to optimally self-manage. Manager support is critical to workplace self-managing and modifications.
Tveito et al (2010).	Identify the challenges and self-management strategies of workers with recurrent or persistent pain, to inform the development of a workplace intervention to prevent back disability.	Focus groups.	n = 38 workers incl. one self-employed group.	Lower back pain.	Flexibility, leeway and physical and emotional support affect people's self-management abilities. Informal strategies for flexibility (leeway) is important.
Vooijs et al (2017).	Explore solutions people with LTCs use to overcome work difficulties work and the	Focus groups.	5 focus groups with n = 19 workers.	Various including kidney disease, arthritis, Lyme disease, cancer, RSI, diabetes.	Solutions were person focused including accepting and coping with an LTC and self-beliefs, or focused on the job and workplace e.g., being

Author (year)	Aim	Design	Sample (n)	LTC (n)	Findings
	support needed to address these.				autonomous or making modifications which require employer, OH and colleague support.
Weijman et al (2005b).	Explore the relationship between the frequency and perceived burden of self-management activities and insulin levels, symptoms, fatigue, depression, and QoL.	Cross-sectional survey study.	n = 292 workers.	Insulin treated diabetes.	Personal factors play a greater role in workers' self-management than how work is perceived. Workers with low levels of self-efficacy were more likely to experience self-management as a burden. Dietary management is more burdensome than insulin injections. Workers perceiving dietary self-management and insulin injections as burdensome had more negative health outcomes.

2.5 Summary and Current Project

The literature suggests that workplace LTC self-management support can be beneficial. However, the content of effective workplace support is unclear along with uncertainty over the acceptability of interventions and workers' support needs. The evidence for WHP and EAP interventions is inconsistent. They are unspecific to workers with LTCs and it is not known if they support self-management. Furthermore, the higher absence and lower employment rates of workers with LTCs and conceptualisation of conditions as ongoing stressors, suggests their work experiences could be adverse compared to those without. Our understanding of this is lacking. Still, the overall evidence for workplace LTC self-management support and workplace interventions shows potential promise. Despite this, research neglects workplaces and specifically in the UK. The literature fails to provide a sufficiently detailed insight to workers' LTC self-management support needs or employers' views to inform interventions.

It is accepted that self-efficacy underpins people's LTC self-management and that the right support can promote and enhance people's confidence, control and activation to self-manage. Evidence suggests that self-efficacious and activated people are more likely to experience better wellbeing, QoL and workability. The reality is that many people with LTCs can work if they have support that helps them overcome obstacles. The evidence suggests that personal and work factors of self-efficacy and activation, support, disclosure, stressors and modifications can affect workers' self-management and ability to meet demands. However, fluctuations in workers' LTCs could mean their support needs, confidence and perceived control change from day to day, but it is not yet known how.

More work needs to be done to establish workers' LTC self-management support needs and preferences for support, accounting for these features. Furthermore, if workplace self-management support is to be provided, understanding employers' views and the feasibility of support is critical. Exploring the complex linkages between psychosocial features could broaden our understanding of workers' LTC self-management support needs, employers' ability to provide support and could help take a problem-solving approach to workplace obstacles.

2.6 Research Objectives, Questions and Hypotheses

Traditionally workplace interventions have been concerned with improving workers' safety, reducing the risks of ill-health and LTCs, or organising and modifying work to minimise the limitations an LTC imposes. More recently, LTCs have attracted greater attention due to their increasing prevalence, associated costs and people's work longevity. Long-term health

conditions are envisaged to become an increasingly important workplace health issue. A common feature of LTCs is their need to be self-managed. Nonetheless, little is known about the workplace self-management needs of workers with LTCs and even less about employers' views.

This project aims to understand if workers with LTCs need workplace self-management support. It aims to identify what mechanisms might enable (or act as obstacles to) workers being confident and activated to undertake LTC self-management activities at work. That information is needed to contribute to the design of work interventions intended to enhance workers' self-management, workability, health and wellbeing and to inform future studies.

To explore the self-management and work characteristics of workers with LTCs, this study uses four main research objectives which are underpinned by seven research *hypotheses* (shown in Table 2.6) and 11 research *questions* (shown in Table 2.7) and aligned to the study they relate to. In order to view this project in context and determine if workers with and without LTCs perceive features of work in the same way, an overarching hypothesis is proposed that sits across all four studies: *Working conditions, support and workability will differ between workers with and without LTCs* (*hypothesis 1).* This was tested in the Study 1 cross-sectional survey and discussed in Chapter 4, Section 4.5.1, p. 83.

The project's four main research objectives are to:

1. **Understand in what ways workers with LTCs self-manage at work.**

The literature provides some insight into workers self-management. Factors unique to people with LTCs such as activation and self-efficacy (Hibbard et al., 2004), and work features of demands, control and support are highlighted as important (Weijman et al., 2005b). The detrimental effects of LTCs on people's workability, QoL and wellbeing are also highlighted (de Jong et al., 2015; de Vries et al., 2014; Naylor et al., 2012). Whilst complexities to workplace self-management are shown, our understanding is still lacking. Studies suggest that more research is needed to determine what undermines people's LTC self-management at work (Weijman et al., 2005b). For example, a systematic review of the potential determinants of asthma self-management at work found that the evidence base was sparse (Heinrichs et al., 2018). Moreover, LTCs can affect workers attendance, productivity and workability (thus QoL and wellbeing) in different ways (Leijten et al., 2014). This could be due to differences in LTCs, confidence and support (Galdas et al., 2015; Munir et al., 2009), all of which are subject to potential temporal variation due to fluctuations or

changes in an LTC, or work (e.g., increased job demands). Despite this, a current and comprehensive picture of workers LTC self-management is unavailable making it hard to ascertain people's support needs. Therefore, we need to know more about what promotes workers motivation to self-manage, and a better insight to these complexities is needed. Receiving the right type of support could promote a person's activation and self-management confidence which could alleviate health problems at work. As good work is accepted to be beneficial to people's QoL and wellbeing including their physical and mental health (Waddell & Burton, 2006), studies are needed to highlight workplace support strategies for different LTCs (Pransky et al., 2016). As effective support rests on meeting a need when support is required and beneficial, enhancing our understanding of workers LTC self-management by exploring these features helps establish these needs. Such an insight is key to targeting and providing support.

Two hypotheses were examined in relation to this objective: 1) *Activation, self-efficacy, wellbeing, QoL, working conditions, workability and support will differ between workers with different LTCs (hypothesis 2).* This was tested cross-sectionally in the Study 1 survey and discussed in Chapter 4, Section 4.5.1, p. 83; and 2) *Workers self-management confidence will change over time (hypothesis 5).* This was tested longitudinally in the Study 2 diary and discussed in Chapter 5, Section 5.7.1, p. 117.

2. **Examine how work features impact characteristics of workers' LTC self-management (and vice versa).**

This project aims to provide an insight into characteristics that influence workers confidence to self-manage at work. Although activation and self-efficacy reflect a workers motivation to self-manage an LTC (Hibbard & Gilburt, 2014), little is known about the relations between this and their wellbeing and workability. As higher activation indicates a person is more motivated and confident about self-managing, it is possible that more activated workers will feel more able to do so at work, thus have better wellbeing and feel more capable in working. Exploring the outcomes to workers activation could help motivate employers to provide self-management support and encourage workers to seek it. As no research exists to inform us about these relationships there is a need to ascertain these in this project. The first hypothesis to be examined in relation to this objective is: *Activation will be positively associated with self-efficacy, wellbeing and workability (hypothesis 3).* The was tested cross-sectionally in the Study 1 survey and discussed in Chapter 4, Section 4.5.1, p. 83.

Whilst disclosing an LTC can provide legal protection to UK workers (Equality Act, 2010), accessing support in this way can also enable people to self-manage at work (Bosma, 2020b; Munir, 2009b). Workers who have disclosed a condition could therefore be more able to be open about an LTC and have more support. However, we do not know how disclosure relates to workers activation and self-efficacy to self-manage an LTC, or the support they have available. The second hypothesis to be examined in relation to this objective is: *Workers who have disclosed an LTC will be more activated, self-efficacious and supported* (*hypothesis* 4). Again, the hypothesis was tested cross-sectionally in the Study 1 survey and discussed in Chapter 4, Section 4.5.1, p. 83.

The researcher is unaware of studies exploring what effect perceived level of control for workers with LTCs, satisfaction with workplace support and work engagement has on their self-management confidence. Given studies relate support to better workplace self-management (Munir et al., 2009), and poor control with poor self-management (Heinrichs et al., 2019), these mechanisms could have an important effect on whether a worker self-manages an LTC at work or otherwise. Furthermore, work engagement (characterised by vigour, dedication and absorption) is a positive cognitive state with engaged workers more energetic and occupied in their work compared to those not (Bakker et al., 2008; Schaufeli & Bakker, 2004). Engagement is also important to worker's health and wellbeing including professional efficacy (i.e., people's beliefs in their professional abilities) (Munir at al., 2015; Schaufeli et al., 2008). This raises the question as to whether work engagement affects workers LTC self-management. In a qualitative study of workers with chronic conditions, Shaw et al (2014) found that disengagement from work concerned people more than being unproductive. However, we do not know about its effects on self-management confidence as studies neglect measuring it. Taking this into account, the final three hypotheses to address this objective are: *Changes in LTC control (hypothesis 6), support satisfaction (hypothesis 7) and work engagement (hypothesis 8) will explain changes in workers self-management confidence.* These hypotheses were tested longitudinally in the Study 2 diary and discussed in Chapter 5, Section 5.7.1, p. 117.

3. **Identify workers perceived LTC self-management support needs and received support.**

This project adopted a mixed methods approach (presented in Chapter 3, Section 3.1, p. 56). To supplement the discussed objectives, research questions were devised to undertake a qualitative analysis.

Few studies examine workers views about self-managing an LTC at work and none comprehensively. Existing studies highlight the importance of disclosure and social (including manager and colleague) support to workers with LTCs staying at work (Bosma et al., 2020a). Yet, a broad and detailed insight to workers' views and experiences of self-managing different LTCs at work is lacking. Workplace support needs to be targeted to people's needs to be effective. This means that we need to know what workers perceive their support needs to be and the gaps in workplace support. One way of achieving this (and to build on existing evidence) is by asking them. Existing qualitative self-management studies provide some insight to workers self-management for conditions such as diabetes and MSK conditions (Ruston et al., 2013; Summers et al., 2014). However, we do not know enough and need to enhance our understanding of workers potentially diverse support needs to inform workplace interventions. A qualitative approach enables the capturing of data about people's experiences including their thoughts, feelings and attitudes about workplace support to enhance our understanding. The researcher devised seven research questions (numbered 1 - 3 and 8 - 11) for this objective (summarised in Table 2.7). These were addressed in the Study 1 survey (in the form of free-text questions) and Study 4 worker narratives (in interview questions). The findings are presented in Chapter 4, Section 4.5.2, p. 91 and Chapter 7, Section 7.7, p. 173 respectively.

4. **Examine employers' understanding and perspectives of workers' LTC self-management and support needs.**

Psychosocial including individual, organisational and societal features interact to affect workers LTC self-management (Dellve & Eriksson, 2017; Heinrichs et al., 2018b; Lunt, 2007; Shaw et al., 2012). Despite healthcare's focus on the importance of self-management for people with LTCs (Jones, 2015) and increasing attention on workplace wellbeing, surprisingly little is known about employers' views on this (Gallant, 2003). Just as employer support in return to work processes is important, the evidence broadly suggests that employer support can promote LTC self-management (Munir et al., 2009a), but is not always forthcoming (Ruston et al., 2013). This is despite the importance of support (from colleagues and managers) to workers (Saunders et al., 2018; Vooijs et al., 2017). There is a call for research to identify workplace support possibilities for workers with LTCs (Pransky et al., 2016). To better support workers LTC self-management (and the feasibility of doing so) we need to understand employers' views. Four research questions were devised to do so (numbered 4 - 7, summarised in Table 2.7). The findings are presented in Chapter 6, Section 6.6, p. 142. Taken together with the worker studies, the findings could inform work interventions intended to enhance workers' LTC self-management.

Table 2.6. ***Table of the Project's Main Objectives and the Studies' Aims and Hypotheses.***

	Main Objectives			
Study Aim & Objective	**1. To understand in what ways workers with LTCs self-manage at work.**	**2. To examine how work features impact characteristics of workers' LTC self-management (and vice versa).**	**3. To identify workers perceived LTC self-management support needs and received support.**	**4. To examine employers understanding and perspectives of workers' LTC self-management and support needs.**
Study 1 - Survey. Explore differences in work features and LTC status between workers, and differences in work features, LTCs and self-management characteristics between workers with LTCs.	*Hypothesis 2:* Activation, self-efficacy, wellbeing, QoL, working conditions, workability and support will differ between workers with different LTCs.	*Hypothesis 3:* Activation will be positively associated with self-efficacy, wellbeing and workability *Hypothesis 4:* Workers who have disclosed an LTC will be more activated, self-efficacious and supported.	-- [a]	--
Study 2 - 10-week Diary. Highlight characteristics of workers' LTC self-management and work over time.	*Hypothesis 5*: *Workers self-management confidence will change over time.*	*Hypotheses 6, 7 and 8:* Changes in LTC control, support satisfaction and work engagement will explain changes in self-management confidence	--	--

[a] Not applicable.

Table 2.7. ***Table of the Project's Main Objectives and the Studies' Aims and Research Questions.***

	Main Objectives			
Study Aim & Objective	**1. To understand in what ways workers with LTCs self-manage at work.**	**2. To examine how work features impact characteristics of workers' LTC self-management (and vice versa).**	**3. To identify workers perceived LTC self-management support needs and received support.**	**4. To examine employers understanding and perspectives of workers' LTC self-management and support needs.**
Study 1 - Survey. Explore differences in work features and LTC status between workers, and differences in work features, LTCs and self-management characteristics between workers with LTCs.	*Question 1*: What aspects of health are you unconfident about self-managing?	--[a]	*Question 2:* What aspects of health could you better self-manage at work? *Question 3:* What one change would improve your LTC self-management at work?	--
Study 3 - Employer Interviews. Examine employers' views on workers' LTC self-management and support needs.	--	*Question 4:* How do employers perceive work factors influence workers' LTC self-management? *Question 5:* What are the challenges (obstacles) to supporting workers' LTC self-management?	--	*Question 6:* What do employers know and understand about workers' LTC self-management and support needs? *Question 7*: What are employers' views about their role/responsibilities in LTC self-management support?

	Main Objectives			
Study Aim & Objective	**1. To understand in what ways workers with LTCs self-manage at work.**	**2. To examine how work features impact characteristics of workers' LTC self-management (and vice versa).**	**3. To identify workers perceived LTC self-management support needs and received support.**	**4. To examine employers understanding and perspectives of workers' LTC self-management and support needs.**
Study 4 - Worker Interviews. Explore the dynamics of workers' LTC self-management experiences.	*Question 8*: How do workers self-manage LTCs at work?	*Question 9*: How does the work environment affect workers' LTC self-management? *Question* 10: What worker attributes are important to workplace LTC self-management?	*Question 11*: How are the self-management support needs of workers with LTCs met?	--

[a] Not applicable.

Chapter 3

3 Methodological Approach

3.1 Research Process

This research project adopted a mixed methods approach associated with a pragmatic paradigm to explore workers' LTC self-management support needs. Mixed methods refer to research that integrates qualitative and quantitative data within a single study (Wisdom et al., 2012). The pragmatic paradigm involves collecting data via mixed methods in a way that is suited to the research questions and supports mixed methods as a way of generating evidence for best practice (Creswell & Clark, 2007; Feilzer, 2010). Notably, utilising mixed methods by integrating quantitative and qualitative data strengthens the project's overall results to provide new insights to health problems (Hanson et al., 2005; Tariq & Woodman, 2013). Furthermore, combining methods in research is accepted in health studies (Bravo et al., 2015; Sale et al., 2002) and utilised in LTC self-management research (Gibson et al., 2018; Hutting et al., 2017; Sell et al., 2016; Walker et al., 2014).

This project's research questions were broad and explore several perspectives including those of workers (with and without LTCs) and employers including health and safety, OH, HR and business owner participants. The researcher envisaged that collecting multiple perspectives via a sequential mixed methods approach would enable the gathering of an in-depth view of workplace LTC self-management support, exploring mechanisms and lived experiences in a richer way than is possible using one method (Creswell & Plano Clark, 2007; Halcomb & Hickman, 2015; Tariq & Woodman, 2013). In particular, by utilising diverse methods this approach can provide different insights by offering a more comprehensive view of phenomena (Sparkes, 2015).

This is pertinent given the project's aim of providing new, coherent and comprehensive understandings of workplace LTC self-management support from various perspectives. The project adopted a sequential explanatory mixed methods methodological approach with quantitative and qualitative data collected separately and sequentially (Ivankova et al., 2006). Starting from a positivist stance with a worker survey the project later moves to a more naturalistic position with qualitative interviewing. Despite the project's explanatory process, the nature of the research questions entails a flexible position to be adopted with some exploratory parts. Additionally and similarly to a varied explanatory (participant selection) model (Clark & Creswell, 2008), participants were selected by their LTC status and indication of interest, before being briefed and invited to participate in qualitative studies.

Furthermore, the approach is characterised by collecting quantitative and qualitative data at different time points, one after the other, with each study partly informing the next. Therefore, both an iterative and deductive approach was adopted by the researcher.

Despite the advantages of mixed methods approaches they are not without criticism. Philosophical critics of mixed methods are unconvinced that methods can be combined in this way to provide coherent versions of reality (Symonds & Gorard, 2008). Some construe that paradigms, our belief systems and ways of seeing the world cannot be combined in mixed methods methodologies as they have strict boundaries (Murphy et al., 1998; Tariq & Woodman, 2013). Furthermore, practical problems can arise in presenting realities from mixed methods research when trying to interpret and combine data from studies (e.g., quantifying qualitative data; Driscoll et al., 2007). Plus, sequential mixed methods processes can serve as a burden on researcher's time and different study timescales can cause problems (Bowers et al., 2013). Notwithstanding these criticisms, the use of different methods with their respective philosophical traditions can generate new knowledge through dialectical research (Meissner et al., 2011), moderating some of the weaknesses associated with single methods (Johnson et al., 2007) whilst concurrently combining methods benefits. For the purposes of this project and in particular the 'how', 'what' and 'why' research questions, quantitative and qualitative methods are combined in a mixed methods design to address the different aspects of the research project's aims and objectives (Woolley, 2009).

3.2 Project Overview

This research project collected data from participants over a 23 month period. The project's mixed methods approach comprised of two parts and four separate interrelated studies. This thesis presents the results from the studies including: 1) a cross-sectional worker online survey questionnaire; 2) a longitudinal 10-week worker online diary and journal; 3) an employer semi-structured interview study; and 4) a narrative interview study of workers with LTCs. The overall methodological approach, aims and objectives are presented in this chapter. Detailed information about the individual study's methods and their respective aims, objectives, hypotheses and questions are presented in their related chapters. Figure 3.1 illustrates the project approach and recruitment protocol.

The project's methodological approach had two parts each made up of two studies. The first part initially collected mostly quantitative data to test the research hypotheses on the health, LTC, self-management and work characteristics of a working population via an online cross-sectional survey questionnaire. A separate longitudinal diary and online journal then collected similar data but longitudinally and only from workers with LTCs. The second part

collected richer qualitative data via semi-structured and narrative interviews to explain the quantitative data, research questions and explore employers and workers views and self-management experiences. The approach to the interviews was informed by the literature, an initial analysis of the Study 1 and 2 data and free-text comments and the researchers' professional experiences in workplace health and wellbeing. See Figure 3.2 for a summary of the research process parts and model.

1

STUDY 1 – Cross-sectional Worker Online Survey

Employers approached:

- directly – n = 23;
- indirectly – n = 96.

Worker survey participants (n = 736):

- 554 recruited directly via employers (n = 8);
- 182 recruited indirectly via other means.

Participants with LTCs (n = 327) condition demographics:

- Mental health – n = 119;
- MSK – n = 94;
- Other LTC – n = 114.

STUDY 2 – Longitudinal Worker 10-week Online Diary

Workers (identified from Study 1):

- 191 workers invited, 67 make at least one diary entry;
- Six time-points (T);
- 59 complete at T1, 43 T2, 40 T3, 21 T4, 30 T5 & 22 T6.

Participant (n = 67) LTC demographics:

- Mental health – n = 25;
- MSK – n = 23;
- Other – n = 19.

2

STUDY 3 – Employer Semi-structured Interviews

- 21 employers approached directly;
- 15 participants (incl. 6 Study 1 participants).

STUDY 4 – Worker Narrative Interviews

- Approached from Study 1 (n = 12) 9 participate;
- Approached by other means (n = 6) 5 participate.

LTC demographics:

- Mental health – n = 5;
- MSK – n = 5;
- Other – n = 4.

FIGURE 3.1. ***Diagram of the Project Approach, Parts and Recruitment Protocol.***

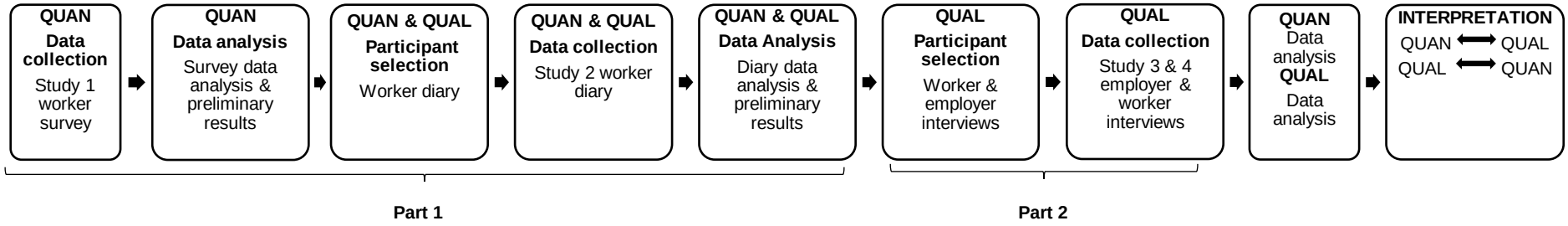


FIGURE 3.2*. Summary of the Research Process Applying the Explanatory Design Participant Selection Model to the Project (adapted from Cresswell & Clark, 2007).*

3.3 Overview of Participant Recruitment for all Studies

Except for Study 3 (employer interviews) workers with LTCs were first recruited to take part in an online survey in Study 1 entitled '*Do workers with long-term health conditions need self-management support in the workplace*?' The survey was also open to workers without LTCs so that the reach of the survey could be determined and certain demographic and work characteristics between those with and without LTCs compared. The survey invited participants with LTCs to express their interest for taking part in Study 2 (a diary and journal) and/or Study 4 (a narrative interview) by ticking a box and providing their email contact details. By exception, five additional participants were directly recruited by the researcher to participate in Study 4 (worker narrative interview).

Recruitment of workers was undertaken in two ways. Firstly, directly through employers and secondly, indirectly by the researcher advertising the study via different means including social media platforms such as LinkedIn and Twitter. To recruit through employers, those employers (n = 23) in the researcher's close networks were approached and provided with information in an email or study advert. Employers (n = 96) in the researcher's broader network were also approached and provided with study information. Recruitment took place over a 20-month period. Twelve employers demonstrated an interest in the research with eight agreeing to support the study and distribute or advertise the survey to their workers, including two universities and two councils and one NHS hospital, charity, automotive and oil company. Seven hundred and thirty-six workers participated in the first study and 327 reported a medically diagnosed LTC.

For Study 3, employers were recruited in two ways. Firstly, directly by the researcher and secondly, indirectly by the researcher identifying contacts via her networks. The interview was open to employer contacts with a professional role in their organisations workplace health and wellbeing. Firstly, those employers (n = 8) who had distributed and advertised the survey study to their workers were invited to take part via an email containing an interview information sheet. They were asked to express their interest by return and include a signed consent sheet. Secondly and in the same way, contacts in the researcher's broader network were identified and contacted via email. Recruitment took place over a 7-month period. Overall, 16 employers demonstrated an interest in taking part with 15 participating in an interview. Of these, six had distributed the survey study to their workers. Details of the employers are available in the methods section of Study 3 in Chapter 6, Section 6.6, p. 142.

The reasons employers shared for not participating (i.e., not distributing a survey to workers) included concern about organisational survey fatigue due to other staff surveys, or because

of internal rules concerning technology and email distribution. Reasons provided for non-participation in a Study 3 employer interview included not believing they would add much value to the study, and unforeseen job demands.

Overview of Long-Term Condition Foci

Due to the diversity of long-term health conditions, the project took a general approach rather than focusing on specific condition categories e.g., depression, arthritis etc. This was to ensure that the condition focus could reflect the project's sample and that a complex array of conditions could be captured. Such an approach made the best use of all available LTC data. Moreover, many LTCs share common characteristics including being inherently self-managed and enduring. The condition focus is explained in detail in Chapter 4, Section 4.4.

3.4 Ethical Approval

This project was undertaken in accordance with the guidelines from Loughborough University's Ethical Committee for research with human participants. Ethical approval for the studies was obtained from the University's Ethical Committee in July 2016 and March 2018 (see Appendix 4 and 5). Further approvals were required by three employer participants who had agreed to distribute the Study 1 survey to their workers. Therefore for Study 1, three employer participant consents were secured by the researcher via: 1) a non-disclosure agreement for a charity; 2) the provision of a research protocol to a support charity; and 3) since one of the employer participants was an NHS Trust, ethical approval was required, and was obtained through the Salisbury NHS Trust Research Ethics Committee in November 2017.

For each study, participants were required to give informed consent to participate either electronically or in writing. In Study 1, participants were required to provide consent via the survey's online platform and before being able to complete the survey. In Study 2, participants were required to consent when registering to take part and in order to access the diary's online platform. For the study 3 and 4 interviews, employers and workers were required to sign and return a consent form to the researcher ahead of their interview. Participants were provided with detailed information about each study they were interested in participating in. Participants were also made aware of their right to withdraw at any time, confidentiality and invited to contact the researcher with questions.

3.5 Data Protection and Confidentiality

Participant information was stored in line with the General Data Protection Regulation (GDPR), Data Protection Act 2018 and Loughborough University's Ethical Sub-committee

guidance. To ensure anonymity participants were allocated a unique code in the study from their survey response. Worker and employer interview transcripts were anonymised. In line with Loughborough University's Ethical Sub-committee guidance, personal data and research data were held on a secure encrypted computer accessible only by the researcher, and stored securely on the Loughborough University systems including OneDrive.

Chapter 4 – Study 1

4 The Workplace Self-Management Support Needs of Workers with Long-Term Health Conditions – A Survey Study

4.1 Introduction

This chapter explores the self-management support needs of workers with LTCs by examining the health, work and self-management characteristics of a working population. Evidence shows that LTCs can negatively affect people's work productivity (de Jong et al., 2015; Kopnina et al., 2014), workability (a worker's assessment of their ability to work) (De Vries et al., 2013; Leijten et al., 2014), QoL (de Jong et al., 2015) and wellbeing (Naylor et al., 2012). It is suggested that work interventions are needed to help workers self-manage LTCs (Munir et al., 2013; Ruston et al., 2013). In principle, providing an intervention that supports worker's self-management could help minimise the negative affects and work disability associated with LTCs. Schopp et al (2017) showed that workers attending an adapted worksite version of the CDSMP (about one third of which had an LTC) reported improved self-efficacy and health behaviours after the intervention. If employers are to provide effective support, it is pertinent that the self-management support needs of workers with LTCs are understood.

Little is known about workers' LTC self-management support needs because most studies explore it from patient perspectives (Dube et al., 2017; Schopp et al., 2014b; Van Houtum et al., 2015; Varekamp & van Dijk, 2010). Few include work as a self-management support setting (Glasgow et al., 2008; Ruston et al., 2013; Smith et al., 2015). Although not everyone needs to meet the demands of an LTC at work, work stress can undermine health, worsen LTCs (Cooper & Cartwright, 1994; Nieuwenhuijsen et al., 2010) and could be a barrier to self-management. Evidence suggests that good working conditions including having adequate support, can reduce stress, promote self-efficacy to self-manage (Munir et al., 2009a; Weijman et al., 2005b) and enhance workability (Jansson & Gunnarsson, 2018). Added to this, disclosing an LTC at work can enable support access including to modifications (Munir et al., 2005b).

The interface between worker's LTC self-management and features of work including working conditions remains largely unexplored (Vassilev et al., 2014). Research calls for studies examining these variables (Munir et al., 2009a). This study addresses this gap by surveying a sample of workers about their work and health status including the self-

management characteristics of workers with LTCs. Moreover, as most workplace LTC studies focus on *return to work* support the support needs of worker's with LTCs who are *at work* are explored (Hjärtström et al., 2018).

Self-efficacy reflects a person's judgment and confidence in their ability to control their behaviour (Bandura, 1997). Considerable evidence shows self-efficacy to underpin LTC self-management (Foster et al., 2015b; Munir et al., 2009a; Schopp et al., 2014b; Smith et al., 2015; Taylor et al., 2014; Weijman et al., 2005b). Self-efficacy to self-manage an LTC relates to better workability (Hjärtström et al., 2018), is amenable to employer support (Gallant, 2003; Munir et al., 2009a) and can positively influence people's self-management decisions, for example deciding to disclose an LTC (Brouwers et al., 2019). Conversely, low self-efficacy relates to a poorer QoL and wellbeing (Peters et al., 2019).

In clinical settings, people's self-efficacy and engagement to self-manage an LTC can be determined by the Patient Activation Measure (the PAM®, hereon referred to as 'activation'), which forms an important part of the NHS Five Year Forward Plan to embed self-management and personalised care (NHS England, 2019). Activation captures self-efficacy and readiness to change components and guides intervention planning (Hibbard & Gilburt, 2014). Higher activation relates to better LTC self-management and better job performance (Harvey et al., 2009). Therefore, while similar the concepts are not directly comparable. Activation is a broader concept of self-management engagement whereas self-efficacy focuses on confidence for specific behaviours (see Chapter 2, Section 2.3.2, p. 32 for an earlier discussion of the concepts). Activation is currently unfeatured in workplace LTC self-management studies. As both self-efficacy and activation concepts shed light on people's self-management confidence and support needs, this study measures both.

This study examines the LTC, work and self-management characteristics of workers with LTCs to inform future workplace self-management support interventions. The first study objective was to explore differences in work and LTC characteristics in a working population. The second was to explore differences in features of work, LTC and self-management characteristics between workers with LTCs. The third was to explore workers' self-management support needs.

Four hypotheses were tested in this study:

1. Working conditions, support and workability will differ between workers with and

without LTCs;

In regard to workers with LTCs:

2. Activation, self-efficacy, wellbeing, QoL, working conditions, workability and support will differ between workers with different types of LTCs;
3. Activation will be positively associated with workers' self-efficacy, wellbeing and workability;
4. Workers who have disclosed an LTC at work will be more activated, self-efficacious and supported.

4.2 Method

4.2.1 Design

This was a cross-sectional study where an online survey questionnaire was completed by working people, across different types of employment within UK organisations. The bespoke questionnaire was designed by the researcher and piloted with eight working people (with and without LTCs) in January 2017 resulting in no revisions. Data collection for the study started in February 2017 and ended in January 2019.

4.2.2 Procedure

Two approaches were taken for recruitment. Firstly, employers were targeted to distribute information about the project and Study 1 survey to their workers. Secondly, working individuals were targeted via networks and social media platforms to complete the survey.

Recruitment via employer representatives: Firstly, a targeted sample (n = 23) of employer representatives known to the researcher were invited to distribute information about this study survey to their workers. Contacts included in-house (UK based) HR practitioners, diversity and inclusion representatives, plus OH and wellbeing specialists with responsibilities for worker wellbeing. Contacts were approached directly via email and LinkedIn messaging and emailed a detailed information sheet outlining what the project involved and a survey link (see Appendix 6).

Secondly, employer representatives unknown to the researcher were approached via LinkedIn, Twitter, professional HR networks, news articles and word-of-mouth. Ninety-six contacts were made. Interested representatives were emailed the same detailed information sheet and a survey link. Networks and professional colleagues were encouraged to snowball study information. In total, eight employer representatives agreed to circulate the survey link to their workforce via various means including email and intranet. The known workforce sizes of the employer participants ranged from 24 to 11,200 workers. All employer representatives who expressed an interest were told that the researcher was able to provide them with anonymised aggregated data at the study end at request.

Recruitment of working individuals: In addition, working individuals were recruited directly by the researcher via social media and advertising, which directed people to a survey link and detailed study information. For example, the *Call for Participants* research site was used as an advertising platform and posters were produced and put up in a leisure centre and GP surgery local to the researcher. Health charities and support groups also promoted the study

via their websites by sharing study information and a general survey link including: MIND, Scope, the Business Disability Forum, NHS health at work and Crohn's and Colitis UK. All participants recruited directly were briefed via a social media or advertising platform advert which directed them to an online survey link.

Participants were required to consent to participate ahead of being able to complete the online survey and reminded of their right to withdraw at any stage and of the study's voluntary nature. In total 554 participants completed the survey via dissemination from their employer and 182 via other recruitment drives. Therefore the sample comprised one of convenience with workers choosing to participate themselves.

4.2.3 Expected Sample Size

To understand the LTC profile of a working population and maximise responses, the survey was targeted at all workers regardless of health status. To allow sufficient time for recruitment and exposure, the survey was opened in February 2017 and left open over 23-months. The recruitment time was based on two similar survey study's examining aspects of LTC self-management conducted by Munir et al (2009a, 2005b) and which recruited 772 and 734 workers with LTCs. In both studies people were mainly affected by MSK, respiratory and mental health conditions, and with about 100 workers in each group. A similar participant number was therefore anticipated. Notably, in Munir et al's (2005b) study, a smaller group of *other* types of LTCs (n = 46) was represented including conditions less reported by workers (e.g., irritable bowel syndrome). In the present study, participants were recruited via employer communications including intranet adverts and directly by the researcher via social media and snowballing. Therefore, it was impossible to calculate a response rate. However, employer participant's feedback suggests that the online survey link was distributed internally to a possible audience of between 24 and 2300 people.

Eligibility criteria included: 1) being an employee or worker; 2) actively working; and 3) able to read, write and speak English. As the study was concerned with actively working people with LTCs and the workplace, unemployed, self-employed and individuals not actively working (i.e., on sick, paternity or maternity leave) were excluded. People were screened out when completing the survey's first consent questions which included questions about employment status and if people were actively working. A summary of the demographic characteristics of the whole sample is presented in the results section.

4.3 Background Survey

The survey was hosted exclusively online by Jisc (formally known as the Bristol Online Survey) and contained three parts (see Appendix 7 for a copy). The first part focused on socio-demographic and health questions that were relevant to all participants. The second part focused on LTCs thus only participants with conditions completed section two, whilst those without were routed to a third section when they answered 'no' to the question '*Do you have a long-term health condition that has been diagnosed by a medical doctor?*'. The third part focused on work features and the questions were relevant to all participants. The survey measures relevant to this study's analysis are summarised in Table 4.1 and discussed next.

Table 4.1. ***Summary of the Survey Items by Participant Group.***

Participant Group	Survey Questions
All	¶ Background demographic, work, general health questions including the General Practice Physical Activity Questionnaire (GPPAQ) and presence of an LTC;
	¶ Sarason 12-item Social Support Questionnaire (SSQ);
	¶ Health and Safety Executive Management Standards (MSIT) Indicator Tool;
	¶ Work Ability Index (WAI).
With Diagnosed LTCs	¶ General health, diagnosis date, condition type, severity;
	¶ Office for National Statistics Personal Wellbeing Questions (ONS4);
	¶ Quality of Life (QoL) single-item question;
	¶ Patient Activation Measure (PAM®);
	¶ Stanford six-item self-efficacy scale;
	¶ Self-management activity questions;
	¶ Disclosure questions.

Questions Relevant to all Participants - Section 1 and 3.

Demographics.

Information was collected about participants: age (in years) and gender (male = 1, female = 2, prefer not to say = 3, other = 4). Participants could indicate their ethnicity from 13 categories. These were subsequently consolidated into five categories for reporting: *mixed British*; *mixed White*; *Asian, Indian, Chinese; Pakistani, Bangladeshi*; and *other*. Four items collected information about participants' occupation including: tenure (in full years), industry (12 original sectors were consolidated into five: professional services, banking and finance; healthcare; public-sector not-for-profit; and private for-profit sector) and; employer size (less

than 50 and between 51-249 (small); 250-500 (medium); 501-1000 or more than 1000 (large)). Finally, work activity was assessed using the three item General Practice Physical Activity Questionnaire (GPPAQ) (Department of Health and Social Care, 2013) and which allocated participants into one of four activity levels including *inactive*, *moderately inactive*, *moderately active* and *active*. Participants were asked to indicate: 1) their amount of work activity from five available answers (*e.g., ó I spend most of my*); 2) time spent doing five different types of activity in the last week (e.g., *exercise*). Four time answers were available ranging from *none* to *3 hours or more*; and finally 3) walking pace from five answers ranging from *slow, <3mph* to *brisk* (i.e., moderate intensity). The researcher entered the scores into an online scoring tool (Pharmcalc.com) and the reported activity level result into the participants' SPSS (IBM Corporation, 2016) case. Information on the GPPAQ's reliability and validity is not readily available (Ahmad et al., 2015), but the measure is used in general practice settings and is quick to complete, therefore was deemed suitable for this study.

Social Support.

To measure workers perception of the availability of social support at work, the Sarason Social Support questionnaire (SSQ) was adapted (Sarason et al., 1983). Adaptions included reducing the question number from the original 27-items to 12, the addition of '*at work*' questions and the listing of four sources of workplace support as answer options. The original SSQ features a two-part answer to assess the quantity of support and people's support satisfaction. The internal consistency of both aspects is high (Sarason et al., 1983). In this study, only the first question part was used to identify the number (quantity) of workplace support sources. All participants were asked 12 questions e.g., *ó who do you turn to at work if you need to talk about your health?* ô For each question participants were asked to indicate from a four-item list who they can turn to, or rely on in specific circumstances including: *colleague(s), line manager, occupational health* and *no-one*. Each support source was given a value of '1' (excluding *no-one* which scored 0). A score was calculated by summing the total number of support sources indicated and ranged between 0-48. Higher scores indicate more sources of workplace support. Cronbach's alpha ( ) indicates the reliability of a measure. Values of .8 or .7 are considered good and .6 acceptable (Field, 2005). In this study, the alpha coefficient for the measure was high = .94 suggesting good internal consistency and reliability.

Psychosocial Working Conditions.

The 35-item Health and Safety Executive Management Standards Indicator Tool (MSIT) (Cousins et al., 2004; Edwards et al., 2008) was used to measure psychosocial working

conditions. The MSIT is used to assess the conditions in which a worker could experience stress and risks at organisational and individual levels (Marcatto et al., 2014). In the UK, the MSIT is used extensively in public and private-sector organisations. A list of statements was provided asking participants to select an answer that best reflects how they had felt about work in the past six-months. The MSIT has acceptable reliability (Edwards et al., 2008; Kerr et al., 2009). The measure addresses seven stressors described as follows, along with the study's respective alpha coefficients: 1) demands (8 items, = .75); 2) control (6 items, = .81); 3) manager (5 items, = .88) and 4) peer support (4 items, = .79); 5) role (5 items, = .85); 6) change (3 items, = .80); and 7) relationships (4 items, = .80). Participants were asked to indicate answers on a five-point Likert scale ranging from '*strongly* to *disagree*ô '*strongly* and '*never* to '*always*' to statements such as *óI can decide when to break*ô and *óI have unachieved*ô. Demands and relationships are asked in the negative and reverse scored. For each stressor scale a mean is calculated. Scores range between 1 (poor) to 5 (desirable, good) (Bevan et al., 2010) with higher scores indicating fewer stress concerns and better working conditions. Colour codes can be assigned to each standard relative to HSE benchmark scores based on a data set of 136 employers (HSE, 2004). Colour codes indicate an organisations performance against the standard. Red indicates urgent action is needed, and performance is <20th percentile; yellow indicates a need for improvement with performance >20th and <50th percentile; blue indicates good, better than average performance >50th and <80th percentile and green represents an organisation doing very well and in the 80th percentile (Institute of Employment Studies, 2009). To contextualise this study's findings, results were compared to HSE benchmarks and applicable colour codes are reported in the superscripts of results Tables 4.5 and 4.6.

Workability.

Two single items were taken from the Workability Index (WAI) (Jääskeläinen et al., 2016; Tuomi et al., 1994): 1) current workability score compared to a lifetime best; and 2) workers own prognosis of their ability to work in two years' time. Other studies have used single items as good alternatives to the full WAI (Ahlstrom et al., 2010; Jääskeläinen et al., 2016). The first item asks participants to rate their current workability on a 0-10 Likert scale, *óif you assume your current work ability at its best has a value of 10 and at its worst 0, how many points would you give your current workability?*ô Scores 0-5 are considered '*poor*', 6-7 '*moderate*', 8-9 '*good*' and 10 '*excellent*' (Jääskeläinen et al., 2016). The second item asks participants about their certainty in doing their job in two years' time. The three available answers were scored in line with the WAI: *unlikely* = 1, *uncertain* = 4, and *quite certain* = 7. For both items higher scores indicate better workability. The two items are recommended for use singly in health studies and as a prognostic tool. In a large-scale study of over 11,000

Finnish workers each item was shown to predict workplace exclusion risks such as sick leave and retirement (Kinnunen & Nätti, 2018).

Additional Questions for People with LTCs - Section 2.

Participants with at least one diagnosed LTC were asked to respond to additional questions in section two.

Presence of an LTC and Status.

Three items selected from a checklist were designed to gather information about LTCs including: the presence of an LTC(s) (*yes/no*), and the type of LTC(s) e.g., cancer, MSK etc. If applicable, participants were asked to state the main LTC (if more than one) that mostly affected work. Participants were then asked to self-report the severity of their LTC as either '*mildô*, *óor*'*s*' *ôoderateô*

Wellbeing Measure.

The *Office for National Statistics wellbeing measure* (ONS4) was used to assess participant wellbeing (Benson et al., 2019; ONS, 2018) and is used in numerous UK population and government surveys (Benson et al., 2019; Tinkler, 2015). Four questions and response categories assess aspects of wellbeing including evaluative (i.e., life satisfaction), eudaemonic (i.e., sense of purpose), and hedonistic (i.e., happiness aspects; Benson et al., 2019). Questions include *óoverall, dhaw ayou switeh* and *'to what life now extent do you feel that the thi* Participants respond *do in you* using an 11-point Likert scale with 0 being '*not at* to 10 '*completely*'. The anxiety item '*overall how anxious did you feel* on a scale where *0 is óyn?oôt at all anxiou 10* is '*completely* is reverse scored. In this study average mean scale scores are used to evaluate wellbeing. Other studies recommend a summary score approach (Benson et al., 2019). In this study Cronbach's alpha was = .79.

Quality of Life.

Quality of life (QoL) is a multi-dimensional concept and in this study was measured by a single item designed by the researcher and informed by the literature (Megari, 2013). The question utilised an 11-point Likert scale: '*quality of life is the standard of health, comfort and happiness that you experience. How would you describe your overall quality of life on a scale of 0 to 10, where 0 is very poor quality, and 10 is excellent quality*'. Higher scores

indicate a better QoL. Similar single item measures have been found to be valid and reliable in other studies of people affected by LTCs (Yohannes et al., 2011).

Patient Activation Measure - PAM®.

The British version of the PAM was licensed by Insignia Health LCC to assess participants activation to self-manage an LTC (Ellins & Coulter, 2005). The PAM is a 13-item unidimensional scale which assesses a person's knowledge, skills and confidence towards self-managing an LTC (Hibbard et al., 2005). It is used to assess patients' engagement with self-management and support needs in the UK. The PAM is completed by participants themselves to indicate the extent to which they agree with 13 statements using a four item response scale (i.e., '*disagree* to '*strongly*). Participants can answer '*N/A*' if the question is irrelevant. Statements include '*I am the person who is resp care of my health*' and '*I know what* Answers are *of my p* combined to calculate a single score between 0 and 100 and represent an individual's perception of themselves as an active-self-manager. Higher scores indicate more active self-management. Scores can be categorised into one of four activation levels: level 1 (< 47) indicates that a person is overwhelmed and passive in self-managing an LTC; level 2 (47.1-55.1) indicates that a person lacks self-management confidence and knowledge; level 3 (55.2-67.0) indicates a person is taking action to self-manage but may still lack confidence and skill(s); and finally, level 4 (67.1 >) indicates that people are active self-managers but may struggle when stressed. In this study, anonymised answers were shared with and independently scored by Insignia Health, as per the license directive. The PAM has been tested across many different LTC groups (Ellins & Coulter, 2005; Hibbard & Gilburt, 2014). Moreover, the measure's internal consistency, reliability and construct validity is demonstrated in numerous studies and validated in the UK (Hibbard & Gilburt, 2014; Prey et al., 2016). In this study Cronbach's alpha was high = .87.

Self-Efficacy for Managing an LTC at Work.

To measure participant self-efficacy the six-item *Stanford Self-Efficacy for Managing a Chronic Disease Scale* (SE6) was used (Lorig et al., 1996; Ritter & Lorig, 2014). The SE6 is reported to be highly reliable with = .91, is widely used in chronic disease studies (Gruber-Baldini et al., 2017) and validated in large samples (Ritter & Lorig, 2014). Participants are asked to indicate their confidence to six statements using a 10-point Likert scale with 1 being '*not at all confident*' to 10 '*totally*'. In this study the statements were adapted. For example the original question of '*how confident are you that you can manage the fatigue caused by your disease from interfering with the* was transformed to '*I can manage fatigue caused by my condition to ensure I can do the things I want to do at*

work. A scale score ranging from 1-10 is reached by calculating the mean of the items, with higher scores indicating more self-efficacy to self-manage an LTC at work. In this study the adapted scale's reliability was high = .92.

Self-Management Activity Questions.

As there were no published self-management activity questions suitable to use, the questions were designed by the researcher using the academic literature and patient guidance. For example, on self-managing MSK pain. Fourteen items were created to capture self-managed activities that generally support LTCs e.g., managing fatigue and monitoring symptoms. Participants were asked which activities had required them to undertake self-management action at work (in the last month) and to indicate how often, using a five-point Likert frequency scale with 1 being '*not at all*', 2 '*several*', 3 '*more than half*', 4 '*nearly* and 5 '*everyday*'. The scale's reliability was = .79. Participants were also asked to provide reason(s) why they might not self-manage an LTC at work from a list of nine items including '*lack of time, ô and ó too much w*'. Answers were dichotomised to '*yes*' (where the reason had been chosen) or '*ón*' (where the reason was not chosen). Participants could specify other reasons in a free-text box.

Improving Workplace Self-Management Free-Text Questions.

Three (optional) free-text questions asked participants to comment on: 1) aspects of health they were unconfident about self-managing at work; 2) how they might better self-manage an LTC at work; and 3) to identify one change that might improve their self-management at work.

Workplace Disclosure of an LTC.

Most UK workers are not required to disclose an LTC to their employer. Research suggests that workers adopt a disclosure strategy linked to their LTC self-management (Munir et al., 2005b) from which disclosure questions were adapted for this study. Participants were asked to indicate who they had disclosed an LTC to at work by answering '*yes*', or '*nó/naô*' to the following: '*ó line manager/supervisor, ô and ó cosurpa, tió colleague, ô and ó h.*'. Answers were dichotomised to '*yes*' (to include those who had disclosed to a manager, colleague and/or OH), or '*ón*' (to include those who had not disclosed to any person at work). N/a answers were excluded from analysis. Those who had disclosed to one or more groups were asked to give reasons for their disclosure from a list of 11-items including '*ó to receive practical support, ô and ó obvious something*'. For those non-*different*

disclosed, they were able to select from eight items including *ó p r a c t i c a l s u p p o r t i s r e q u i* and *é d ô a m n o t* A free-text option was also available.

4.4 Analysis

A combined quantitative and qualitative analytic approach was taken. The quantitative analyses used statistical methods to examine participants LTC and self-management characteristics and work features and to verify the study's hypotheses. The qualitative analysis helped explain the quantitative analysis and allowed a more detailed consideration of self-management support needs. In total 740 responses were received. Initial checks identified four duplicate surveys which were then removed.

Long-Term Health Condition Categorisation.

Of the final sample (n = 736) nearly half (n = 327) of participants reported having at least one medically diagnosed LTC. For the purposes of this study, the International Classification of Diseases Index (ICD-10) (WHO, 2016) was used to categorise LTCs. Ten ICD categories were identified and cross-checked with a researcher experienced in using the index (Munir et al., 2005b). The first two categories including mental health (n = 119) and MSK (n = 94) were most prevalent in the sample.

The sample sizes of the eight remaining ICD categories was small (ranging from 1-28 participants) and included: 1) neurological disorders (n = 28) e.g., multiple sclerosis; 2) endocrine and metabolic disorders (n = 23) e.g., diabetes; 3) lung and respiratory disorders (n = 19) e.g., asthma; 4) digestive disorders (n = 13) e.g., Crohn's disease; 5) cardiovascular diseases (n = 11) e.g., hypertension; 6) cancer (n = 10) e.g., bladder cancer; and 7) a small group (n = 5) of LTCs infrequent in the sample including skin, gynaecological and eye disorders. Five participants failed to specify their LTC. Given this diversity of LTCs in the sample it was decided to establish an '*other*' (n = 114) group to capture the seven remaining categories, and participants who had not specified an LTC. This approach is similar to previous studies in which a broad chronic disease category is used to show a person has an LTC (Fleischmann et al., 2018).

These summary LTC groups were used for analysis. Thus, responses were coded to: 1 = mental health; 2 = MSK; and 3 = other. The reasons for this focus are threefold: 1) these LTC groupings are prevalent in the study's sample; 2) mental health, MSK and LTCs are more generally reported as the main reasons for long-term work absence in the UK (ONS, 2019). In particular, mental health is currently an area of energetic UK government and employer reform (Stevenson & Farmer, 2017) with LTCs recognised as an area where public

and employer literacy needs to improve (Taylor et al., 2014); and 3) most LTCs require people to self-manage in some way. Additionally, although the evidence base examining self-management support is strong for many LTCs including asthma, COPD, diabetes and back pain (Taylor et al., 2014), this is less so from a work perspective and also for other LTCs including mental health and less prevalent conditions (e.g., neurological disorders). Other LTCs can have a significant impact on people's workability including neurological, endocrine, metabolic and respiratory conditions (Murphy et al., 2013; Pedron et al., 2019; Sin et al., 2002). This study adds to these more limited research areas.

Quantitative Analysis

Missing Values.

The quantitative analyses were carried out using SPSS 24 for Macintosh (IBM Corporation, 2016). All the survey data in Jisc was exported into an SPSS file. Initial data checks of the variables relevant to the study's hypotheses involved identifying outliers, missing values and normality checking. Checks showed two extreme outliers in the self-efficacy and one in the social support variables. These were transformed (winzorised) to the next highest (non-outlier) number (Field, 2005). Missing data was an issue for seven variables relevant to the study hypotheses. To avoid the listwise deletion of cases and lowering of the sample size some values were imputed using the estimation maximisation (EM) method in SPSS. This method is preferable to mean imputation by preserving variables relationships (Grace-Martin, 2019). The proportion of missing values ranged between 0.5 – 13% across the physical activity (n = 35), wellbeing (n = 34), disclosure (n = 21), activation (n = 20), self-efficacy (n = 14) and working conditions (n = 1) variables. Small proportions of missing data (< 10%) in the self-efficacy and working conditions variables were imputed and subject to EM. For *hypotheses 2* and *4* missing wellbeing observations were excluded from analysis thus 283 participant results were analysed. In line with other studies participant results with > 30% of missing activation data were excluded from analysis (Linden, 2015; Zill et al., 2013). Therefore for *hypotheses 2* and *3*, 307 participants with complete activation data were analysed from the total sample of 327 with an LTC. Missing categorical physical activity and disclosure answers were excluded from demographic analyses. Thus for *hypothesis 4*, 306 disclosure responses were analysed.

Statistical Analyses.

Firstly, t-tests for continuous variables and chi-square tests for categorical variables were used to explore socio and health demographic differences between participants with and without LTCs. Secondly, differences in demographic and self-management characteristics including activation, disclosure, self-management behaviours and reasons for not self-

managing, between participants with LTCs by the three condition groups, were compared using either analysis of variance (ANOVA) for continuous or chi-square for categorical variables. The third part of the analysis explored the study's four hypotheses. Work characteristics including working conditions, support, current and future workability were compared between workers with and without LTCs using ANCOVA (*hypothesis 1*). Due to significant between (LTC and non-LTC) group differences, age, ethnicity and education were controlled for and industry (given the vastness of those represented). To compare differences in activation and self-efficacy to self-manage an LTC, wellbeing, QoL, working conditions, workability and support between workers affected by LTCs (*hypothesis 2*), and to examine the influence of LTC disclosure on activation, self-efficacy and support (*hypothesis 4*), a series of analysis of covariance (ANCOVA) tests were run. Bonferroni post-hoc analyses accounting for unequal group sizes was used to examine significant differences. For *hypothesis 3,* four separate regression analyses were calculated with activation as the predictor for the dependent variables of self-efficacy, wellbeing, current and future workability. Previous studies suggest that younger and older workers self-manage health differently (Munir et al., 2009). Studies also suggest that ethnicity can affect people's help seeking behaviours (e.g., due to cultural expectations) with potential differences in self-management support needs related to gender and education level (Dwarswaard et al., 2015 Taylor et al., 2014). With this in mind, for *hypothesis 2, 3* and *4*, gender, age and LTC severity were controlled for. This is a similar approach taken in other self-management studies (Munir et al., 2009a) and a response to significant between-group diferences in age and condition severity herein. Data checks showed that the assumptions for regression modelling were met, residuals were generally normally distributed, and homogeneity of variance and linearity assumptions were acceptable.

Content Analysis

Two free-text questions explored participants' views about LTC aspects they were unconfident about self-managing (question 1) and could better self-manage at work (question 2). A third question asked participants to identify one change that would enhance their workplace LTC self-management. The three question's comments (n = 276) were subjected to an inductive content analysis in which main codes and patterns were extracted from the data itself (Elo & Kyngäs, 2008). The analysis aimed to add detailed context to the survey findings and is the same qualitative analytic approach followed in this thesis's diary study analysis (see Chapter 5, Section 5.6, p. 108). The content analysis followed the three-stage approach outlined by Elo & Kyngäs (2008) to quantify and describe the content. The stages include: 1) preparation; 2) organisation; and 3) reporting of the content. Stage one entailed the researcher reading the sets of comments and coding the data in Excel. In stage

two possible categories were identified, organised and consolidated via amalgamation and counts. To reduce bias, in stages 1 and 2, the researcher discussed the coding and interpretation with an independent researcher and HR practitioner. Comments about aspects of self-management that participants were unconfident about and might improve were categorised by *emotional*, *medical* (Corbin & Strauss, 1988; Lorig & Holman, 2003) and *practical* (Glasgow et al., 2003) types taken from the literature. The changes suggested by participants in question 3 were grouped by 13 broad categories the researcher had identified from the analysis. The results are presented in Table 4.11 of this chapter.

4.5 Results

Participant Characteristics.

Two socio-demographic analyses were undertaken including: 1) all participants and 2) participants with LTCs. Firstly, analyses of the characteristics of the whole sample (n = 736) and by LTC status was undertaken. Results are presented in Table 4.2. The mean age of participants was 42 years. There was a significant age difference between workers with and without LTCs (p = 0.047). Those affected by LTCs (n = 327) were older (43 years) than those unaffected (41 years). The majority of participants identified as female (n = 556). There were no significant gender or tenure differences between the groups. Participants were mainly mixed British (n = 610) or mixed white (n = 77). Most participants (n = 655) worked in large organisations employing 500 or more workers. A higher proportion of participants with LTCs worked in not-for-profit entities. The education level was high. Fewer workers with LTCs (n = 214) were degree educated than those without (n = 309). Workers with (n = 258) and without LTCs (n = 321) both reported being mainly inactive at work. There was a significant association between LTC status and work activity ($\chi^2(3) = 19.9$, $p = 0.001$) suggesting participants without LTCs are more active at work.

Secondly, the socio and health demographic characteristics of participants with LTCs (n = 327) were analysed. Results are presented in Table 4.3. Participants were fairly evenly spread across the study's three LTC groups: 1) mental health (n = 119); 2) MSK (n = 94), and 3) other (n = 114) conditions. Significant age differences between the groups was shown [$F(2, 324) = 16.0$, $p = 0.001$]. Participants affected by mental health LTCs were younger (M = 38 years) than those with MSK (M = 46 years) or other (M = 45 years) conditions. There were no significant differences in gender, tenure, ethnicity, education, industry, employer size or work activity. More female participants report being affected by LTCs (n = 251) than men (n = 76). Though the differences were not significant, workers with mental health conditions were more educated. Comparably to unaffected workers, those with LTCs (n = 263) were similarly inactive. Notably, there was significant group differences in LTC severity (p = 0.001) with those affected by mental health LTCs reporting greater severity and those with other LTC types the least.

Self-Management Characteristics of Participants with LTCs.

Additional analyses of LTC self-management characteristics were undertaken including participants' activation, workplace LTC disclosure, self-management behaviours and reasons behind not self-managing. Results are presented in Table 4.4. Significant differences in activation between the LTC groups (p = 0.001) was shown. Roughly half of the

participants at activation level 1 (56.6%) and 2 (45.8%) reported a mental health LTC, suggesting a passivity in self-managing LTCs compared to all other groups. Nearly half of participants with the highest activation (level 4) had other LTCs. The majority of participants (n = 274) had disclosed their LTC at work with no one LTC group indicated as more likely to do so ($\chi^2(1) = 306$, $p = 0.409$). About half (n = 15) of participants who had non-disclosed (n = 32) were affected by mental health LTCs. Most frequently participants undertook self-management behaviours (roughly more than half of days in the past month) relating to taking medication, managing fatigue, rest, diet and exercise. There was significant differences between groups in self-managing exercise [$F(2, 203) = 3.16$, $p = 0.044$], pain ($F(2, 303) = 55.1$, $p = 0.001$), acute LTC episodes [$F(2, 303) = 5.31$, $p = 0.005$], emotional aspects [$F(2, 303) = 21.1$, $p = 0.001$], mindfulness and meditation [$F(2, 303) = 7.24$, $p = 0.001$], self-talk [$F(2, 303) = 12.1$, $p = 0.001$] and monitoring symptoms [$F(2, 303) = 6.28$, $p = 0.002$]. Bonferroni post hoc tests showed that workers with mental health LTCs self-managed exercise ($p = 0.049$), acute episodes ($p = 0.023$), meditation ($p = 0.001$) and self-talk ($p = 0.001$) more frequently than workers with other LTC types, and emotional aspects more than workers with MSK ($p = 0.001$) and other ($p = 0.001$) LTCs. In addition, participants with MSK conditions more frequently self-managed pain than those with mental health ($p = 0.001$) and other LTCs ($p = 0.001$), and monitored symptoms more than workers with other LTCs ($p = 0.004$). Reasons given for not self-managing an LTC at work significantly differed across the groups in regard to job security ($\chi^2(2) = 10.5$, $p = 0.005$), a lack of support ($\chi^2(2) = .9.82$, $p = 0.007$), avoiding attention ($\chi^2(2) = 6.36$, $p = 0.042$) and a lack of time ($\chi^2(2) = 5.96$, $p = 0.051$). Larger proportions of workers with mental health than MSK and other LTCs avoided self-managing because of job security concerns (50.0%), lack of support (48.3%), to evade attention (45.8%) and a lack of time (38.3%).

Table 4.2. ***Socio-Demographic Characteristics of Participants by LTC Status.***

Variable	All	With LTC	Without LTC	*P*[1]
	(*N* = 736)	(*N* = 327)	(*N* = 409)	
	***M* (*SD*)**	***M* (*SD*)**	***M* (*SD*)**	
Age (years)	41.92 (11.62)	42.87 (11.71)	41.16 (11.50)	**0.047**
Range	19 – 72	19 - 69	19 - 72	
Tenure (years)	7.66 (8.30)	7.80 (8.13)	7.54 (8.46)	0.668
Range	<1 - 43	<1 - 42	<1 - 43	
	***N* (%)**	***N* (%)**	***N* (%)**	***P*[1]**
Gender				0.567
Female	556 (75.5)	251 (76.8)	305 (74.6)	
Male	178 (24.2)	76 (26.2)	102 (24.9)	
Prefer not to say	2 (0.3)	.	2 (0.5)	
Ethnicity				**0.002**
Mixed British	610 (82.9)	289 (88.4)	321 (78.5)	
Mixed White	77 (10.5)	22 (6.7)	55 (13.4)	
Asian, Indian, Chinese	25 (3.4)	5 (1.5)	20 (4.9)	
Pakistani, Bangladeshi	4 (0.5)	2 (0.6)	2 (0.5)	
Other	20 (2.7)	9 (2.8)	11 (2.7)	
Education Level				**0.010**
Degree	523 (71.1)	214 (65.4)	309 (75.6)	
A level or equivalent	135 (18.3)	73 (22.3)	62 (15.2)	
GCSE or below	78 (10.6)	40 (12.2)	38 (9.3)	
Industry				**0.001**
Professional services, banking & finance	268 (36.4)	102 (31.2)	166 (40.6)	
Healthcare	233 (31.7)	87 (26.6)	146 (35.7)	
Public sector, not-for-profit	163 (22.1)	93 (28.4)	70 (17.1)	
Private sector, for profit	56 (7.6)	37 (11.3)	19 (4.6)	
Other, unknown	16 (2.2)	8 (2.4)	8 (2.0)	
Employer Size				0.764
Large	655 (89.0)	290 (88.7)	365 (89.2)	
Medium	47 (6.4)	23 (7.0)	24 (5.9)	
Small	34 (4.6)	14 (4.3)	20 (4.9)	
Work Activity (*N* = 701)				
Inactive	579 (78.5)	258 (78.9)	321 (78.5)	**0.001**
Moderately inactive	82 (11.1)	28 (8.6)	54 (13.2)	
Moderately active	35 (4.7)	13 (4.0)	23 (5.4)	
Active	5 (0.5)	3 (0.9)	1 (0.2)	

[1] *p* values for t-test (age and tenure) and ὠ test analysis (gender, ethnicity, education level, industry, employer size and work activity).

Table 4.3. ***Socio and Health Demographic Characteristics of Participants with LTCs.***

Variable	Mental Health	MSK	Other	*P*[1]
	(*N* = 119)	(*N* = 94)	(*N* = 114)	
	***M* (*SD*)**	***M* (SD)**	***M* (SD)**	
Age (years)	38.25 (11.36)	45.94 (11.03)	45.16 (11.19)	**.001**
Range	19 - 63	20 – 69	23 – 67	
Tenure (years)	6.37 (7.57)	9.18 (8.73)	8.16 (8.01)	.715
Range	<1 - 30	<1 - 42	<1 - 37	
	***N* (%)**	***N* (%)**	***N* (%)**	***P*[1]**
Condition Severity				**0.001**
Mild	14 (11.8)	19 (20.2)	38 (33.3)	
Moderate	81 (68.1)	58 (61.7)	67 (58.8)	
Severe	24 (20.2)	17 (18.1)	9 (7.9)	
Gender				0.646
Female	88 (73.9)	73 (77.7)	90 (78.9)	
Male	31 (26.1)	21 (22.3)	24 (21.1)	
Ethnicity				0.416
Mixed British	100 (84.0)	84 (89.4)	105 (92.1)	
Mixed White	12 (10.1)	6 (6.4)	4 (3.5)	
Asian, Indian, Chinese	1 (0.8)	1 (1.1)	3 (2.6)	
Pakistani, Bangladeshi	1 (0.8)	1 (1.1)	.	
Other	5 (4.2)	2 (2.1)	2 (1.8)	
Education				0.337
Degree	100 (84.0)	60 (63.8)	70 (61.4)	
A level or equivalent	19 (16.0)	24 (25.5)	30 (26.3)	
GCSE or below	.	10 (10.6)	14 (12.3)	
Industry				0.114
Professional services, banking & finance	46 (38.7)	26 (27.7)	30 (26.3)	
Healthcare	27 (22.7)	25 (26.6)	35 (30.7)	
Public sector, not-for-profit	17 (22.7)	35 (37.2)	31 (27.2)	
Private sector, for profit	15 (12.6)	8 (8.5)	14 (12.3)	
Other, unknown	4 (3.4)	.	4 (3.5)	
Employer Size				0.642
Large	107 (89.9)	86 (91.5)	97 (85.1)	
Medium	7 (5.9)	5 (5.3)	11 (9.6)	
Small	5 (4.2)	3 (3.2)	6 (5.3)	
Work Activity (*N* = 302)	(n = 99)	(n = 90)	(n = 113)	0.705
Inactive	88 (73.9)	81.9 (91.0)	93 (81.6)	
Moderately inactive	7 (5.9)	6 (6.4)	15 (13.2)	
Moderately active	4 (3.4)	6 (6.4)	3 (2.6)	
Active	.	1 (1.1)	2 (1.8)	

[1] *p* values for ANOVA (age and tenure) and χ^2 test analysis (gender, condition severity, ethnicity, education, employer size, industry and work activity).

Table 4.4. ***Participants Self-Management Characteristics by LTC Group, Including Activation, Disclosure, Workplace Behaviours and Reasoning.***

Variable	All	Mental Health	MSK	Other	
	N	***N* %**	***N* %**	***N* %**	
Activation measure	307	113 (36.8)	92 (29.9)	102 (33.3)	
	***M* (SD)**	***M* (SD)**	***M* (SD)**	***M* (SD)**	***P*[1]**
Activation score	62.6	57.9 (14.1)	62.7 (13.5)	67.6 (15.1)	**0.001**
Range	29.0 - 91.7	33.0 - 91.7	35.5 - 91.7	29.0 - 91.7	
Activation Level (*N* = 307)	***N* (%)**	***N* (%)**	***N* (%)**	***N* (%)**	***P*[2]**
Level 1 - Passive	53 (17.3)	30 (26.5)	14 (15.2)	9 (8.82)	**0.001**
Level 2 - Becoming aware	48 (15.6)	22 (19.5)	15 (16.3)	11 (10.8)	
Level 3 - Taking action	118 (38.4)	43 (38.1)	37 (40.2)	38 (37.3)	
Level 4 - Maintaining behaviour	88 (28.7)	18 (15.9)	26 (28.3)	44 (43.1)	
LTC disclosure at work (*N* = 306):					***P*[2]**
Yes	274 (89.5)	98 (35.8)	85 (31.0)	91 (33.2)	0.409
No	32 (10.5)	15 (46.9)	7 (21.9)	10 (31.2)	
Self-management (in the past month):					
1. **Behaviour type:**	***M* (SD)**	***M* (SD)**	***M* (SD)**	***M* (SD)**	***P*[1]**
Managing fatigue/sleep	2.86 (1.36)	3.02 (1.31)	2.86 (1.29)	2.69 (1.39)	0.207
Taking a break/resting	2.87 (1.37)	2.87 (1.29)	3.12 (1.41)	2.64 (1.39)	0.055
Managing diet	2.93 (1.55)	2.96 (1.44)	2.97 (1.64)	2.88 (1.59)	0.913
Exercise/physical activity	2.40 (1.39)	2.58 (1.41)	2.49 (1.39)	2.13 (1.33)	**0.044**
Shortness of breath	1.38 (0.93)	1.42 (0.89)	1.46 (1.06)	1.28 (0.84)	0.351
Nausea and vomiting	1.19 (0.67)	1.19 (0.65)	1.23 (0.77)	1.14 (0.60)	0.645
Pain	2.30 (1.46)	1.82 (1.19)	3.46 (1.35)	1.80 (1.24)	**0.001**
Acute episode	1.36 (0.89)	1.45 (0.95)	1.50 (0.98)	1.13 (0.67)	**0.005**
Managing emotional aspects	2.20 (1.31)	2.76 (1.38)	2.08 (1.32)	1.68 (0.94)	**0.001**
Taking medication	3.23 (1.84)	3.30 (1.86)	3.16 (1.82)	3.23 (1.85)	0.867
Side effects of treatment	1.92 (1.44)	2.05 (1.55)	1.83 (1.37)	1.86 (1.39)	0.469
Mindfulness/meditation	1.75 (1.23)	2.07 (1.40)	1.52 (1.05)	1.37 (0.05)	**0.001**
Self-talk/CBT	1.69 (1.22)	2.12 (1.44)	1.52 (1.05)	1.37 (0.95)	**0.001**
Monitoring symptoms	1.46 (1.19)	1.33 (0.99)	1.25 (0.85)	1.79 (1.55)	**0.002**
2. **Reasons for not self-managing**:	***N***	***N* %**	***N* %**	***N* %**	***P*[2]**
Lack of time	149	57 (38.3)	50 (35.6)	42 (28.2)	**0.051**
Too much work	117	45 (38.5)	40 (40.9)	32 (27.4)	0.080
Avoiding attention	107	49 (47.8)	28 (21.2)	30 (28.0)	**0.042**
Job security	76	38 (49.9)	22 (28.9)	16 (15.9)	**0.005**
No facilities at work	62	28 (45.2)	18 (29.0)	16 (25.8)	0.181
Lack of support	58	28 (48.3)	20 (34.5)	10 (17.2)	**0.007**
No privacy	54	24 (44.4)	14 (29.9)	16 (29.6)	0.399
No facilities close to work	42	15 (35.7)	12 (28.6)	15 (35.7)	0.922
No storage	12	5 (41.7)	2 (16.6)	5 (41.7)	0.640

[1] *p* value for ANOVA. [2] χ^2 test analysis (dichotomised groups).

4.5.1 Hypothesis Testing Results

The Effect of LTC Status on Working Conditions, Support and Workability.

Hypothesis 1. Working conditions, workplace support and workability will differ between participants with and without LTCs.

To control for covariates and determine differences between participants with and without LTCs a ANCOVA was conducted. As initial tests comparing demographic variables showed significant differences in age, ethnicity, education and industry the variables were entered as covariates. The single item of the WAI was used to test current workability. Table 4.5 reports the results including the variables observed, estimated means, standard deviations and *p* values.

The analyses revealed significant differences between the groups in aspects of working conditions including: control [$F(1, 729) = 5.21$, $p = .023$], manager [$F(1, 729) = 14.2$, $p = .001$] and peer support [$F(1, 729) = 12.1$, $p = .001$] and change [$F(1, 729) = 5.18$, $p = .009$]. Other significant differences emerged in regard to current workability [$F(1, 730) = 58.9$, $p = .001$] and support [$F(1, 730) = 9.67$, $p = .002$]. Post hoc (Bonferroni) tests suggest that participants without LTCs perceive less work stress regarding control ($M = 3.70$) and job change ($M = 3.24$). Moreover participants without LTCs reported better manager ($M = 3.64$) and peer support ($M = 3.83$). Further tests suggest that participants without LTCs are more positive about current workability ($M = 8.31$) and have more workplace support ($M = 13.5$) compared to those with LTCs ($M = 11.7$).

Regarding the covariates a main effect of age on workability [$F(1, 730) = 24.4$, $p = .001$], job control [$F(1, 729) = 13.0$, $p = .001$] and role [$F(1, 729) = 24.7$, $p = .001$] was shown. Ethnicity had a main effect on manager support [$F(1, 729) = 5.74$, $p = .011$] and change [$F(1, 729) = 8.43$, $p = .004$]. Thus those of mixed British and mixed White (with and without LTCs) report better manager support and less change stressors, and older participants with LTCs report better workability, control and less role stressors. Industry was shown to have an effect on work demands [$F(1, 729) = 6.41$, $p = .012$] and control [$F(1, 729) = 9.96$, $p = .002$].

Table 4.5. ***ANCOVA Results for Working Conditions, Support and Current Workability for Participants With and Without LTCs.***

	Without LTC n = 409		With LTC n = 327		
Source of variance	**Observed Mean *(SD)***	**Adjusted Mean (SE)**	**Observed Mean *(SD)***	**Adjusted Mean (SE)**	***P***
Working conditions					
- *Demands*	1.97 (.73)[a]	1.97 (.04)	2.05 (.82)[a]	2.05 (.04)	.197
- *Control*	3.69 (.71)[c]	3.70 (.04)	3.59 (.76)[c]	3.59 (.04)	**.023**
- *Manager support*	3.63 (.87)[c]	3.64 (.04)	3.40 (.87)[b]	3.39 (.05)	**.001**
- *Peer support*	3.83 (.69)[c]	3.83 (.04)	3.65 (.79)[b]	3.64 (.04)	**.001**
- *Relationships*	2.98 (.50)[a]	2.97 (.03)	2.94 (.59)[a]	2.94 (.03)	.449
- *Role*	4.18 (.63)[b]	4.19 (.03)	4.13 (.69)[b]	4.11 (.04)	.087
- *Change*	3.23 (.85)[c]	3.24 (.04)	3.08 (.91)[c]	3.07 (.05)	**.009**
Support	13.4 (7.79)	13.5 (.38)	11.7 (7.68)	11.7 (.43)	**.002**
Current Workability	8.30 (1.45)	8.31 (.08)	7.40 (1.83)	7.42 (.09)	**.001**

Covariates: age, ethnicity, education and industry. HSE standard colour code: [a] Red, [b] Yellow, [c] Blue.

Differences in Self-Management Characteristics and Work Outcomes Between Participants with LTCs.

Hypothesis 2. Activation, self-efficacy, wellbeing, QoL, working conditions, workability and support will differ between participants with different types of LTCs.

To test hypothesis 2 an ANCOVA was conducted. Table 4.6 reports the results. After controlling for covariates, significant effects of LTC type on activation [$F(2, 301) = 5.25$, $p = 0.006$], wellbeing [$F(2, 321) = 8.18$, $p = 0.001$] and current workability [$F(2, 321) = 4.14$, $p = 0.017$] were revealed. Other effects on working conditions including demands [$F(2, 320) = 5.94$, $p = 0.003$], manager [$F(2, 320) = 4.83$, $p = 0.009$] and peer support [$F(2, 320) = 4.71$, $p = 0.010$], job role [$F(2, 320) = 3.04$, $p = 0.049$] and job change [$F(2, 320) = 3.85$, $p = 0.022$] were shown. Post hoc Bonferroni tests revealed differences in activation between participants with mental health and MSK LTCs ($p = 0.002$), and other LTC types ($p = 0.001$). Wellbeing differences were revealed between participants with mental health and MSK ($p = 0.002$) and other LTCs ($p = 0.001$), and in current workability between those with mental health and other LTCs ($p = 0.014$). Post hoc (Bonferroni) tests also showed that participants with mental health LTCs report less work demands ($p = 0.012$) and more stress related to job change ($p = 0.028$) and job role ($p = 0.049$) when compared to those affected by other

LTC types. Participants with MSK LTCs report less peer support (p = 0.008) and those with mental health LTCs less manager support (p = 0.008) when compared to participants with other LTC types.

Regarding the covariates, significant effects of gender on job control [F(1, 320) = 5.51, p = 0.019], role [F(1, 320) = 4.57, p = 0.033], and age on activation [F(1, 301) = 9.60, p = 0.002], self-efficacy [F(1, 321) = 7.57, p = 0.006], current workability [F(1,321) = 19.9, p = 0.001], job change [F(1, 320) = 6.04, p = 0.015] and job role [F(1, 320) = 17.5, p = 0.001] were shown. Condition severity was related to activation [F(1, 301) = 13.36, p = 0.001], self-efficacy [F(1, 321) = 28.7, p = 0.001], wellbeing [F(1, 321) = 31.56, p = 0.001], QoL [F(1, 321) = 37.7, p = 0.001], role [F(1, 321) = 31.56, p = 0.001], control [F(1, 320) = 3.91, p = 0.049], peer [F(1, 320) = 6.74, p = 0.010] and manager support [F(1, 320) = 4.20, p = 0.041], together with current [F(1, 321) = 28.6, p = 0.001] and future [F(1, 321) = 7.82, p = 0.005] workability.

Table 4.6. ***ANCOVA Results by LTC Group for Activation, Self-Efficacy, Wellbeing, QoL, Working Conditions, Workability and Support.***

	Mental health n = 119		**MSK** n = 94		***Other*** n = 114		
Source of variance	**Observed Mean *(SD)***	**Adjusted Mean (SE)**	**Observed Mean *(SD)***	**Adjusted Mean (SE)**	**Observed Mean *(SD)***	**Adjusted Mean (SE)**	***P***
Activation (n = 307)	57.9 (14.1)	59.7 (1.35)	62.7 (13.5)	62.2 (1.46)	67.6 (15.1)	66.1 (1.40)	**0.006**
Self-efficacy	5.85 (1.78)	6.07 (.15)	6.41 (1.79)	6.38 (.17)	6.68 (1.41)	6.48 (.15)	0.158
Wellbeing	5.05 (2.01)	5.42 (.16)	6.06 (1.76)	6.05 (.17)	6.27 (1.37)	6.07 (.16)	**0.001**
QoL	5.81 (1.96)	5.97 (.16)	6.30 (1.82)	6.32 (.18)	6.54 (1.59)	6.34 (.16)	0.234
Working conditions							
- *Demands*	2.19 (.89)[a]	2.16 (.08)	2.16 (.83)[a]	2.17 (.08)	1.80 (.66)[a]	1.83 (.08)	**0.003**
- *Control*	3.43 (.79)[b]	3.48 (.07)	3.62 (.73)[c]	3.61 (.08)	3.72 (.72)[c]	3.60 (.08)	0.118
- *Manager support*	3.20 (.85)[a]	3.25 (.08)	3.36 (.98)[b]	3.36 (.09)	3.64 (.74)[c]	3.81 (.07)	**0.009**
- *Peer support*	3.56 (.78)[a]	3.62 (.07)	3.48 (.92)[a]	3.48 (.08)	3.86 (.65)[c]	4.15 (.07)	**0.010**
- *Relationships*	3.02 (.65)[a]	3.02 (.06)	2.95 (.54)[a]	2.96 (.06)	2.84 (.57)[a]	2.84 (.06)	0.231
- *Role*	3.91 (.73)[a]	4.00(.06)	4.22 (.65)[c]	4.18 (.07)	4.27 (.62)[c]	4.22 (.06)	**0.049**
- *Change*	2.88 (.88)[b]	2.95 (.09)	3.04 (.97)[b]	3.01 (.09)	3.31 (.86)[d]	3.27 (.09)	**0.022**
Current workability	6.80 (1.87)	7.10 (.16)	7.44 (1.66)	7.35 (.17)	8.01 (1.73)	7.76 (.16)	**0.017**
Future workability	6.09 (1.77)	6.10 (.17)	5.72 (1.89)	5.78 (.19)	5.95 (1.78)	5.89 (.17)	0.535
Support	10.8 (7.45)	11.2 (.73)	11.6 (8.14)	11.6 (.79)	12.5 (7.49)	12.3 (.74)	0.864

Covariates: gender, age and LTC severity. HSE standard colour code: [a] Red, [b] Yellow, [c] Blue, [d] Green.

The Influence of Activation on Participants with LTCs Self-Efficacy, Wellbeing and Workability.

Hypothesis 3. Activation will be positively associated with participants self-efficacy to manage an LTC at work, wellbeing, current and future workability.

To test the association between activation and participant self-efficacy, wellbeing and workability, four regression analyses were undertaken adjusting for covariates of gender, age and LTC severity.

An initial correlation analysis explored relationships between the variables. The results are presented in Table 4.7. Except for future workability and gender, there were significant positive correlations between activation and all other study variables ranging between $r = .22$ and $r = .48$. A significant relationship between activation and self-efficacy ($r = .48$, $p < .001$), and wellbeing ($r = .44$ $p < .001$) and current workability ($r = .39$, $p < .001$) was shown. A significant correlation was found between self-efficacy and current workability ($r = .53$, $p < .001$).

Regarding the covariates, gender was not shown to be significantly associated ($r < .32$). Age was positively related to activation ($r = .22$, $p < .001$), self-efficacy ($r = .19$, $p < .001$) and current workability ($r = .28$, $p < .001$). Specifically, LTC severity was negatively correlated with activation ($r = -.25$, $p < .001$), self-efficacy ($r = -.31$, $p < .001$), wellbeing ($r = -.35$, $p < .001$), current ($r = -.32$, $p < .001$) and future ($r = -.15$, $p < .001$) workability.

Regression Analysis.

Four regression analyses were undertaken with activation as the independent variable and self-efficacy, wellbeing and current and future workability as dependent variables. After adjusting for covariates, activation was significantly associated with three of the dependent variables. Table 4.8 reports the results. A significant relationship was found between activation and self-efficacy [$F(4, 302) = 31.0$, $p = 0.001$] explaining 23% of the variation in self-efficacy (adjusted R^2 of .228). Participants self-efficacy increased 0.48 for each unit increase (+1) in activation. Activation was shown to be a significant predictor of participant wellbeing [$F(4, 302) = 19.5$, $p = 0.001$]. The model explained 19% of the variation in wellbeing (adjusted R^2 of .194) increasing 0.47 for each unit (+1) increase in activation. Finally, a significant relationship was found between activation and current workability [$F(4, 302) = 25.5$, $p = 0.001$] with the model explaining 24% of the variation (adjusted R^2 of .242). Participants current workability was predicted to increase 0.34 for each unit (+1) activation

change. A non-significant relationship with future workability was shown [$F(4, 305) = 1.57$, $p = 0.212$].

Regarding the covariates significant effects suggest that as participants LTC severity increases their self-efficacy ($p = 0.001$), wellbeing ($p = 0.001$) and current workability ($p = 0.001$) declines. Other significant effects of age on self-efficacy ($p = 0.036$), current ($p = 0.001$) and future ($p = 0.028$) workability indicate that both increase with age.

The Effect of Disclosure of an LTC on Key Self-Management Characteristics.

Hypothesis 4. Workers who have disclosed an LTC at work will be more activated, self-efficacious and supported.

An ANCOVA was conducted to explore differences in activation, self-efficacy and support between participants who had (or had not) disclosed their LTC at work. Age, gender and LTC severity were entered as covariates. The results are presented in Table 4.9. No significant group differences in activation [$F(1, 298) = .62$, $p = 0.43$] or self-efficacy [$F(1,301) = 1.86$, $p = 0.17$] was shown. A significant effect of disclosure on support [$F(1, 301) = 11.8$, $p = 0.001$] was revealed. Post hoc (Bonferroni) tests showed that workers who had not disclosed an LTC reported less workplace support ($p = 0.001$). Regarding covariates the effects of age was reiterated on activation [$F(1, 298) = 15.1$, $p = 0.001$], self-efficacy [$F(1, 301) = 12.2$, $p = 0.001$] and of LTC severity on activation [$F(1, 298) = 20.5$, $p = 0.001$], self-efficacy [$F(1, 301) = 30.8$, $p = 0.001$] and support [$F(1, 301) = 3.99$, $p = 0.047$].

Table 4.7. ***Correlations Among the Key Survey Study Variables.***

	M	*SD*	1	2	3	4	5	6	7	8
1. Gender	-	-	-							
2. Age	42.9	11.7	0.06	1						
3. LTC severity	1.94	.61	-0.06	-0.05	1					
4. Activation	62.6	14.8	-0.06	.22*	-.25*	1				
5. Self-efficacy	6.29	1.71	0.09	.19*	-.31*	.48*	1			
6. Wellbeing	5.83	1.80	0.03	.21*	-.35*	.44*	.52*	1		
7. Current workability	7.40	1.83	-0.05	.28*	-.32*	.39*	.53*	.51*	1	
8. Future workability	5.94	1.81	0.08	-0.08	-.15*	0.07	.22*	.22*	.29*	1

*Correlation is significant at the 0.01 level (2-tailed).

Table 4.8. ***Regression Analysis Results of Variables Predicting Self-Efficacy, Wellbeing and Workability.***

	Self-efficacy					Wellbeing					Current Workability					Future Workability				
Model	***B***	***SE B***	**β**	**t**	***P***	***B***	***SE B***	**β**	**t**	***P***	***B***	***SE B***	**β**	**t**	***P***	***B***	***SE B***	**β**	**t**	***P***
1 Activation Score	.06	.01	.48	9.49	**0.001**	.05	.01	.41	7.77	**0.001**	.05	.01	.39	7.55	**0.001**	.01	.01	.07	1.25	0.212
2 Activation Score	.05	.01	.41	7.91	**0.001**	.05	.01	.36	6.65	**0.001**	.03	.01	.29	5.44	**0.001**	.01	.07	.07	1.21	0.227
Gender	.36	.20	.09	1.81	0.07	.18	.23	.04	.79	0.43	-.30	.21	-.07	-1.46	0.15	.35	.24	.08	1.46	0.145
Age	.02	.01	.11	2.11	**0.036**	-.001	.01	-.02	-.28	0.78	.03	.01	.19	3.89	**0.001**	-.20	.01	-.13	-2.20	**0.028**
LTC severity	-.58	.14	-.21	-.4.17	**0.001**	-.60	.16	-.20	-3.72	**0.001**	-.69	.15	-.25	-4.82	**0.001**	-.36	.17	-.12	-2.13	**0.034**

Covariates: gender, age and LTC severity.

Table 4.9. ***ANCOVA Adjusted and Unadjusted Means by Disclosure Group for Activation, Self-Efficacy and Support.***

	Disclosed n = 274		**Non-disclosed** n = 32		
Source of variance	**Observed Mean (SD)**	**Adjusted Mean (SE)**	**Observed Mean (SD)**	**Adjusted Mean (SE)**	***P***
Activation	62.4 (14.4)	62.3 (.85)	63.5 (18.1)	64.3 (2.5)	0.43
Self-efficacy	6.28 (1.76)	6.27 (.09)	6.65(1.74)	6.69 (.29)	0.17
Support	12.2 (7.66)	12.2 (.46)	7.29 (7.06)	7.30 (1.35)	**0.001**

Covariates: gender, age and LTC severity.

4.5.2 Content Analysis Results

The results of the content analysis of the three free-text questions described in Section 4.4 are presented next.

Self-Management Confidence.

The first question asked participants to describe aspects of self-management they were unconfident about, and the second to comment about LTC aspects they might better self-manage at work. Taken together 176 participant comments were analysed for question 1 (n = 94) and question 2 (n = 82). A summary of the analysis results are presented in Table 4.10. Mostly (n = 46) participants indicated a lack of confidence about self-managing emotional aspects. For many (n = 30) this related to their own confidence about being open about an LTC (e.g., disclosing a condition) and the consequences of doing so, for example being believed, trusted or perceived as a burden. Participants (n = 38) also lacked confidence in self-managing practical aspects including job resources (e.g., workload) and environmental factors such as sedentary practices, as well as lifestyle factors such as getting rest, exercise and managing diet. A lack of confidence in self-managing medical aspects was also suggested including fitting medication regimes around work and dealing with symptoms. Work reasons for lacking self-management confidence were cited and mostly related to work demands. Regarding better self-management, practical aspects predominated (n = 53) and comments reflected better self-management of diet and working hours, reducing sedentary behaviour and increasing exercise. Twenty-three participants indicated that self-managing emotional aspects including managing stress, being open about an LTC and their seeking of support could improve. For a few, better self-management would entail securing a new job (n = 1), taking sick leave (n = 1) or minimising an LTC's symptoms by managing medical aspects (e.g., blood sugar levels) (n = 2).

Enhancing Workplace LTC Self-Management.

The third question asked participants to identify one change that would enhance their workplace LTC self-management. One hundred and forty-five comments were analysed. The results are presented in Table 4.11. Participants identified five core aspects of work and potential stressors that, if changed, could enhance their LTC self-management including: 1) work and job flexibility (n = 28); 2) better support (n = 19); 3) reduced job demands (n = 19); 4) reduced stigma (n = 14) and; 5) adaptable policies (n = 13) (e.g., flexible absence policies). Furthermore improved workplace LTC literacy (n = 11) plus a compassionate and caring approach (n = 10) was suggested to help. A small group (n = 5) described a need for more staff resources, improved job security (n = 3) and practical help (n = 9).

Table 4.10. ***Content Analysis Results and Representative Extracts Concerning Participants Self-Management Confidence and Aspects of LTC Self-Management Improvement.***

Diary Question		1. Aspects of health participants are unconfident about self-managing. *N** = 94		2. Aspects of LTC self-management participants with LTCs might look after better. *N* = 82
Category	**n**	**Extracts**	**n**	**Extracts**
Emotional	46	*ó I find ask for help and admit to cannot do things ô* *ó Confidence discussing it* *ó I feel guilty having to ô* *ó Sharing my condition to* *ó Lack of understanding how* *ó Disclosing my LTC ô and*	23	*ó If I chose to disclose manage. But then a again it may be worse ô .* *ó Getting stressed then ô. dri* *ó I need to talk more to colleagues and management ô .* *ó My emotional well being é I hav* *ó Working mostly helps to keep ô.*
Practical	38	*ó I am a specialist (medical my work if I was unavailable ô .* *ó The physical environ ô. men* *ó General depression caused sedentary job ô .* *ó Taking time off ô. for h* *ó é it is very difficult to say on the phone - 'I can't come to work because I'm too sad' is embarrassing*	53	*ó More autonomy about work ô. t* *ó Reducing my hours so that I move and stand more ô .* *ó Maybe work from home to reduce the impact of travelling on my joints ô .* *ó Diet é the food options pro ô. i* *ó I could take more breaks and impossible at the moment ô .* *ó Flexible hours to accommodate PTSD ô. e*
Medical	10	*ó Planning my day round* *ó Nausea is very difficu ô.* *ó Avoiding people at work so h*	2	*ó Generally have better blood affect me at work ô .*

**N* denotes the number of overall comments.

Table 4.11. ***Content Analysis Results and Representative Extracts Concerning One Change Identified by Participants to Enhance their Workplace LTC Self-Management.***

Change category	*N** = 145	
	n	**Extracts**
Flexibility	28	*óA more flexible approach to time*
Social support	19	*óBetter rapport with line manager*
Job demands	19	*óThe constant pressure on sales and*
Stigma	14	*óConsideration and respectful behav*
Policy	13	*óBeing able to take time off with*
LTC literacy	11	*óBigger focus on mental health in the*
Compassion & care	10	*óEmotional support and training for all colleagues*
Practical support	9	*óFacilities nearbyô.*
Empowerment	6	*óIn this job I am discouraged by my manage*
Resources	5	*óMore staff need to be employedéthe team have b*
Job role	4	*óFind another job, I feel that is my only hope, b*
Communication	4	*óManagement perceive and listen to concerns. Very rarely do they reply to your emails or queri*
Job security	3	*ócé we face discrimination...I have a new concern over job security as roles are being 'off -shored'.*

**N* denotes the number of overall comments.

4.6 Discussion

This analysis of a cross-sectional survey of a working population examined people's work, LTC and self-management characteristics. The findings contribute a number of novel findings to the workplace and LTC self-management literature. The analysis revealed that overall, workers with LTCs experienced work more adversely to those without conditions. Significant differences in work and self-management characteristics between the LTC groups were also highlighted and mostly with mental health. The association of activation with workers' self-efficacy, wellbeing and workability highlights new relationships between the activation concept, workers and work. The association of LTC disclosure with workplace support adds to the evidence linking the importance of disclosure of an LTC with support (Brohan et al., 2012; Munir et al., 2005b). The study's main findings and conclusions are discussed next.

Work Characteristics by LTC Status.

It was hypothesised (*hypothesis 1*) that working conditions, support resources (i.e., people to turn to at work) and workability will differ between workers with and without LTCs. The hypothesis was supported, and the findings provide new insight to the working conditions of workers with LTCs. The findings that workers without LTCs perceived significantly less stress about control and change in addition to reporting more workplace support (including better support from managers and colleagues), suggests that workers with LTCs are at greater risk of work stress. This strengthens the health and work literature by connecting LTCs with poorer working conditions and less workplace support. The job demand-control (Karasek, 1979) and extended demand-control-support model (otherwise known as ISO-model) (Johnson & Hall, 1988) are popular theories used to assess work stress. The ISO-model conceives social support to be a resource people draw on to reduce stress (Leka & Houdmont, 2010) including by increasing self-esteem to manage an LTC. Therefore inadequate support could heighten a person's vulnerability to stress. This might help explain why workers with LTCs perceived more stress and perhaps because they had less support resources to draw on. Although the findings cannot determine if the causal factors of greater stress was LTC or work related or a combination of both, this is a new insight to the stress perceptions of workers with LTCs. Yet on balance and for workers with and without LTCs, work demands and role were important stressors highlighted by the HSE indicator tool. Therefore, despite the association of LTCs with problems meeting work demands (Munir et al., 2005a), contrary to expectations the differences between the two groups was not significant. In fact, workers with and without LTCs were both highly stressed in this regard.

Work stress and LTCs can negatively affect people's workability (Habibi et al., 2014). In this study, workers with LTCs reported a reasonably high level of current workability (*M* = 7.45). However, in line with other research, this was lower than workers without LTCs which adds to the evidence for LTCs having burdensome work effects (Koolhaas et al., 2014). Whilst not everyone needs to meet the demands of an LTC, work stress can lead to poor health (Siegrist & Li, 2018) and restrict workability (Habibi et al., 2014). As work stress can worsen LTCs (Cooper & Cartwright, 1994) and add to an LTCs existing effects, the findings strengthen the case for employer support for workers with LTCs.

Work Characteristics by Long-Term Health Condition Group.

It was hypothesised that there would be differences in work characteristics including the HSE standards, workability and support between the three LTC groups (*hypothesis 2)*. The hypothesis was supported and stress emerged as a particular risk factor for mental health LTCs. Workers with mental health LTCs perceived more stress in five of the seven standards and significantly more regarding job role and change, compared to workers with MSK and other LTCs. Other significant differences showed that workers with mental health LTCs perceived less manager support compared to workers with other LTCs. People's experience of stress is influenced by their expectation and perceived control (Koolhaas et al., 2011). As mental health LTCs can impair cognition it could be that affected workers were less able to manage stress. Equally, as stress can be a symptom of a mental health LTC, it is feasible that workers were more stressed because they were less able to manage it.

In addition, significant differences in current workability showed that participants with mental health LTCs were less confident about their workability, compared to workers with MSK and other LTCs (albeit surprisingly more confident about future workability). Workplace studies associate low levels of support (particularly from managers) with low workability and poor mental health (Peters et al., 2019; Sugimura & Thériault, 2010). As poor work support can lead to stress (Johnson & Hall, 1988) which potentially undermines workability, this could help explain the between group differences in work characteristics discussed. Given support can buffer stress and promote LTC self-management (Gallant, 2003), this adds to the evidence for better workplace mental health support (Stevenson & Farmer, 2017).

In addition, differences in working conditions between the LTC groups indicated a complexity to the work stress workers experience. For example, workers with mental health LTCs perceived less stress about work demands compared to those affected by all other LTCs. Yet, compared to HSE benchmarks work demands was suggested to require urgent attention across all the LTC groups. Moreover, workers with MSK LTCs perceived more

stress about peer support compared to workers with other LTCs. While compared to HSE benchmarks urgent attention was recommended for both. Overall, the extent to which each standard (by LTC group) differed and the level of magnitude varied. These complexities raise questions about an employer's ability to meet diverse support needs. However, the HSE standards and content analysis's illustration of shared workplace stressors and barriers to self-management including inflexibility and manager support, highlight commonalities between workers with LTCs.

Long-Term Health Condition and Self-Management Characteristics.

It was hypothesised that there would be differences between the LTC groups in self-management characteristics including activation and self-efficacy (*hypothesis 2*). The hypothesis was partly supported, and the analysis showed significant differences in activation between workers with mental health LTCs and all other conditions. The study's overall mean average for activation was marginally lower (M = 62.6) but fairly consistent to that reported in other research featuring workers with LTCs (M = 67.7) (Harvey et al., 2009). However, while the majority of workers with LTCs were motivated to self-manage, a notable proportion were not. Over one-third of participants were passive, inactive or unconfident about self-managing which suggests that workplace support is important. Workers with mental health LTCs were least activated about self-managing an LTC at work. Unfortunately studies do not exist to directly compare activation by LTC but comparably to Munir et al (2009a), and despite the use of a different measure, self-efficacy was lowest for workers with mental health LTCs. Given in this study workers with mental health LTCs also perceived the most stress and their LTC more severely this again reinforces a need for workplace support for mental health LTCs. As workers with other LTCs were more activated, self-efficacious and reported better wellbeing, QoL and support, future research deciphering the reasons for LTC group differences could help identify support needs and inform interventions to motivate workers' self-management of different LTCs.

Support was found for *hypothesis 3* and activation was significantly associated with workers' self-efficacy, wellbeing and current workability. The findings fit with, extend and reinforce earlier studies suggesting positive associations between activation and self-efficacy (Stepleman et al., 2010), wellbeing (Peters et al., 2019) and work outcomes (Harvey et al., 2009). Most employers are interested in making sure that workers with LTCs are well and able to do their jobs. To help to achieve this, work interventions are needed to support LTC self-management. Whilst activation is most often used clinically to improve LTC outcomes (Hibbard & Gilburt, 2014) the workplace need not be excluded. Harvey et al (2009) proposed that activation could form part of more general workplace intervention programmes to help

improve workers' health. Measuring activation could help employers and OH better support workers engagement to self-manage and broaden workplace health and wellbeing offerings. Further studies should explore the practical and economic feasibility of employers supporting workers' LTC self-management via activation.

Key Personal and LTC Characteristics.

The study's analysis of covariates provides important insight to workers' characteristics. The significant negative relationships shown in *hypothesis 3* between LTC severity and activation, wellbeing, self-efficacy and workability suggests that an LTC's status (and its variability) should be accounted for in workplace support provisions. Increasing severity of an LTC can result in new symptoms and possible disabilities. As this can affect a person's ability to cope (Somers et al., 2010) and interfere with daily tasks, the findings are perhaps unsurprising. A severe LTC could cause a worker to question their capabilities (Jongen et al., 2014) in self-managing a symptom or disability they may not have mastery of, and affect their workability beliefs. Moreover, a more severe LTC (which feasibility could be complex) might not be effectively self-managed due to progressive disablement or lack of treatment options.

Therefore, it is not difficult to appreciate that not everyone will be confident about their ability to influence an LTC they might not have the knowledge, skills or confidence to self-manage and have little (or no) control of an health outcome. Using activation these findings add to existing evidence that worsening LTCs indicate greater self-management support needs (Van Houtum et al., 2013) and declining confidence. Given increasingly severe LTCs often entail workers needing more work support (e.g., modifications) and to which employers need to reasonably adjust, future research should account for LTC severity and condition trajectories.

In contrast to research suggesting self-care and work capability declines with age (Converso et al., 2018; Gleason et al., 2016), this study's findings suggest that activation, self-efficacy and workability increase with age. This corroborates with studies relating age to better self-care and self-management (Cameron et al., 2018; Munir et al., 2009b). Older workers might be more confident and not have greater self-management support needs because they are more experienced in self-managing an LTC due to an over-time acquisition of knowledge and practice. Alternatively, this could be evidence of the Healthy Worker Effect where older and sicker people are out of work (Buckley et al., 2015) thus excluded from this analysis. These findings present older workers with LTCs in a different light, as active agents in their own care and implies younger workers need more support. Therefore, as learning

vicariously is important to self-efficacy (Bandura, 1997), older workers with LTCs might help enhance younger peers' self-management confidence.

Disclosure.

Most participants had disclosed an LTC implying inclusivity in their workplaces. Whilst this is a similar finding to other studies (Varekamp & van Dijk, 2010), this study's analyses makes fairly clear that not everyone sensed this inclusivity at work. Workers with mental health LTCs reported avoiding attention and worrying about what people think and job security. In contrast to expectations (*hypothesis 4*) and though the differences were insignificant, workers who had non-disclosed an LTC were marginally more activated and self-efficacious. This raises questions about whether disclosure is beneficial. Disclosure can have important benefits and enable support access or it can make little difference to people's work lives (Gignac & Cao, 2009) or even undermine a person's self-management confidence. This could be due to stigma or discrimination resulting (or possibly anticipated) from disclosure (Brouwers et al., 2019; Stratton et al., 2018). Although it cannot be further commented on because of unmeasured factors (including stigmatising events), it is reasonable to assume that it may undermine a person's confidence to self-manage.

However, disclosure was related to having more people to turn to at work for support. This appears reasonable because although disclosure does not always lead to support it is the main way of accessing it (Munir et al., 2005b), and can enhance a person's awareness of the support available. Therefore, participants who had not disclosed might have less support simply because they did not need support at the time of the survey thus had not made themselves aware of it. Equally an employer might not raise awareness about available support where they do not perceive a worker needs to know. Nonetheless, as support can enable LTC self-management, minimise stress and was highlighted by participants as a reason for not self-managing and something to improve, increasing workers awareness and access to workplace support would be beneficial. Given the implication that disclosure can be beneficial or counterproductive, this warrants further investigation and later research should examine the outcomes of disclosure on workers' LTC self-management.

Limitations.

A number of study limitations should be considered. Firstly, the study's sample size was smaller than anticipated due to problems accessing organisations. This limits the findings generalisability. Challenges in securing employer interest to distribute the survey was experienced (e.g., due to conflicting with an engagement survey). Further data collection would be needed to test whether a different population of workers with LTCs are similarly

activated and confident about self-managing. Secondly, the project's cross-sectional nature means that the picture of workplace self-management presented might have changed due to variations in measured features. While the study's prime focus was to provide an insight to workers' LTC, work and self-management characteristics, just one opportunity to measure these was presented. This might not be representative or adequate to understand the complexities of workers self-management situations. Future research should examine workers' self-management over an extended period to unpick the relationships between LTC, self-management and work characteristics. Thirdly, data collection over such an extended period could have introduced variances unaccounted for meaning the findings are not representative. Specifically, the recruitment strategy meant that employers were recruited over more than one year from different industries. Therefore, differences affecting individual worker's self-management (but unknown to the researcher) could be unaccounted for including organisational and industry specific features e.g., ways of working, organisational changes etc. Also, later data collections used shortened survey versions (to encourage worker participation) creating problems in data management and comparability. Fourth, the analyses grouping together of a diverse range of other LTCs (e.g., neurological and digestive) and exclusion of comorbidities makes it difficult to attribute findings and support needs to specific LTCs, and limits their generalisability. Accounting for this and as LTCs were self-reported and not medically verified (by a GP), this might explain the *other* groups more favourable results. Lastly, workers were asked to rate their anxiety *yesterday* whereas other measures used present tense statements. Consequently, anxiety was omitted from analysis and in hindsight, a more suitable measure with a similar recall period should have been chosen to provide this insight.

4.7 Summary and Conclusion

This study aimed to identify the health, work and LTC self-management characteristics of workers. In sum, the findings present considerable new insight to a population of workers with LTCs who are (mostly) activated to self-manage. Whilst this suggests that many workers are engaged with self-managing it was also clear that others might benefit from employer support to look after an LTC. A considerable proportion of less activated workers, in particular those with mental health conditions, might benefit from employer support to acquire, maintain and enhance their self-management confidence and manage stress. To help identify, target and track workers' confidence and support needs, employers might consider using the well-established activation measure and HSE standards. In light of the evidence presented, the challenges faced by workers with mental health conditions (Stevenson & Farmer, 2017) and as people with LTCs are more likely to experience problems in working (Naylor et al., 2012), these findings strengthen (and possibly hasten)

the case for employer support for workers with LTCs. These findings allude to potential variability in workers LTCs and support needs. However, the generalisability of these data is limited by their cross-sectional nature. Further studies examining workers LTC self-management characteristics and behaviours over time are needed.

Chapter 5 – Study 2

5 The Nature of Workers Self-Management of Long-Term Health Conditions at Work Over Time: A 10 Week Diary Study

5.1 Introduction

This thesis aims to understand the self-management support needs of workers with LTCs. The Study 1 survey results in Chapter 4 showed that over one third of workers with LTCs were passive, inactive or unconfident about self-managing and that workers with LTCs are generally more work stressed than those without. Therefore, workers with LTCs could benefit from employer support. The association of worsening LTC severity with lower self-efficacy, activation and poorer wellbeing, coupled with conditions fluctuating features due to symptoms, progression and treatments (Beatty, 2012; Flurey et al., 2014; Lind et al., 2011; Nilsen & Elstad, 2009; Steadman et al., 2015; Thompson et al., 2019) suggests workers' support needs could change over time. Temporal complexities could make it difficult for employers to provide effective support and at the right time. Whilst it is known that workers with LTCs can fluctuate between illness and wellness (Boyd, 2012), time is neglected in workplace LTC self-management studies.

Studies recommend employers do more to support LTC self-management but as few explore it, they are unaware of how and when to intervene (Glasgow et al., 2008; Munir et al., 2009a; Pransky et al., 2014; Ruston et al., 2013; Shaw et al., 2013, 2014; Steadman et al., 2015; Summers et al., 2014). Studies point to psychosocial factors including confidence (Bandura, 1997), support (Gallant, 2003) and control (Hibbard & Gilburt, 2014) having motivating effects on workers' LTC self-management, and notably via work engagement (Shaw et al., 2014; Tveito et al., 2010). However, states are not fixed. People's self-management confidence can change in short time periods (Bandura, 1997) and behaviours can be episodic or continuous (Audulv, 2013). Therefore, the processes of self-managing an LTC are complex and changeable (Schulman-Green et al., 2012) with internal factors i.e., confidence and control beliefs, and external factors including support, interacting to determine people's engagement to self-manage. Still, there is little insight to the temporality of LTC self-management (Audulv et al., 2010; Burdforf, 2012). One systematic review, assessing changes in prostate cancer survivors self-management over time, reported the evidence was underdeveloped (Paterson et al., 2015). Certainly, a temporal insight to UK workers LTC self-management is unavailable and existing studies do not account for work engagement.

Workers' performance, mood and work engagement can change over time (Beal et al., 2005; Ohly et al., 2010; Xanthopoulou et al., 2012) and are affected by changeable factors including job demands (Sonnentag, 2011). Studies point to work engagement predicting work related wellbeing, motivating workers energy for job performance and is associated with workplace health behaviours and productivity (Bakker & Bal, 2010; Macleod & Clarke, 2009; Munir et al., 2015). Work engagement is a process in which workers feel (positively) engrossed and energised to undertake work by being dedicated and absorbed (Breevaart et al., 2014; Schaufeli, 2017; Xanthopoulou et al., 2012), and is affected by people's job and personal resources at the time including support and confidence (Bakker & Demerouti, 2007). Poor engagement is concerning for people with LTCs (Shaw et al., 2014; Tveito et al., 2010) and related to health limitations (Abma et al., 2013; Shaw et al., 2013).

Little is known about the work engagement of workers self-managing LTCs, or whether this fluctuates alongside condition changes. As engaged workers tend to be intrinsically motivated including being driven to undertake tasks for self-interest (Wake & Green, 2019), work engagement could motivate (or undermine) workers' LTC self-management. Veromaa et al (2017) highlight that research exploring the health enhancing benefits of work engagement are scarce. Existing workplace LTC self-management studies do not examine it. This study addresses this gap by including work engagement in examining workers LTC self-management.

Existing studies are limited by their cross-sectional or qualitative nature. Cross-sectional studies cannot determine relationships and qualitative studies are not intended to represent large populations (Sale et al., 2002), with both unable to examine the temporality of workers' LTC self-management (Heinrichs et al., 2018; Kennedy et al., 2007; Munir et al., 2009a; Ruston et al., 2013). Diaries are one way of collecting longitudinal data that captures behavioural and cognitive change (Breevaart et al., 2014). Diaries feature in work and health studies exploring support and stress (Pow et al., 2017), job strain and performance (De Gieter et al., 2018) and managing common health symptoms (Anwar et al., 2017). Specifically, diaries feature strongly in work engagement research (Breevaart et al., 2014; Breevaart & Bakker, 2017; Xanthopoulou et al., 2008, 2012). In one study and although people with LTCs were not sampled, workers general self-management (i.e., having control of your own behaviour) was reported to change over time and positively affect work engagement (Breevaart et al., 2014).

This study aimed to examine workers' LTC self-management over time. This adds to the diary study and work engagement literature with its novel LTC self-management focus. A sub-sample of Study 1 survey participants were invited to complete an online diary on their LTC, self-management and work characteristics and how these change over time. The study also examined whether changes in support, perceived control of an LTC and work engagement explained changes in worker's self-management confidence over time. Given the temporal nature of LTCs and call for employer support for fluctuating LTCs, a broad range of conditions were represented (Sayze, 2011; Steadman et al., 2015). To the researcher's knowledge this is the first workplace diary study of workers' LTC self-management.

Four of the wider eight project hypotheses were generated for the diary study:

5. Participants confidence to self-manage an LTC at work will change over time;
6. Changes in perceived control of an LTC will explain changes in self-management confidence over time;
7. Changes in support satisfaction will explain changes in self-management confidence over time;
8. Changes in work engagement will explain changes in self-management confidence over time.

5.2 Method

As the diary method is a way of examining temporal features, health and behaviours (and available remotely) an online diary was deemed a suitable data collection method. The study design is longitudinal where data was collected at six time points. An online diary was successfully used in a study examining the relationship between employees' general, rather than LTC, self-management (i.e., managing behaviours) and work engagement (Breevaart et al., 2013). Moreover, due to being online a larger geographical sample could be reached.

5.2.1 Design

A bespoke online diary was designed to capture changes in four areas: 1) health; 2) self-management; 3) self-management support; and 4) work outcomes. The diary was launched in February 2018. Participants were asked to complete one entry on the day the study opened (at baseline) and asked to make entries at two-week intervals on a Friday (or at the end of their working-week), within 2-3 days and over a 10-week period (the time schedule is shown in Figure 5.1). To promote participation, minimise participant burden and for ease of access to a geographically diverse group, the diary was designed and provided via an online platform called FlexMR.

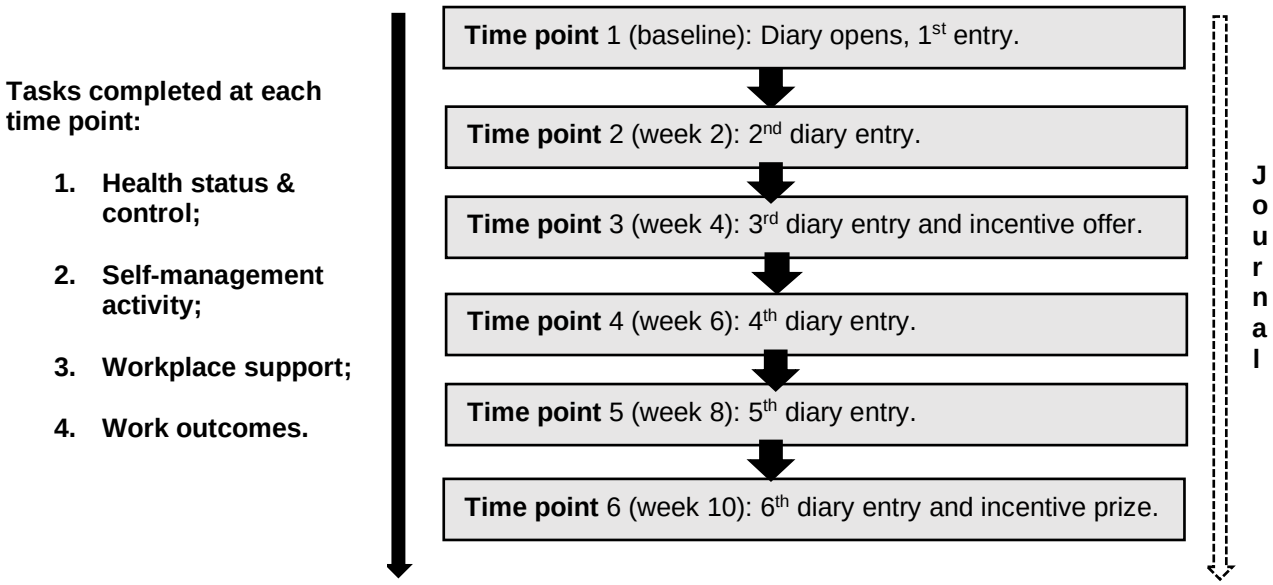


FIGURE 5.1. ***Overview of the Diary Study Time Schedule.***

5.3 Participants

All participants had initially taken part in the Study 1 survey (between February 2017 and January 2018) and had indicated an interest in participating in a diary study. Except for needing to have self-reported a medically diagnosed LTC the participation criteria was the same as for Study 1, and as presented in the overall methodology in Chapter 3 and the

survey methods section in Chapter 4. Thus, a purposive sampling approach was adopted, and 191 participants were identified who had indicated an interest in participating and provided their email contact details. Participants were then invited to participate via the diary's online platform and by registering online. Information about the study's aims were emailed by the researcher to participants and posted on the diary's homepage. Participants could contact the researcher via the online platform (FlexMR) or via a university email with questions at any point. Technical queries were directed to FlexMR via the online help option. Participants had provided consent to participate in the study in their survey response and asked to consent again via FlexMR when registering to participate.

5.4 Materials

To design the diary two online providers were tested and trialled by the researcher in 2017 (mEMA and FlexMR). FlexMR was selected due to its enhanced functionality, journal function and ease of coding. After receiving online and telephone-based training from FlexMR the researcher coded the hard copy diary onto the platform (see Appendix 8 and 9 for diary screen shots). The diary was piloted with three workers in a large professional services organisation to assess usability, understanding and to test the platform functionality. This resulted in the re-wording of one question before the online diary was finalised. Participants were able to complete diaries on either a laptop, hybrid, smartphone or other mobile application.

Diary studies use different reporting periods to other study types. One study examining self-management and work engagement used daily diaries over five-days (Breevaart et al., 2014). Another study exploring sexual behaviours reported weekly over two-weeks (Newcomb & Mustanski, 2014). Given the variation in reporting periods, this study's interest in temporal changes in LTCs, self-management and its work context, a daily or weekly diary was deemed too frequent. Short intervals might not capture changes that occur infrequently such as changes in LTCs or work engagement, and could interfere with participants job tasks. As it was impossible to forecast how participants LTC, work and psychological factors would change it was decided that a fortnightly reporting period and over an extended 10-week period was suitable. This was considered to achieve the best of both worlds to help capture short and longer-term changes.

FlexMR had two core functions: 1) a diary and 2) a journal. The study's diary was made up of four main parts entitled '*tasks*' and informed by a preliminary analysis of Study 1 data. The tasks asked participants about four areas including: 1) health and work; 2) self-management activities; 3) self-management support; and 4) work outcomes. When participants logged in,

they could see the tasks to be completed. Each task asked participants to respond to a series of questions. Each section included a free-text box for other comments. Once a task was completed and saved responses could not be changed. A function was not available to enforce completion.

The tasks and questions are described below and. except where highlighted, were designed by the researcher and informed by a preliminary analysis of Study 1 data. Except for the first task's question, participants were asked to complete all the questions in each task accounting for the *last working week*.

Diary Task 1 – Health and Work.

Participants perceived control of an LTC was measured using an adapted questionnaire (Van Kruijssen et al., 2015). Participants were asked to read the following statement: '*my assessment of the control I have of my health condition at work, in this diary on this day is*
Participants were then asked to indicate their assessment (using a traffic light graphic) marking red (low control) = 1, amber (moderate control) = 2 or green (high control) = 3 (shown in Appendix 9). Higher scores indicate more LTC control. Next, participants were asked to describe their health situation in the last week by marking with an X one of the following: *few or no health complaints = 1, some health complaints = 2,* or *many, frequent health complaints* = 3. Higher scores indicate more frequent health complaints. Finally, participants were asked to indicate using the study's Likert frequency scale (*none = 0, about one = 1, a few = 2, most = 3, daily = 4*) on how many days: 1) work had affected their LTC self-management; and 2) how often their LTC self-management had affected work. Higher scores indicate more interactive affects. Cronbach's Alpha for the two items was = .56. A free-text box then asked participants to comment about any interactions.

Diary Task 2 – Self-Management Activity.

Participants were asked to indicate (using the study's Likert scale) on how many days they had undertaken 14 self-management activities at work (e.g*., talking about an LTC).* The activities list was informed by the health literature and a discussion with three workers in a UK HR team experienced in supporting workers with LTCs. The internal consistency of the items was high = 91. Participants were also asked to provide details about their answers in a free-text box.

LTC Self-Management Confidence

To assess workers self-management confidence, the participants were asked to indicate how confident they had felt to undertake self-management activities at work on a 10-point

scale (0 being *ó n o t a t a* and 10 being *ó f d e a l t ô y*. The scale's alpha *a n t ô)* coefficient was high = .85. Participants were then asked to give reasons for their chosen confidence level in a free-text box.

Diary Task 3 – Self-Management Support.

To gain an insight to workers self-management support, participants were asked to indicate (using the study's Likert scale) on how many days they had received four types of support including: *practical* (e.g., time-off'), *psychosocial* (e.g., emotional), r*elational* (e.g., people asking how you are), and *vocational* (e.g., modifications). Cronbach's alpha for the scale was .55. To gain further insight participants were asked to describe their self-management support needs and support provided in a free-text box. Next, participants were asked to rate their satisfaction with the self-management support they had received using a 0-10 point scale, 0 being *ó v e r y d i* to 10 *ó t v i e s r f y i e s* Higher scale scores indicate more satisfaction with received support. Cronbach's alpha for the scale was = .71. Participants were then asked to provide reasons for their satisfaction level in a free-text box.

Diary Task 4 – Work Outcomes.

To assess participant work engagement an adapted version of the Utrecht 9-item measure of week-level work engagement was used (Breevaart et al., 2014; Schaufeli et al., 2006a). Work engagement is conceptualised with three dimensions as *ó a p o s i t i v e , f u l f i l l related state of mind that is characterised by vigour, dedication and absorption*,' (Schaufeli & Bakker, 2004 p.4) and features in many workplace studies (Breevaart et al., 2014; Munir et al., 2015; Pransky et al., 2014). Good reliability of the measure is reported (Schaufeli et al., 2006). In this study questions were transformed to shorter present tense statements. For example, '*I f e l t b u s t i n g* was transformed to '*I feel bursting with energy*'. Participants were asked to read the statements carefully and think about if they had felt that way in the past week. Using a seven-point scale (0 being '*n e v e r* to 6 being '*e v e r y d a y ô)* they were asked to indicate what best describes how frequently they had felt that way. Participants were asked to mark '0' if they had not felt that way. Scores are averaged and range from 0 to 6. Higher scores indicate better work engagement and can be categorised into *very low* (< 1.77), *low* (1.78 - 2.88), *moderate* (2.89 - 4.66), *high* (4.67 - 5.50) and *very high* (> 5.51). Cronbach's alpha for the measure ranged between 0.85 and 0.96. Finally, a one-item presenteeism measure assessed participants self-reported job productivity. This was adapted from and informed by Schultz, Chen and Edington's (2007) review of the literature and measures. Using a 10-point scale participants self-assessed their performance: '*using the scale, tell us what your self-assessment of your performance in your*

job is, in the last week (being '*worst performance*' and 10 '*best performance*'). Cronbach's alpha for the scale was = .89.

Online Journal Keeping.

To ensure participants could share experiences and feedback at any time, an online journal was made available. This was placed on the diary's home page next to the tasks and a calendar. Journal use was optional and participants were free to use it at any time between reporting intervals to share insights, comments and experiences.

5.5 Procedure

In January 2018 and via email, the researcher notified the 191 participants who had expressed an interest in taking part, of the upcoming 10-week diary study consisting of fortnightly entries. A detailed briefing sheet was included (see Appendix 10). Participants were reminded of their right to withdraw at any stage and of the study's voluntary nature. Participants had consented to participate in the diary study in their survey response and by registering themselves with FlexMR, and were unable to make entries if they had not done so. Participants were then prompted by email via FlexMR 24-hours in advance of each diary entry date and sent a reminder on the morning to complete their entry. Full guidance about how to complete the diary was provided each time with repeat details of who to contact with queries.

During the study and for confidentiality and data security reasons, all communications by the researcher to the participants were sent via the FlexMR platform with all information encrypted. To encourage sustained participation the researcher included a welcome statement on the platform at the study's launch, and a 'thank you' statement within a few days of each diary entry date. Participants who had partly completed diary entries or had not logged-on were sent email reminders at least once a week. For each journal entry participant comments were acknowledged (or responded to) via the online platform within one to two days by the researcher.

To sustain participation and retention over the study period, in week four, an ethical amendment was sought from Loughborough University and granted, to offer a prize incentive. Any participant who took part fully (by completing all four tasks) in the remaining four diaries of the study, were offered the opportunity to be entered into a draw to receive one of four £50 vouchers (as a thank you from Loughborough University).

5.6 Analysis

A combined quantitative and content analysis approach was taken. Statistical methods were used to analyse quantitative data. Methods included ANOVA, chi-square tests and unconditional growth modelling. Multi-level modelling (MLM) examined the study's four hypotheses including participants' confidence and work outcomes over the study period. For the qualitative data, content analysis was undertaken to describe participants' comments about their LTC and work interactions, self-management support needs, reasons for self-management confidence and support satisfaction.

Quantitative - Multi-level Modelling.

While other analyses are used to examine repeated measures data (e.g., ANOVA), MLM is specifically recommended for diary data analysis (Cartwright et al., 2012). Other approaches do not make use of all available data or account for hierarchical data structures. Multi-level modelling makes use of all data (Grund et al., 2018) and accounts for diary data's non-independent nature. Before the analysis initial checks assessed the data's suitability for MLM and showed that homogeneity of variance and linearity assumptions were met. The residuals were generally normally distributed thus MLM was deemed suitable. The data in this study is hierarchical with time-point measurements nested within workers. The study design led to a 2-level model with repeat time-points (T) at level 1 (n = 215) and participants at level 2 (n = 67). All the LTCs were analysed together. The study's sample size at level 2 was deemed adequate and MLM was considered as an appropriate way to analyse the data (Maas & Hox, 2005; Xanthopoulou et al., 2012; Stride, 2018)**.** The MLM was run on SPSS, Version 24 (IBM Corporation, 2016).

Analysis Procedure.

Prior to the analysis 'time' was centred to the study's start point T1. Initial analyses examined two models: 1) a null (otherwise known as unconditional) model; and 2) a covariate model checking for the effects of potentially confounding factors. The first (null) model was empty and contained no predictors and was used to estimate the variance in self-management confidence between persons (level 2). The second model examined the fixed effects of age and gender covariates. The two models are shown in Table 5.5 of the results section.

Separate models for each hypothesis were run. For *hypothesis 5,* to test for time variance across the whole sample, time (level 1) was entered as a fixed effect. To test for time variance between participants, time (level 2) was entered as a random effect into the model. For *hypotheses 6, 7* and *8* three separate models were run and, in each model, the

appropriate independent variable (IV) (support satisfaction, LTC control and work engagement) were first entered as fixed effects. A time interaction term (IV*TIME) was then added to each model. To assess improvements between the models fit a chi-square statistic was calculated using a maximum likelihood ratio (ML) calculation (Stride, 2018).

Content Analysis.

The diary's free-text questions (and journal) enabled participants to expand on their diary responses. A content analysis was conducted to identify and describe frequent concepts and patterns contained in the comments (n = 724) to four of the study's free-text questions concerning: 1) the interactions of health with work; 2) reasons for self-management confidence; 3) reasons for satisfaction with self-management support; and 4) self-management support needs. The analytic approach followed the process outlined by Elo & Kyngäs (2008) and as described in the survey Study 1 analysis section (see Chapter 4, Section 4.4, p. 74). This process comprised of three stages: 1) preparation, which identified units of analysis and made sense of the data. The researcher read all the comments and identified preliminary codes units of analysis (e.g., personal or work features); 2) organisation, in which the content was coded, categorised and abstracted. After the checking of coding units with an independent and experienced researcher (resulting in five revisions) the comments concerning health and work interactions were categorised under a Yellow Flag. This was taken from the Psychosocial Flags framework which forms the conceptual backdrop to this thesis (Buck et al., 2011; Kendall et al., 2009) (see Chapter 2, Section 2.3.3, p. 35 for an earlier presentation of the framework). For questions 2 and 3, participants reasons for self-management confidence and support satisfaction were categorised by yellow, blue and black Flags. For question 4, self-management support needs were classified by *instrumental, psychosocial* and *relational* categories taken from another LTC self-management study (Dwarswaard et al., 2016)*;* and 3) reporting of results. Results are reported under three generic headings: 1) health and work interactions; 2) self-management confidence and support satisfaction; and 3) self-management support needs. The headings along with their relevant schemes and categories are presented in Table 5.7 and discussed in four parts in section 5.7.2 of this chapter.

The study's optional journal supplemented the diary questions and enabled participants to share experiences freely. To analyse the entries (n = 32) the same content analysis process for the free-text questions was followed and similarly, the Psychosocial Flags categorised the entries. The journal analysis results are presented in Table 5.11.

5.7 Results

Sample, Participant Demographic and Health Characteristics.

Of the 191 workers invited to participate in the study 67 made at least one diary entry. FlexMR notified the researcher of three workers declining to participate (via the platform) and one worker notified the researcher directly by email. Reasons for non-participation included maternity leave and an LTC not considered to affect work. Overall, 215 diary days were obtained from workers with LTCs. Retention was monitored throughout the study. At the first time point (T1) 59 workers participated, and 39 participated in three or more. A reduced number (n = 11) participated fully in all six. Participants socio and health demographic characteristics were extracted from their Study 1 survey response are presented in Table 5.1.

A broad range of ages were represented from 20 - 69 years (*M* = 44.7, *SD* = 10.9). Most participants identified as female (n = 55), mixed British (n = 59) and degree educated (n = 42). The majority (n = 57) work in large organisations employing more than 500 workers. Public sector not-for-profit (including NHS hospital) workers were overrepresented (n = 44). Participants were mostly affected by mental health (n = 24) and MSK (n = 23) LTCs. Furthermore and similarly to the Study 1 sample, other types of LTCs (n = 20) were represented (listed in Table 5.2) and mainly workers with diabetes (n = 5). Chi-square (for categorical data) and analysis of variance (ANOVA for continuous data) tests showed no significant differences in demographic characteristics between participants with different LTCs.

In the Study 1, survey participants were asked to indicate what self-management activities they need to undertake by choosing '*yes*' to 14 behaviours (e.g., managing pain, seeking OH support, etc). To form a backdrop and contextualise this diary study's findings, the activities were examined (presented in Table 5.3). Based on the survey data, diary participants indicated needing to self-manage in similar ways. Few (n = 3) significant differences between the LTC groups in self-management activities were shown. Mostly, participants needed to self-manage medication (n = 48), monitor (n = 44) and respond (n = 37) to symptoms which could entail seeking medical e.g., GP support (n = 36). Managing lifestyle factors including diet (n = 32) and exercise (n = 31) was also important. More participants sought manager (n = 24), OH and EAP (n = 23) support or remote support from family and friends (n = 20) than from colleagues (n = 18). Expectedly, a larger proportion of participants with MSK conditions reported self-managing pain ($\chi^2(4) = 14.9$, $p = 0.005$). Comparably, more participants with mental health LTCs sought support from colleagues or

union representatives ($\chi^2(4) = 10.2$, $p = 0.037$) and patient support or charity groups ($\chi^2(4) = 11.6$, $p = 0.021$) than those with all other LTCs.

Table 5.1. ***Diary Study Participants Socio and Health Demographics.***

	All	**Mental Health**	**MSK**	**Other**	***P*[1]**
Variables	*N* = 67	*N* = 24	*N* = 23	*N* = 20	
	***M* (SD)**	***M* (SD)**	***M* (SD)**	***M* (SD)**	
Age (years)	44.7 (10.9)	40.9 (10.2)	47.4 (11.6)	46.1 (10.3)	0.09
Range	20 - 69	23 - 57	20 - 69	29 - 64	
Tenure (years)	8.16 (7.97)	7.33 (8.32)	8.57 (6.95)	8.70 (8.92)	0.82
Range	< 1 - 30	< 1 - 30	< 1 - 25	< 1 - 29	
Gender	***N* %**	***N* %**	***N* %**	***N* %**	0.83
Female	55 (82.1)	20 (83.3)	18 (78.3)	17 (84.2)	
Male	12 (17.9)	4 (16.7)	5 (21.7)	3 (10.5)	
Ethnicity					0.39
Mixed British	59 (88.1)	19 (79.1)	22 (95.7)	18 (90.0)	
Mixed White	5 (7.4)	3 (12.5)	.	2 (10.0)	
Asian, Indian, Chinese	2 (3.0)	1 (4.2)	1 (4.3)	.	
Unknown	1 (1.5)	1 (4.2)	.	.	
Education					0.87
Degree	42 (62.7)	15 (58.3)	16 (69.6)	11 (55.0)	
A level or equivalent	12 (17.9)	4 (16.7)	4 (17.4)	4 (20.0)	
GCSE or below	13 (19.4)	5 (20.9)	3 (13.0)	5 (25.0)	
Industry					0.41
Public sector, not for profit	24 (35.8)	7 (29.2)	10 (43.5)	7 (35.0)	
Healthcare incl. NHS	20 (29.9)	7 (29.2)	7 (30.4)	6 (30.0)	
Professional services, banking & finance	16 (23.9)	7 (29.2)	6 (26.1)	3 (15.0)	
Private sector, for profit	6 (9.0	2 (8.3)	.	4 (20.0)	
Other, unknown	1 (1.6)	1 (4.1)	.	.	
Employer Size					0.45
Large	57 (85.1)	19 (79.2)	20 (87.0)	18 (90.0)	
Medium	7 (10.4)	4 (16.7)	1 (4.3)	2 (10.0)	
Small	3 (4.5)	1 (4.1)	2 (8.7)	.	

[1] *P* values for ANOVA (age and tenure) and χ^2 test analysis (gender, ethnicity, education, industry and employer size).

Table 5.2. ***Other Types of LTC Affecting Diary Study Participants.***

	***N* %**
Other LTC Types:	20 (29.9)
¶ Diabetes:	5 (7.5)
- Type 1	2 (40.0)
- Type 2	2 (40.0)
- Type unknown	1 (20.0)
¶ Respiratory disease incl. COPD and asthma	3 (4.5)
¶ Cardiovascular disease	2 (3.0)
¶ Hypothyroidism	2 (3.0)
¶ Migraine	2 (3.0)
¶ Multiple sclerosis	2 (3.0)
¶ Cancer (cervical)	1 (1.5)
¶ Chronic fatigue syndrome (CFS)	1 (1.5)
¶ Crohn's disease	1 (1.5)
¶ Fibromyalgia	1 (1.5)

Table 5.3. ***Needed Self-Management Behaviours Reported by Diary Study Participants in the Study 1 Survey by Type of LTC.***

Self-management behaviour	**All** *N* = 67	**Mental Health** *N* = 24	**MSK** *N* = 23	**Other** *N* = 20	***P*[1]**
	***N* %**	***N* %**	***N* %**	***N* %**	
1. Managing medication	48 (71.6)	17 (35.4)	15 (31.3)	16 (33.3)	0.384
2. LTC self-monitoring	44 (57.9)	14 (31.8)	15 (34.1)	15 (34.1)	0.530
3. Responding to LTC symptoms	37 (55.2)	14 (37.8)	11 (29.7)	12 (32.4)	0.188
4. Managing diet	32 (47.8)	14 (43.8)	11 (34.4)	7 (21.9)	0.236
5. Taking exercise	31 (46.3)	12 (38.7)	11 (35.5)	8 (25.8)	0.585
6. Managing pain	29 (43.3)	6 (20.7)	14 (48.3)	9 (31.0)	**0.005**
7. Managing stress	25 (37.3)	10 (40.0)	7 (28.0)	8 (32.0)	0.311
8. Managing fatigue/rest	23 (34.3)	10 (43.5)	6 (26.1)	7 (30.4)	0.485
9. Seeking support at work from:					
¶ Manager or HR	24 (35.8)	9 (37.5)	9 (37.5)	6 (25.0)	0.782
¶ OH or EAP	23 (34.3)	10 (43.5)	7 (30.4)	6 (26.1)	0.685
¶ Remote from family/friends	20 (29.9)	8 (40.0)	8 (40.0)	4 (20.0)	0.704
¶ Colleague or Union	18 (26.9)	9 (50.0)	5 (27.8)	4 (22.2)	**0.037**
¶ Patient support or charity groups	8 (11.9)	4 (50.0)	3 (37.5)	1 (12.5)	**0.021**

[1] *P* values and ù analysis.

Quantitative Analysis Results.

Preliminary Analyses of *Study Variables.*

Table 5.4 presents the descriptive statistics and means (mostly representing days) for all study variables across the period and by time-point. The means for all time points together suggest that on average, participants experienced some health complaints (*M* = 1.89) with nearly two working days affected (*M* = 1.87 days) per week. Largely, moderate control of an LTC was reported (*M* = 2.17). On average work infrequently affected LTC self-management (*M* = 1.09) with self-management more often affecting work (*M* = 1.27). For both this was roughly once-a-week. Overall, self-management activities were undertaken infrequently across the period. Dietary (*M* = 2.83), exercise (*M* = 2.50) and practical self-management activities (*M* = 2.26) were most frequent and generally a few days a week. Stress was managed (*M* = 1.92) roughly once a week. Emotional (*M* = 0.49) and medical support (*M* = 0.18) self-management was occasional. The findings broadly corroborate with the lifestyle self-management activities reported in Study 1 including diet and exercise or responding to symptoms. On average participants self-management confidence across the period was fairly high (*M* = 7.42). Concerning self-management support, participants mostly received relational support and on average once a week (*M* = 1.10). On average participants were moderately work engaged (*M* = 3.08) but *low* engagement was shown at T4 (*M* = 2.39). To assess for over time change in the variables across the sample, separate unconditional growth models were run. The unconditional models contained no predictors and fitted for change over time. Time (level 1) was entered as a fixed effect for each variable (see section 5.6 for an earlier discussion of the analysis approach). Across the 10 diary tasks (measuring 27 characteristics) three significantly varied over time. Estimates showed that over the study period participants perceived LTC control increased (B = 0.06, SE = 0.02, *p* = 0.011) by 0.38 of a unit; the number of days work affected LTC self-management lessened (B = - 0.12, SE = 0.43, *p* = 0.006) by 0.73 of a unit; and work engagement decreased (B = - 0.07, SE = 0.03, *p* = 0.037) by 0.41 of a unit.

Table 5.4. ***Descriptive Health, Self-Management and Work Characteristics, Average Means for all Diary Study Variables Across the Study Period and by Time-point (T).***

	Part 1. Average Means (all time points)			Part 2. Average Means (by time point)						
				T1	**T2**	**T3**	**T4**	**T5**	**T6**	
Diary Tasks	***M***	***SD***	**Range**	(N = 59)	(N = 43)	(N = 40)	(N = 21)	(N = 30)	(N = 22)	***P*[1]**
Accounting for the last working week:										
1. Control of an LTC	2.17	0.67	1 - 3	1.97 (0.64)	2.23 (0.61)	2.03 (0.69)	2.38 (0.49)	2.43 (0.63)	2.27 (0.77)	**0.011**
2. Health situation	1.89	0.67	1 - 3	1.79 (0.61)	1.86 (0.68)	2.00 (0.72)	1.86 (0.57)	1.80 (0.76)	2.00 (0.76)	0.531
3. Number of days work affected self-management	1.09	1.16	0 - 4	1.44 (1.25	1.46 (1.28)	1.38 (1.23)	0.95 (1.12)	0.97 (0.36)	0.91 (0.87)	**0.006**
4. Number of days self-management affected work	1.27	1.18	0 - 4	1.18 (1.19)	1.14 (1.19)	1.23 (1.25)	0.62 (0.97)	0.93 (0.94)	1.14 (1.25)	0.243
5. Frequency of self-management behaviour(s):										
¶ Managing diet	2.83	1.31	0 - 4	2.89 (1.43)	2.71 (1.27)	2.85 (1.28)	3.05 (0.80)	3.03 (1.29)	2.30 (1.56)	0.562
¶ Taking exercise	2.50	1.27	0 - 4	2.37 (1.35)	2.24 (1.11)	2.56 (1.23)	2.76 (1.18)	2.83 (1.29)	2.25 (1.48)	0.227
¶ Seeking practical support	2.26	1.18	0 - 4	1.96 (1.37)	2.07 (1.25)	2.51 (1.02)	2.19 (1.12)	2.47 (1.14)	2.65 (0.75)	0.400
¶ Managing stress	1.92	1.48	0 - 4	1.79 (1.58)	2.09 (1.84)	2.13 (1.56)	1.81 (1.47)	1.83 (1.44)	1.70 (1.49)	0.888
¶ Managing/responding to symptoms e.g., pain	1.87	1.36	0 - 4	1.86 (1.43)	1.76 (1.32)	1.85 (1.20)	1.95 (1.36)	2.17 (1.49)	1.60 (1.43)	0.838
¶ Managing medication	1.74	1.73	0 - 4	1.76 (1.73)	1.88 (1.68)	1.64 (1.74)	1.81 (1.57)	1.90 (1.94)	1.30 (1.78)	0.384
¶ Adjusting work	1.67	1.32	0 - 4	1.53 (1.43)	1.56 (1.43)	1.77 (1.13)	1.48 (1.12)	1.83 (1.29)	1.85 (1.49)	0.279
¶ Undertaking self-talk	1.23	1.49	0 - 4	1.42 (1.39)	1.22 (1.57)	1.31 (1.47)	1.24 (1.64)	1.37 (1.65)	1.10 (1.37)	0.487
¶ Talking about an LTC	1.08	1.05	0 - 4	1.14 (1.04)	0.95 (0.97)	0.97 (1.16)	1.14 (0.73)	1.33 (1.29)	0.90 (0.85)	0.863
¶ Getting rest	0.95	1.22	0 - 4	1.02 (1.39)	1.05 (1.32)	0.97 (1.18)	0.71 (1.01)	1.03 (1.19)	0.60 (0.82)	0.068
¶ Seeking emotional support	0.49	0.79	0 - 4	0.45 (0.77)	0.46 (0.71)	0.64 (0.96)	0.52 (0.75)	0.53 (0.89)	0.30 (0.57)	0.853
¶ Seeking external support	0.54	0.99	0 - 4	0.55 (0.91)	0.61 (1.07)	0.64 (1.20)	0.29 (0.56)	0.70 (1.15)	0.20 (0.52)	0.193
¶ Seeking medical support	0.18	0.56	0 - 4	0.16 (0.47)	0.19 (0.60)	0.26 (0.75)	0.14 (0.36)	0.20 (0.61)	0.05 (0.22)	0.341
6. Self-management confidence scale	7.42	2.66	0 - 10	7.22 (2.85)	7.38 (2.54)	7.03 (2.72)	8.10 (2.21)	8.20 (2.37)	6.90 (2.99)	0.510
7. Number of days support received:										

	Part 1. Average Means (all time points)			Part 2. Average Means (by time point)						
Diary Tasks	***M***	***SD***	**Range**	**T1** (N = 59)	**T2** (N = 43)	**T3** (N = 40)	**T4** (N = 21)	**T5** (N = 30)	**T6** (N = 22)	***P*[1]**
¶ Relational	1.10	1.19	0 - 4	1.23 (1.14)	1.02 (1.06)	1.29 (1.39)	1.05 (1.16)	0.80 (0.99)	1.17 (1.54)	0.428
¶ Practical	0.53	0.89	0 - 4	0.68 (0.98)	0.46 (0.67)	0.56 (0.89)	0.52 (1.12)	0.43 (0.89)	0.44 (0.86)	0.286
¶ Vocational	0.45	0.97	0 - 4	0.36 (0.76)	0.37 (0.86)	0.68 (1.14)	0.52 (1.12)	0.37 (1.03)	0.44 (1.04)	0.447
¶ Psychosocial	0.17	1.56	0 - 4	0.21 (0.72)	0.22 (0.69)	0.13 (0.41)	0.14 (0.36)	0.17 (0.46)	0.11 (0.32)	0.592
8. Self-management support satisfaction scale	6.58	2.11	0 - 10	6.38 (3.48)	5.97 (3.70)	6.19 (3.51)	7.53 (2.76)	7.44 (2.63)	6.53 (2.97)	0.228
9. Work engagement scale	3.08	1.11	0 - 6	3.37 (1.02)	3.11 (1.01)	3.03 (1.17)	2.39 (1.44)	3.13 (1.06)	3.07 (0.86)	**0.037**
10. Self-assessed performance scale	6.58	2.11	1 - 10	6.67 (1.85)	6.60 (1.97)	6.64 (2.31)	5.90 (2.62)	7.13 (1.79)	6.06 (2.31)	0.691

[1]*P* values for the fixed effect (FE) of time growth modelling.

5.7.1 Hypothesis Testing Results

Participants LTC Self-Management Confidence Over Time.

This section presents the MLM analysis of the study's hypotheses.

Null and Covariate Models.

The null model (Table 5.5) showed that participants average self-management confidence across the time points (level 1) was 7.38 suggesting a reasonably high degree of self-management confidence. The model's variance term was significant (B = 7.38, SE = 0.24, *p* = 0.001). The results suggest that 20% [1.44/(5.62 + 1.44)] of the variance in self-management confidence is explained by differences between participants (level 2). Next, the effects of covariates of age and gender (female = 1, male = 2) were checked by entering them as predictors. No significant associations were observed with age (B = 0.02, SE = 0.02, *p* = 0.30) or gender (B = 0.12, SE = 0.64, *p* = 0.85) thus the covariates were removed from further modelling.

Table 5.5. ***Coefficients from the Null and Covariate Models.***

	Null Model (no predictors)		**Covariate Model** (confounding factors)	
Variables	**Estimate**	**SE**	**Estimate**	**SE**
Intercept	7.38	0.24	6.22	1.19
Age			0.02	0.02
Gender			0.11	0.66
2 x log		956.9		955.8
ὼ				1.1
Level 1 (time) variance	5.62	0.65	5.67	0.66
Level 2 (person) variance	1.44	0.62	1.29	0.61

* *P* < .001.

Hypothesis 5. Participants confidence to self-manage an LTC at work will change over time.

The estimates from the MLM of *hypothesis 5* are presented in Table 5.6. To model for change over time, time was added as a main effect (also reported in Table 5.4). This addition did not improve the model fit with -2LL slightly increased (+0.6). The estimated

starting level of self-management confidence and growth rate for the sample was 7.25 and 0.07 respectively. The fixed effect of time was positive but not significant (B = 0.07, SE = 0.10, *p* = 0.51). Given the negligible increase *hypothesis 5* is not supported, participants self-management confidence did not significantly change over the study period. However, the model's level 2 variance terms indicated significant variability between participants (B = 1.43, SE = 0.62, *p* = 0.02). When time was added as a random effect -2LL (-18.8) was reduced and the model fit improved by 35% [(5.64 - 3.69)/5.62]. The variation in the growth model between participants was significant (B = 0.54, SE = 0.19, *p* = 0.005) suggesting considerable variability in self-management confidence between participants (level 2) over time (level 1).

To test *hypothesis 6, 7* and *8*, the RE and FE growth models were rerun with the relevant IV for each hypothesis added as a main effect followed by the time*IV interaction term. The results of the three analyses are presented in Table 5.6.

Hypothesis 6. Changes in support satisfaction will explain changes in self-management confidence over time.

To test *hypothesis 6*, the addition of the main effect of support satisfaction substantially improved the model fit (χ^2= 145.7, df = 1, *p* = 0.001). Support satisfaction explained 6% of the variance [(3.69 - 3.32)/5.62] though did not significantly affect participants self-management confidence (*p* = 0.61). Next and to test whether between-person changes in self-management confidence over time were affected by support satisfaction, an interaction term (support satisfaction*time) was added. Although the model fit was improved (χ^2= 10.2, df = 1, *p* = 0.001) the interaction did not help explain change between participants over the study period (*p* = 0.33).

Hypothesis 7. Changes in perceived control of an LTC will explain changes in self-management confidence over time.

For *hypothesis 7*, the addition of control as a fixed effect slightly improved the fit (χ^2= 0.4, df = 1, *p* = 0.53). Control was not significantly associated with participants self-management confidence (*p* = 0.83) and explained no further between-person variation [(3.69 - 3.68)/5.62]. Furthermore, when the interaction term (control*time) was added to help explain between-person changes in confidence over time, no significant interaction (*p* = 0.62) was found.

Hypotheses 6 and *7* are therefore not supported as the results show changes in self-management confidence over time are not explained by participants satisfaction with self-management support or their perceived control of an LTC.

Hypothesis 8. Changes in work engagement will explain changes in self-management confidence over time.

For *hypothesis 8*, work engagement was first added as a fixed effect. The model fit was substantially improved ($\grave{\omega}\partial$ = 149.7, df = 1, p = 0.001), explaining 31% [(3.68 - 1.95)/5.62] of between-person variation. Work engagement had a significant [F(1, 54) = 2.56, p = 0.001] main effect on participants self-management confidence. Lower levels of work engagement were associated with lower self-management confidence. Finally, the addition of the engagement*time interaction further improved the model fit ($\grave{\omega}\partial$ = 40.9, df = 1, p = 0.001). The interaction term was significant (p = 0.027) with 9% [(1.95 - 1.47)/5.62] further variation explained. The results show that work engagement had an effect on participants self-management confidence [F(1, 54) = 1.69, p = 0.027] with significant variation in the growth model between participants (p = 0.006). Overall, the results suggest that the changes in participants self-management confidence over the study period related to their work engagement. *Hypothesis 8* was supported.

Table 5.6. ***Hypothesis 5, 6, 7 and 8 MLM's: Assessing Changes in Participants Self-Management Confidence and Variations between Persons Over Time (Hypothesis 5) and Differences in Change Over Time of Participants Self-Management Confidence from Support Satisfaction (Hypothesis 6), LTC Control (Hypothesis 7) and Work Engagement (Hypothesis 8).***

	Hypothesis 5				**Hypothesis 6**				**Hypothesis 7**				**Hypothesis 8**			
	FE[a] Growth Model		RE[b] Growth Model		(Satisfaction FE[a])		(Satisfaction*time)		(LTC control FE[a])		(LTC control* time)		(Engagement FE[a])		(Engagement*time)	
Variables	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**	**Estimate**	**SE**
Intercept	7.25	0.31	7.28	0.37	7.29	0.50	7.51	0.62	7.40	0.48	7.03	0.63	8.58	1.64	7.78	2.67
Time (fixed)	0.07	0.10	0.04	0.14	-0.01	0.16	-0.12	0.24	0.33	0.14	0.18	0.21	0.22	0.16	-2.00	0.95
2 x log		956.4		937.6		791.9		781.7		937.2		936.3		787.9		747.0
ώ		0.5		18.8*		145.7*		10.2*		0.4		0.9		149.7*		40.9*
Level 1 (time)	5.61	0.65	3.69	0.51	3.32	0.52	3.19	0.51	3.68	0.51	3.70	0.52	1.95	0.29	1.47	0.25
Level 2 (person)	1.43	0.62	4.83	1.44	4.66	1.49	4.35	1.44	4.89	1.47	4.78	1.44	3.83	1.19	2.94	0.92

*$P < .001$. [a] *FE = fixed effect.* [b] RE = *random effect.*

5.7.2 Content Analysis Results

This section presents the results of the content analysis of four free-text question's comments (n = 724). The number of comments made for each question over the period ranged from 165 to 214. The headings, schemes and categories from the analysis (taken from the underpinning Psychosocial Flags framework and Dwarswaard et al 2016) are summarised in Table 5.7. The results discussed in this section include exemplary extracts and is in three parts encompassing: 1) the interactions between health and work; 2) reasons for levels of self-management confidence and support satisfaction; and 3) the types of self-management support participants needed. The results of the journal analysis are presented at the end in Part 4. To further contextualise the findings exemplar extracts include participant's LTC.

Table 5.7. ***Summary of Content Analysis Headings, Schemes and Categories.***

	Heading	*N**	Scheme of Categorisation		Categories
1.	**Health and work interactions.**	214	Relations between health and work.	¶	Yellow Flag.
2.	**Self-management confidence and support.**	171, 174	Reasons for levels of confidence and satisfaction.	¶	Yellow, blue & black Flags.
3.	**Self-management support needs.**	165	Types of support needed.	¶	Relational, psychosocial, instrumental.
4.	**Journal.**	32	Real-time experiences.	¶	Yellow, blue & black Flags.

**N denotes overall number of comments*.

Part 1: Interactions of Participants Health and Work.

Participants were asked to describe the ways in which their health (LTC) interacted with work (during the weekly reporting period). The interactions described are summarised in Table 5.8. Comments suggest that different LTCs interact with work differently and most of the interactions mentioned were detrimental. Comments mainly related to the work effects of physical symptoms (e.g., pain and fatigue) (n = 116). The findings link the demands of physical symptoms (where they interfere with people's ability to do their job) with emotional effects by impairing concentration, energy, mood and possibly a person's ability to attend work. Comments about the effect of fatigue on work was pronounced (n = 95). Participants

related fatigue to an LTCs symptoms (e.g., anxiety impairing decision making speed and energy), and pain distracting people from work. While comments about stress, anxiety and depression, mood and concentration were made by participants with all LTC types, they were more pronounced for mental health LTCs. Overall, physical manifestations of LTCs were indicated as key obstacles to working productively. Interactions relating to stress, anxiety and depression (n = 40) wherein symptoms could be aggravated by work (e.g., due to work stress), or could undermine work by getting in the way by causing workers difficulty in decision-making, were also found. Whereas other comments suggest a more practical relationship between LTCs and work such as needing to practically be off sick. Overall, the analysis indicates a complex and variable relationship between LTCs and work.

Part 2: Reasons for Participants Confidence to Self-manage and Satisfaction with Self-management Support.

Participants were asked to give reasons for their self-management confidence and satisfaction with support. The analysis results are summarised in Table 5.9. In both sets of comments (n = 345) yellow Flag (personal) factors were predominately described as promoting or undermining people's self-management confidence (n = 140) and support satisfaction (n = 99). In particular, having self-confidence and knowing what to do influenced people's ability and permission to self-manage. Aspects of work (blue Flags) including support from managers and colleagues, was suggested to affect personal factors including people's self-permission and abilities to self-manage at work. Manager support was strongly suggested to promote confidence and satisfaction by enabling self-management. Other blue (including modifications, workload and time demands) and black Flag factors (including leadership messaging) had an effect by enhancing or undermining LTC self-management and support satisfaction. However, other comments showed workers as knowledgeable and able to independently self-manage without workplace support. Multiple factors affect workers confidence and support satisfaction but mainly those regarding flexibility and freedom to self-manage. Ultimately, this seems to rest on manager support which is believed to be influenced by broader organisational messaging.

Part 3: Participants Self-Management Support Needs.

The analysis results of the self-management support needs described by participants are presented in Table 5.10. Instrumental support was identified as a main support need and comments (n = 96) largely related to modifications for flexibility to enable self-management (e.g., rest breaks) and non-work accommodations such as being able to attend medical appointments. Comments inferred that leeway (i.e., the freedom to adjust work to symptoms without formal permission) as much as formal modifications (achieved via work policies) is

beneficial. Tangible forms of instrumental support such as a chair modification, were more apparent for participants with MSK LTCs and those potentially affecting people's ability to move around the workplace. The need for emotional and social support (categorised together as *relational support*) was fairly pronounced (n = 53). Participants reported wanting emotional support both from colleagues and managers for instrumental, relational and psychosocial aspects. Moreover, psychosocial features including work demands, pressure and trust were highlighted as important support needs (n = 22). Overall, managers were repeatedly mentioned in comments, inferring that they have an important role in LTC self-management support. In contrast, other comments over the study period indicated that no self-management support was needed in the week. Sometimes this was because participants felt support was not needed, were capable of self-managing and able to support themselves. For one participant support was not needed due to non-disclosure inhibiting their ability to access support.

Part 4. Content Analysis Results ï Journal.

Over the study period 17 participants made 32 journal entries which supplement the main analyses. The LTC distribution was: mental health (n = 7); MSK (n = 7); and other LTCs (n = 3) including cardiovascular disease (n = 1), migraine (n = 1) and chronic fatigue syndrome (n = 1). The results are presented in Table 5.11 with exemplar extracts. Entries mainly relate to personal (yellow Flag) factors (n = 17) and their work interactions (e.g., due to worsening symptoms or disclosure). Occupational aspects (black Flags) were also cited (n = 9) with relationship tensions, leadership messaging, behaviours and performance management inferred as pressurising. In addition, some participants highlighted job insecurity. Journal comments about work (blue Flags) were less frequent (n = 6) and mostly described work demands and job task activities. Positive work effects were also indicted including talking with colleagues and feeling supported to lessen demands and some shared positive work experiences (e.g., being pleased to attend work).

Table 5.8. ***Content Analysis Results and Representative Extracts Concerning the Interaction of Participants' Health and Work Over the Diary Study Period.***

Diary Task	**Health and work interactions** *N** = 214	
Psychosocial Flag **Yellow** – personal	**n**	**Extracts**
Physical symptoms	116	*ô My arthritis has been flaring* MSK. *u*
		ô Migraine on day 2 made it difficult to take instructionsô Migraine.
		ó Made mistakes because I ôm unab *and feels like I work at a slower paceô* Mental health.
		ó I've been unable to resô MSK. *o r*
		ó Tiredness and painô Multiple sclerosis. *bi*
Fatigue	95	*ó I am continually tired, and fi* *concentration span remains shortô* Mental health.
		ó é some anxiety and paranoia wil *were reasonably good, when I felt fatigue I restedô* Mental health.
		ó I have been unusually tired fo *work from home on one dayô* Multiple sclerosis.
		ó I wasn't able to work Monday, *this week. My fatigue has been really badô* MSK.
Stress, anxiety and depression	40	*ó é stressed by work whiôh has* MSK.
		ó Severe stress has meant Mental health. *c*
		ô I have been stressed due to a office moveô Cardiovascular disease.
Concentration	40	*ó Tired, preoccupied, poor focus ô* Mental health.
		ó Finding it difficult to focus Chronic fatigue.
Mood	21	*ó I am easily irritated and when* *things do not go to plan.ô* Mental health.
		ó My health does per se - my health affects my w *mood, which affects my attitude to workô* MSK.
		ó I am more aggressive at work, *personally and react instead of taking a step backô* Mental health.
Sick leave	8	*ó I have had to work as my health condition has* *made getting out of bed in time not possibleô* MSK.
		ô Flare up has caused me to take most of the week offô Multiple sclerosis.
Medication	3	*ó My Dr has changed my medicatio* *that kicks in soonô* Mental health.

**N* denotes number of overall comments.

Table 5.9. ***Content Analysis Results and Representative Extracts Concerning Participants Reasons for Self-Management Confidence and Satisfaction with Self-Management Support.***

Diary Task	**Reasons for participants confidence to self-manage** N* = 171		**Reasons for participants support satisfaction.** N = 174	
Psychosocial Flag	**n**	**Extracts**	**n**	**Extracts**
Yellow – personal.	140	*ó I don't have the confi health problemô* Mental health. *ó I am confident - in u managementé I have been doing this for yearsô .* Multiple sclerosis. *ó I finally called ô Mental health.t*	99	*'I try not to ask for help and keep my health problems to myself. I donôt want to be a bit anyo* Mental health. *'I only have to ask, but that is the difficult bitô* Respiratory LTC. *ó I have been in this job for multiple sclerosis. People know me, they have gotten used to what I now needô* Multiple sclerosis.
Blue – work.	76	*'Understanding managers and flexible working make it easier to self-manage ô* Mental health. *'I am able to control my diary and delegate some tasksô* Diabetes. *ó I ôm enabled to make the adjustments that ne* MSK. *ó Felt guilty about what doô* Respiratory LTC.	86	*'Not interested when deadlines need to be metô* Mental health. *ó My manager tries to understand* MSK. *ó é I was not asked by my manage how my hospital appointment wentô* Mental health. *My manager was very supportive - but slightly "put out" at having to cover for meô* Hyperthyroidism. *'My manager has been supportive in regard to my needs and understands I need time to manage my painô* MSK.
Black – occupational.	47	*ó My employers have flexibility to self-manage and attend physioô* MSK. *ó I doubt discussing men idea, although it is encouragedô* Mental health. *'Freedom of working from home ô* Mental health.	27	*ó I do not need to have I need to h work for an organisation that staff to provide that off their own backsô* Mental health. *ó OH calls every couple of mon my backô* MSK.

**N* denotes the number of overall comments.

Table 5.10. ***Content Analysis Results and Representative Extracts Concerning Types of Self-Management Support Needs.***

Diary	**Types of workplace self-management support needs.**	
Question	N* = 165	
Category	**n**	**Extracts**
Instrumental	96	*ó Working at home, flexible hours. I am very grat* ô Mental health. *ó I needed to work from home like normal as I need to be a* ô MSK. *ó I have needed practical support to be at the end doctor ô s* ô Mental health. *ó Access to the quiet room to be screen from a bou* ô Multiple sclerosis. *ó I needed practical support ô s. I've been havi* ô MSK. *ó Attended a PIP as sitted to claim disability leave* ô MSK.
Relational	53	*ó I needed emotional and relational support as I ô s* ô MSK. *ó I need support managing and organising a new place as my manager is not the ha* *support in alternative places as my manager is not the supportive kind as he does not relate easily with people* ô Mental health. *ó I have had relational support from colleagues who* ô Mental health. *ó My Manager comes. A listening ear to help me reflect and feel less stressed* ô Mental health.
Psychosocial	22	*ó What I need is a workplace and systems that do not place. It doesn't need to be completely stress free, just less pressure* ô Mental health. *ó Pressure comes when managers go the extra mile ô Mental health.* *ó I am trusted to do what is needed to keep my self-mental health.* *ó Discussion of workload with service manag* ô Diabetes. *ó Picking tasks to ones that are LTC. I can't as mentall* ô Respiratory LTC.

**N* denotes the number of overall comments.

Table 5.11. ***Content Analysis Results of Participant Journal Entries.***

	Journal entry *N** = 32	
Psychosocial Flag	**n**	**Extracts**
Yellow – personal.	17	ó*Qu s e e e l o w e r b a c k p a i n t h i s w e e k , h i p s .* MSK *v e f e l* ó *I c h a n g e d t h i n g s a r o u n d , p u t m y s e l f a n d n e e d s f i r s t a* *me feel better, but I know it will help my e n e r g y* CFS *v e l s ô .* ó *I ' v e h a d a r e a l l y g o o d w e e k i n t e r m s o f p a i n . I ' v e w* *me a t a l l . I ' d s a y I ' m d* MSK *i n i t e l y o u t o f* ó *F e l t t h e n e e d t o t a k e w a s o f a y g h o t f i f n g l a d s e t p r w e e s k i é o n f e a l n t d I t h e* *'Week 2 of my new job in a new city after 3 months of being unemployed. Migraine is misunderstood and I am torn* *b e t w e e n b e i n g o p e n a n d* Migraine *i n g w h e n I a m*
Black – occupational.	9	ó *T h e w o r s t i s s u e i s t h e c o n f l i c t . I t s m a k e s .* Mental health *e d* ó *é t h e C E O p r a i s i n g s t a f f w h o w e n t t h e e .* Mental health *i l e ,* ó *I a m a n x t o e s f a b o u e b u t h o p e t h i s c a r e e r c h a n g e .* Migraine *I* ó *I a m e x h a u s t e d a n d w h i l s t m y c o l l e a g u e s a n d l i n e m a n a* *to us with mental health needs but all staff . We a r e a* Mental health *t h e a k i n g ô .* ó *I ô v e b e e n s o b u s y I h a d t o ô* MSK *o t o w o r k w h i* *'Not used to the office - f e e l s t o o w a r m é m a k e s m e p l f a e l f o s I m a e p a i d i s a s t u e a L T C p o*
Blue – work.	6	ó *F e l t c h u f f e d t o d a y a s a f e w c o l l e a g u e s s e .* MSK *m e e n* ó *I f e l t o v e r w h e l m e d f o r t w o o f t h e f i v e d a y s é .* Mental health *n e* ó *I d e a l t w i t h a e k w h i c h w e r e u n n e c e s s a r y a n d d e a l t w i t h p e o p l e o f a h i g h e r g r a d e w h o l o o k e d t o* *m e f o r s u p p o r t . T h i s i s a c o n s t* CFS *a n t d r a i n , a s* ó *N o i s s u e s t o d a y a l t h o u g h f e* Respiratory LTC *. l i t t l e t i*

**N* denotes the number of overall comments

5.8 Discussion

This study aimed to examine the temporality of workers' LTC self-management. The 10-week study design enabled changes in workers' self-management and factors that might affect this to be captured over time. The study provides new longitudinal insight to workers' LTC self-management and resources including confidence, support and work engagement. The study contributes to the developing workplace LTC self-management literature and extends research by newly connecting work engagement with workers' self-management confidence. This section discusses the main findings relating to workers' self-management characteristics and study hypotheses.

Workers Self-Management Activities and Support Over Time.

No significant changes in LTC self-management activities, types of support received, and support satisfaction were observed over the study period. The findings suggest that self-management behaviours can be stable and are not a daily occurrence. Although it is possible workers did not self-manage because it was impracticable, the findings contrast with the literature suggesting that LTCs require '*c o n s t a n t* (Gobel-Lavoie et al., 2019, p. 1) and inferences of self-management happening most of the time. This also contrasts with studies describing over time change in LTC self-management activities (Audulv, 2013). Moreover, the stability of workers confidence, satisfaction with self-management support and types of support received could be because LTCs were temporarily stable. Although LTCs often fluctuate, requiring a person to respond by self-managing new symptoms or seeking different support, participants' health (LTC) situations (i.e., health complaints in the last week) did not significantly change over time. So changes to self-management behaviours were not necessarily required, or different support needs triggered (Van Houtum et al., 2013). Additionally, perceiving control and being able to influence an LTC is integral to self-managing (Hibbard & Gilburt, 2014). A significant increase in participants' control of an LTC and a decreasing effect of work (on an LTC) over the period was observed. Therefore, existing self-management regimes and support resources could have been undisrupted and adequate.

The content analysis provided additional insights to factors that facilitate (or undermine) workers' LTC self-management. The analysis highlights that blue and black Flags of manager support and work demands, and yellow Flag factors of openness and disclosure, influence workers' satisfaction and self-management behaviours. In particular, instrumental support for flexibility to enable self-managing symptoms (which rests largely on relational support from managers) strengthened the evidence for manager support for self-management (Heinrichs et al., 2018; Munir et al., 2009a). Although the findings add to the

evidence for formal work modifications to enable LTC self-management (Boot et al., 2013), formality was not specified as important. Tveito et al (2010) found that leeway in role was important to workers self-managing back pain. This adds to the evidence for leeway which it seems might achieve the same enablement. Informal leeway could reduce manager's time spent adhering to formal modification processes (which usually entail meetings and written records), and could be better for workers with LTCs by lessening procedural stressors.

Workers LTC Self-Management Confidence Over Time.

Hypothesis 5 theorised that participants' LTC self-management confidence will change over time. Although self-management confidence increased over the study period the finding was not significant. While social cognitive theory posits that people's self-management confidence can change within short periods and self-efficacy beliefs develop through over time experiences (Bandura, 1997), the findings could be explained by workers being adequately supported (Lorig et al., 2001; Ouweneel et al., 2013). However, significant variability between-persons over the period showed that workers' self-management confidence changed but not uniformly. This suggests that other factors play a role.

One of the challenges to self-management support is that one-size does not fit all LTCs. While commonalities to self-managing exist including responding to symptoms and managing emotions (Barlow et al., 2002), evidence shows that self-efficacy can vary by LTC (Munir et al., 2009a). While people's experiences of managing a condition might be similar, they are unlikely to be the same. Some people will be more or less confident about self-managing owing to available resources and psychosocial factors including skills and demands of an LTC or work. Therefore, not everyone will have (or need to have) the same confidence. Given such diversity, differences in the change of workers' self-management confidence over time is plausible (Breevaart et al., 2014; Schulman-Green et al., 2016). This suggests that where some workers need support enhancing confidence, others need support maintaining it.

It was hypothesised (*hypothesis 6* and *7*) that changes in worker's self-management confidence will be associated with changes in support satisfaction and LTC control. Contrary to claims that support is associated with self-management confidence (Barlow et al., 2002; Kennedy et al., 2013), *hypothesis 6* was rejected. Support satisfaction explained a trivial amount of variance in workers' self-management confidence. Furthermore, although self-management confidence reflects a person's self-efficacy to exert control (Bandura, 1997), which can be undermined by an LTC's effects such as new symptoms, *hypothesis 7* was rejected. Participants' LTC control was unable to explain the changes in self-management

confidence over time. Evidence shows that having adequate control and support influences self-management behaviour (Bandura, 1997; Gallant, 2003; Hibbard & Gilburt, 2014). It is possible that people's control and support was adequate over the period, or enhanced by participating in the study. It is also possible that temporary stability of an LTC meant people's control of a condition was unaffected. Alternatively, support might have been available elsewhere including outside of work (Hibbard et al., 2005) and that is unaccounted for in this analysis.

One finding from this study is most striking. In line with *hypothesis 8*, the differences in the changes of participant self-management confidence over the period related to their work engagement. It is known that work disengagement concerns workers with LTCs (Shaw et al., 2014). The significant finding that work engagement had an effect on changes in workers' self-management confidence over time suggests there might be good reason for concern. Work engagement could be a predictor of workers' LTC self-management. As the findings suggest that more engaged workers are more confident to self-manage an LTC, this provides new evidence for engagements' potentially motivational effects (Breevaart et al., 2014). The findings resonate with other research showing over time change in work engagement (Ohly et al., 2010) and adds to a limited evidence base featuring LTCs and workplace self-management (Shaw et al., 2014; Veromaa et al., 2017). It is troubling that poor work engagement, in addition to the risks of low morale and underperformance, might detrimentally affect workers' LTC self-management. However, its potentially motivational effects could be beneficial to workers with LTCs and employers alike.

It is easily arguable that engagement is a focus for employers because of its relationship with positive work outcomes including productivity and performance (Macleod & Clarke, 2009; Munir et al., 2015). This study adds a different perspective in associating work engagement with LTCs and workers' self-management confidence. Workers' management of LTCs is important to employers (Shaw et al., 2014) and healthcare providers (Barker et al., 2018). As self-managing can improve health and work outcomes, in this way work engagement could be viewed as a self-management support resource for workers with LTCs.

Limitations, Implications and Future Research.

This study provides the first insight to workers' LTC self-management at work over time but has some limitations. Recruitment and attrition was a particular problem and resulted in the sample being smaller than anticipated. Specifically, the time-lag between Study 1 and the diary's launch could have affected participants' study engagement. Just 35 percent of

workers approached (to take part) participated. Perhaps this was because the time lag between Study 1 and 2 was, for some (who expressed an interest in their survey response), over 12 months, meaning they were no longer engaged with the research. Workers could have moved jobs and not received diary invites, or invites could have been blocked by email screening systems. Moreover, while dropout is common in organisational diary research (Ohly et al., 2010) the 63 percent attrition rate (calculated between T1 and T6) could relate to its sole online method, or the researcher's limited ability to engage with remote (otherwise anonymous) participants. Further, the study crossed a popular UK public holiday period. This affected the number of entries because people were not working due to annual leave (at T4), some of whom had notified the researcher (n = 4). Yet, MLM can handle unbalanced time-point data and makes use of observed (and incomplete) data to produce estimates. This helped minimise dropout effects and avoid the listwise deletion of cases. Nonetheless, it is accepted that this approach to missing data could have introduced bias which affected the modelling's estimates and undermined variances. This in turn, could have affected the study's inferences and overall conclusions.

Regarding bias and while some degree might be expected, individual participants might not be representative of the population. Whilst the researcher targeted a range of workers with LTCs, a specific group were invited to participate in this study (i.e., only those UK workers who had participated in Study 1 and indicated an interest). Also, the study design and sample size meant that individual condition group data (e.g., MSK, mental health) were analysed together in one LTC group. Therefore, characteristics that distinguish LTCs and reflect the broader population could have been overlooked. Although commonalities exist between LTCs, analysis of them together means the findings cannot be interpreted by condition which is a constraint. Furthermore, the findings' reliability could be impacted by bias due to participation, with workers reporting in more desirable ways, changing their behaviour as a result or withholding information. The researcher took steps to minimise bias by reinforcing confidentiality and reminding participants of the study aims at each time point, but it is acknowledged that people could have chosen to participate because they were confident self-managers or due to being disgruntled with an employer. Possibly, participants were motivated by other unmeasured factors that skew the findings (e.g., being in a period of notice thus feeling more able to be open). Additionally, whilst the content analysis provides a novel insight to workers self-management, the coding was pre-informed by the

researchers' interpretations, reading of the literature and experience of supporting workers with LTCs. Although independently checked, this could be inaccurate.

Lastly, the study's self-management activities measure was informed by the researchers reading of the literature and discussion with HR practitioners (who are not medically trained). So, workers could have been limited in sharing activities because the measure excluded them meaning those presented are inaccurate. The design also inadvertently overlooked Study 1's activities measure, restricting a direct comparison of the two studies findings.

Future longitudinal studies with larger sample sizes should examine workers' self-management confidence by separate LTC groups. A better understanding of the reasons for the differences in variations in self-management confidence over time, accounting for LTC and working condition characteristics could help inform support for workers. As psychosocial features were important reasons for workers' self-management confidence, these should be investigated further including characteristics not measured in this study including working conditions (and over a longer period). Additional investigation into the stability of self-management confidence in a population of workers with LTCs experiencing organisational change including restructures, or the impacts of Coronavirus and LTC worsening would provide useful insights. Specifically, the implication that work engagement affects people's LTC self-management is important. Studies should decipher and examine the drivers of work engagement from worker (with and without LTCs), manager and employer perspectives.

5.9 Summary and Conclusion

This study provides a novel longitudinal insight into workers' LTC self-management and confidence. The new evidence that work engagement could be a way in which work interacts with people's LTC self-management confidence, thus might undermine or enhance self-management of a condition has important implications for workers, employers and potentially healthcare providers. Furthermore, as significant differences in the change of workers' self-management confidence over time was shown, deciphering the reasons for this variation to provide improved and tailored LTC support forms would be beneficial. The suggestion that yellow and blue Flag features of flexibility, leeway and openness affect workers' LTC self-management and are operationalised by manager support, indicates important aspects for later studies to examine. In conclusion, the findings provide evidence that work engagement and manager support for flexibility could be a way of enhancing

workers LTC self-management. Future research should prioritise deciphering these relationships to inform workplace LTC self-management support interventions.

Chapter 6 – Study 3

6 Employer Perspectives Concerning the Self-Management Support Needs of Workers with Long-Term Health Conditions: An Interview Study

This study aimed to examine employers' views about workers LTC self-management support needs. The survey and diary study findings presented in Chapters 4 and 5 suggest that while workers with LTCs want to feel confident about self-managing at work, they do not always do so. Furthermore, Study 1 showed that workers with LTCs were at greater risk of work stress with psychosocial features including poor support for modifications, poor relational support from managers and stigma potentially undermining people's openness about self-managing an LTC. Taken together, the findings suggest that workplace support could be beneficial and the data indicates a role for employers in promoting workers' LTC self-management. Nonetheless, little is known about employers' views of supporting workers in this way.

Long-term health conditions can be burdensome on individuals at the same time as adversely affecting employer costs. Although work can contribute to a better quality of (working) life (de Jong et al., 2015; Megari, 2013), LTCs can undermine people's ability to work (Bajorek et al., 2016; Beatty, 2012; Van Rijn et al., 2014) due to fluctuating symptoms, sickness absence and reduced productivity (Goetzel & Ozminkowski, 2008; Vick & Lightman, 2010). These are significant challenges for employers (Bevan et al., 2016).

Whilst the majority of people can be supported to self-manage an LTC themselves (Corbin & Strauss, 1988; Coulter et al., 2013; Newman et al., 2004) this does not always happen. Although receiving support can alleviate the negative effects of an LTC on performance (Hjärtström et al., 2018), engaging individuals (and healthcare providers) with self-management is difficult (Glasgow et al., 2008; Greenhalgh, 2009). Therefore, it is feasible that some workers' LTC self-management is not supported.

Although individual, organisational and societal features can interact to undermine workers' LTC self-management (Dellve & Eriksson, 2017; Heinrichs et al., 2018; Munir et al., 2009a; Shaw et al., 2012) little research looks at these from employer viewpoints (Gallant, 2003). Whilst understanding these interactions is challenging due to their complexity (Buck et al., 2011), doing so could help target support to improve health and work outcomes (Challis et al., 2010; Galdas et al., 2015.; Hoffman, 2013). Existing self-management studies presenting

workers' perspectives (Heinrichs., et al., 2018; Munir et al., 2009a; Summers et al., 2014) do not provide a full picture, with few considering employers' views (Bramwell et al., 2013). Also where available, studies focus on *return to work* more than remaining *at work* or ongoing LTC support (Cancelliere et al., 2016; Etuknwa et al., 2019; Stochkendahl et al., 2015; Wynne-Jones et al., 2011). Consequently, whilst research recommends workplace self-management support could improve (Gignac et al., 2020), little research explores work as a setting for supported self-management (Shaw et al., 2014) and none (to the researchers' knowledge) from an employer perspective. This study addresses this gap.

Accounting for employers' views is important because workplace support could be challenged by organisations economic needs to maintain productivity and minimise cost. So while employers might do more to support self-management and understand workers' needs (Kaye et al., 2011; Stevenson & Farmer, 2017) this could be difficult alongside organisational priorities. Employers' views about supporting self-management and the potential challenges to providing support have not been scoped. This study seeks to rectify this by examining employers' views and by deliberating the self-management support obstacles and outcomes employers consider important. This is essential to providing effective and feasible types of workplace support, and to the future design and implementation of work interventions (Boger et al., 2015).

This main aim of this study was to examine employers' views about workers' LTC self-management and support needs. To date no research has examined this from employer perspectives. To explore and understand their views a semi-structured interview and thematic analytic methodological approach was taken. This was to gain an insight to employers' views about workers' LTC self-management, influencing work factors and workplace support including potential challenges to providing support.

Four of the project's overall 11 research questions were formed for this employer study:

4. How do employers perceive that work factors influence workers' workplace LTC self-management?
5. What are the challenges (obstacles) to supporting workers' LTC self-management?
6. What do employers know and understand about workers' LTCs, self-management behaviours and support needs at work?
7. What are employers' views about their role and responsibilities in supporting workers' LTC self-management at work?

6.1 Method

This study's methodology adopted a constructivist interpretivist stance (Cresswell, 2003) and was interested in understanding the employers' view of LTC self-management support. A thematic analytic process was followed (Braun & Clarke, 2006) which allowed the data to speak for itself. To address the research questions a semi-structured interview study was designed. Semi-structured interviews are a flexible approach and enabled the researcher to address complex topics whilst guiding the interview's direction (Stuckey, 2013). Moreover, according to Fylan semi-structured interviews are effective for '*discussing sensitive t* (cited in Miles & Gilbert, 2005, Chapter 6, p. 67) such as LTC and work interactions, and potential employer concerns. Their in-depth nature means interviews are widely used by healthcare researchers (Jamshed, 2014) and have been effectively used in self-management studies examining the influence of work on asthma (Heinrichs et al., 2018), medication use (McDermott et al., 2017) and depression (Chambers et al., 2015). Collecting data in this way was envisaged to encourage employers to speak freely about what work features they consider affect workers LTC self-management.

6.2 Participants

Semi-structured interviews were undertaken with a sample of 15 employer participants. Their demographic profiles are presented in Table 6.1 of the results section. The inclusion criteria is as follows: representatives who were employed in HR, health and safety or OH roles; currently working in one of these specialisms; of any age or gender; employed by an organisation; and actively working in the UK.

A purposive sampling approach was adopted (Patton, 2003; Sharma, 2017) to approach 21 employers. Firstly, the researcher approached the eight Study 1 employers (who had distributed the online survey to their workers) to ask if they would participate in an interview. Six agreed to participate. Next, the researcher identified employer representatives with health and wellbeing responsibilities from their job title via her professional HR networks, HR publications (e.g. the CIPD's People Management magazine) or LinkedIn. People were contacted directly via email, phone or were spoken to by the researcher during networking meetings (n = 13). Nine employers agreed to participate.

6.3 Interview Schedule

A semi-structured interview schedule was designed by the researcher (see Appendix 11 for a copy). This was informed by the researcher's HR experience in employee relations and workplace wellbeing, and the survey and diary studies content analysis results. Study research questions were derived from and examined against the existing scientific literature

(Munir et al., 2005a, 2005b, 2009a; Rogers et al., 2014; Shaw et al., 2012, 2013), and refined against highlighted gaps before being incorporated into an interview schedule. The final schedule included 14 (mandatory) questions divided into three sections.

Section one of the schedule explored employers' knowledge of the LTC profile of their organisation, awareness of workers self-management activities and views about their role and responsibilities. Section two explored the workplace LTC self-management support provided to workers, perceived support needs of workers with LTCs and how support for self-management is currently provided. Section three explored work factors and employers' views about the way in which work affects LTC self-management, the obstacles and challenges to providing self-management support and sources of workplace support. Eight optional probing questions were drafted. The final schedule was reviewed by two experienced researchers independent to the study and resulted in changes to the probing questions. The final questions were piloted with an independent HR practitioner in March 2018 resulting in no question amendments.

6.4 Procedure

Data were gathered from March to September 2018. Participants were invited by email to participate in an interview either face-to-face or via telephone at a suitable place and time. A detailed information sheet outlining the study's aims and a consent form was included in the email (see Appendix 12). All participants provided written consent and were invited to speak with the researcher ahead of an interview. Due to geographical considerations and participant's job demands, face-to-face meetings were not always possible. Six interviews were conducted at workplaces and nine via telephone. Telephone interviews have been found comparable to face-to-face interviewing and successful in gathering quality interview data (Sturges 2004; Vogl, 2013). In this study, telephone interviewing granted the researcher access to geographically spread and otherwise inaccessible employers (Drabble et al., 2016; Ward et al., 2015). At the start of each interview participants were read the self-management definitions used in the study and the interview structure was outlined.

All interviews were conducted by the researcher who is trained in interview techniques and experienced in interviewing employers. Interviews lasted between 34 and 62 minutes (averaging 47 minutes). Interviews were digitally recorded with participants knowledge and consent. Recordings were subsequently transcribed verbatim by a professional academic transcription service. All the transcripts were cross-checked for accuracy by the researcher whilst listening to the audio recordings at the start of the analysis.

6.5 Analysis

Interview transcripts were analysed inductively using Braun and Clarke's (2006) six-stage thematic analysis approach. The approach is shown in Figure 6.1 and the steps of thematic analysis to enhance trustworthiness outlined by Nowell et al (2017) also informed the analysis. Thematic analysis is helpfully structured and is a robust, systematic framework for examining qualitative data (Braun & Clarke, 2014). Although more deductive approaches exist including the Framework method (Cameron et al., 2013), thematic analysis is acknowledged as an important method to identify patterns in qualitative data and similarly follows a number of steps (Braun & Clarke, 2006; Cameron et al., 2013; Vaismoradi et al., 2013). An inductive approach was initially chosen given the study's exploratory nature and to ensure recurrent themes could emerge from the data. Next, each stage of the thematic analysis is described.

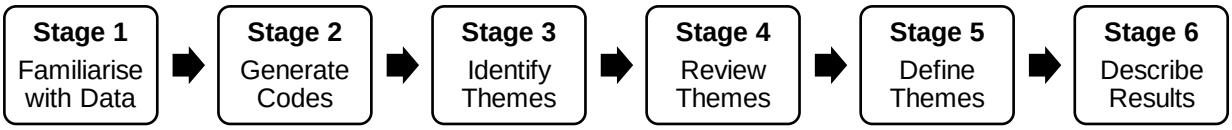


FIGURE 6.1. Six Stages of the Interview Study's Thematic Analysis.

Stage 1 - Familiarisation.

Firstly, the researcher familiarised herself with the data by cross-checking the transcripts twice for accuracy, by listening to the audio recordings and reading the accompanying transcript at the same time. Secondly, the researcher read the transcripts and made detailed written notes about initial observations, potential codes and thoughts (Maguire & Delahunt, 2017). Thirdly, to supplement the written notes NVivo software was used for early data organisation and preliminary coding (QSR International, 2017). NVivo is a qualitative data management software package compatible with thematic analysis (Zamawe, 2015). Lastly, the preliminary coded NVivo transcripts were imported to a Word document where the comments function could be more easily used to continue code generation.

Stage 2 - Generating Codes.

Stage 2 involved finalising the identification of initial codes (Nowell et al., 2017). Transcripts were re-read to check and identify further codes and descriptions, which were noted as comments in each of the transcripts Word file. Meanings and preliminary theme ideas from the coding were also noted.

Stage 3 - Theme Search.

In Stage 3 and to ease the identification of themes (Braun & Clark 2006; Howell et al 2017) each transcript's Word file was analysed using NVivo. Codes which fitted together formed initial themes and subthemes which were recorded (Maguire & Delahunt, 2017). The analysis revealed five broad themes which were then (for ease) recorded in a Word table with their related sub-themes and in readiness for the review of themes in Stage 4.

Stage 4 – Reviewing Themes.

Stage 4 involved reviewing the five broad themes and sub-themes to further consolidate them. To enhance reliability, the consolidated themes were discussed with and reviewed by an experienced researcher, independent of the study who acted as a critical friend (Smith & Sparkes, 2006). This encouraged reflection and suggested other interpretations. Then the researcher undertook a further refinement to reduce the number of themes and produce a thematic template. To aid this a deductive approach was taken in these later stages of analysis utilising themes from a qualitative study exploring the self-management support needs of people with LTCs (Dwarswaard et al., 2016). In Dwarswaard et al's study, themes were captured under two main headings: 1) types of support patients need; and 2) dynamics in self-management support. The first heading defined three support types including *instrumental*, *psychosocial* and *relational*. Instrumental support relates to medical and disease management support, psychosocial refers to enhancing emotional and mental support resources, and relational support refers to beneficial interactions with others. The second heading described disease and individual themes. With these definitions and headings in mind, the present study adopted four final support themes: 1) instrumental; 2) psychosocial; 3) relational; and 4) dynamics in self-management support.

Before grouping the existing themes (under the four final support themes described) the researcher undertook a last consolidation exercise. The aim was to reduce the number of themes by combining them to make them more manageable (Sallis & Birkin, 2014). This resulted in 14 sub-themes grouped under the four main themes. The final version of themes was then checked with the same researcher who had earlier acted as a critical friend and resulted in no further review. A thematic map of the final themes and sub-themes is presented in Figure 6.2.

Stage 5 – Defining Themes.

Stage five identified and defined the final themes. Braun and Clarke (2006) outline that the aim of this stage is to identify what the themes are about. With the study's research questions and four main themes in mind, meanings were defined by the researcher.

Therefore, sub-themes relating to '*dynamics in self-management* accounting for individual, LTC and additionally organisational factors. Sub-themes relating to '*instrumental support*' relate to workplace support for LTC self-management. Sub-themes relating to '*psychosocial*' relate to psychological and emotional resources for workers, whereas '*relationships*' sub-themes relate to beneficial interactions with others (albeit support provided at work). Again, the definitions were independently checked and discussed with the same independent researcher and critical friend. This discussion resulted in two definition wording amendments and adds to the study's validity.

Stage 6 - Preparing for the Report.

In the final stage the researcher examined the grouped themes and identified representative extracts from the data. This was undertaken by re-reading the transcripts alongside the final themes and sub-themes, whilst highlighting sections of text at the same time. The aim of this exercise was to evidence the final themes and address the research questions in readiness for writing the results.

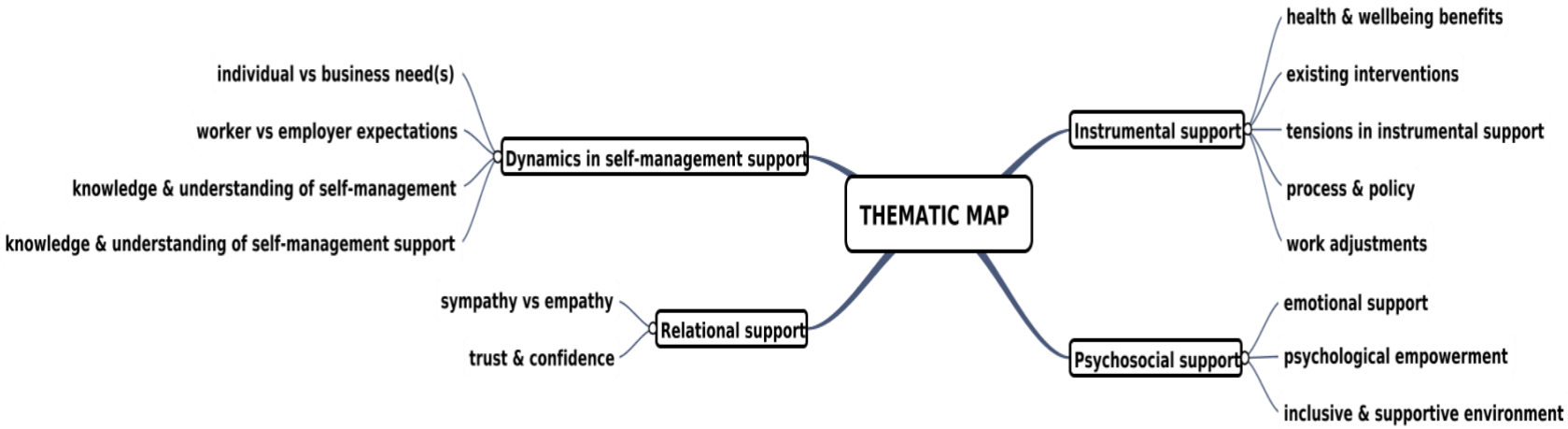


FIGURE 6.2. Thematic Map of the Study's Final Themes and Sub-themes.

6.6 Results

Demographics.

In total 15 employer participants were interviewed. Participant demographics are presented in Table 6.1. Most participants were female (n = 8). The majority worked in senior managerial or director roles (n = 10) and employed in HR roles (n = 9). The majority (n = 11) were managers with experience of line-managing and supporting workers with LTCs. Most participants (n = 12) worked in large (> 500 workers) organisations. Three smaller (SME) employers (50 - 500 workers) were represented. The majority of participants (n = 8) worked in not-for-profit organisations including councils, a hospital, charity, university or government department. The remainder worked for profit making organisations specialising in consumables, healthcare, utilities or professional, financial and recruitment services.

Employer Accreditations.

Based on publicly available information at the time six participants worked for organisations recognised as *Disability Confident* (Her Majesty's Government, 2020). This is a UK government scheme concerned with recognising employers who support workers with LTCs and disabilities. Additionally, one organisation was ranked in the top 20 of the UK Great Places to Work® index. The index reflects the best and most trusted places to work each year. To be ranked, a workplace is subject to an independent assessment which includes collecting worker interview and survey data. To protect participants confidentiality the accreditation details are omitted from Table 6.1.

Table 6.1. ***Demographic Characteristics of Employer Interview Study Participants.***

Participant No.	Sector	Size	Gender	Specialism	Manager	Tenure (yrs)	Method
1	Private sector, for profit – professional services	>500	Male	Human resources	Yes	15	Direct
2	Private sector, for profit - consumables	>500	Male	Occupational health	Yes	6	Snowball
3	Private sector, for profit - utilities	>500	Male	Health and safety	Yes	4	Snowball
4	Public sector, not for profit – finance	>500	Female	Human resources	Yes	3	Direct
5	Public sector, not for profit - education	>500	Female	Occupational health	Unknown	3	Direct
6	Public sector, not for profit - technology	>500	Male	Technical	Yes	2	Snowball
7	NHS Hospital	>500	Male	Human resources	Yes	2	Direct
8	Private sector, for profit - healthcare	>500	Female	Human resources	Yes	1	Snowball
9	Public sector, not for profit - council	>500	Female	Human resources	Unknown	Unknown	Direct
10	Public sector, not for profit - education	>500	Female	Human resources	Unknown	Unknown	Direct
11	Private sector, for profit – financial services	>500	Male	Human resources	Yes	2	Snowball
12	Private sector, for profit – financial services	>500	Female	Human resources	Yes	1	Snowball
13	Public sector, not for profit - council	250 - 500	Female	Facilities	Unknown	Unknown	Snowball
14	Private sector, for profit – recruitment	50 - 249	Male	Business owner	Yes	13	Snowball
15	Charity	50 - 249	Female	Human resources	Yes	8	Snowball

Thematic Analysis Results – Themes and sub-themes.

In this section the themes and sub-themes identified in the thematic analysis are discussed including exemplar participant quotes. Employer interviewees are referred to as *participants* and by number in exemplar extracts. Working people with LTCs are predominately referred to as *workers.*

Theme 1: Dynamics in Self-Management Support.

Theme one presents participants' knowledge and understanding of LTCs, self-management and support. This establishes the organisational background to the views expressed about workplace LTC self-management support.

Knowledge and Understanding of LTCs.

Participants were asked about the prevalence of LTCs in their organisation. An OH specialist described how they '*go by who (and the LTCs) they see*,' (Participant 5). Some participants (n = 3) speculated about the proportion of workers affected by LTCs, ranging from five percent for a council to 20 per cent for an NHS hospital. This suggests that employers are broadly unaware of the numbers of people working with LTCs. Participants were more able to identify the LTCs they were concerned about managing:

> *We ôre probably most concerned about mental heal*
> *hard one for the firm to manage or support.* Participant 1.

For those organisations with manual job types (i.e., those working in the NHS Hospital, utilities and consumables) MSK LTCs were mentioned as problematic due to their effects on workers' ability to undertake physical job tasks (e.g., wearing a lead apron in a radiography department). Mental health LTCs were highlighted as a main reason for sickness absence including stress, anxiety and depression (and less commonly post-traumatic stress disorder (PTSD)). Furthermore, two SME participants highlighted the effects of multiple sclerosis and cancer on workers ability to attend work and undertake their jobs.

Knowledge and Understanding of Self-Management.

For all participants the terms *self-management* and *self-management support* were unused, and not a part of routine health and wellbeing or workers' LTC narratives. Two participants explained how their in-house OH team's reports did not use self-management terminology. When asked about their understanding of self-management, nearly all (n = 13) were unfamiliar with the concepts and for some, they were confusing. Participants were unclear

what LTC self-management and self-management support is and means. Two participants talked of this:

I've never heard any managers mention self-management. Participant 5.

Never heard of it. Self-management? I guess now you mention it, it does make sense, but it doesnôt roll off the tongue do. It sounds Participant 21.

Broadly, participants interpreted self-management support to be any action or support provided at work that could be beneficial (whether intended or otherwise) to a worker with an LTC including features of wellbeing programmes such as web-based information sources. One participant did not perceive self-management to '*be part of everyday life for people (with LTCs)*' (Participant 12). No-one was aware of the scientific evidence for LTC self-management and support.

Participants were asked to provide examples of how workers with LTCs self-manage at work. Two participants shared:

Regular rest breaks é a lot of them (self-management activities) are not visible to us. Participant 1.

I am aware of medication regimes. Participant 5.

Mainly common and visible self-management activities were described although none were specifically related to LTCs. Notably, all described self-management behaviours that did not directly involve workplace support or modifications (i.e., taking a sick day). One participant helped explain his modest awareness of workers' self-management activities:

If the individual doesnôt need to manage their condition why would they tell us about it? Participant 1.

Knowledge and Understanding of Self-Management Support and the Employerôs role and Responsibilities.

Participants were asked to summarise the self-management support provided to workers with LTCs in their organisation. Support was described as being delivered in two main ways: 1) via health and wellbeing programmes giving access to information and resources that workers can use (e.g., an EAP); and 2) via policy interventions managed by managers that

help workers maintain working (e.g., work modifications). Support described by participants was unspecific to workers with LTCs and for most (n = 11), responsibilities for specific forms of LTC support was attributed to third parties including OH and GPs, to advise on what to self-manage or aspects of work to modify.

When asked to summarise their role and responsibilities in supporting LTC self-management everyone considered this to be a joint responsibility between the employer and worker. However, ultimate responsibility to self-manage was attributed to the worker. One participant shared their frustrations with workers who do not take responsibility for an LTC:

Itôs almost like saying, ñIpôve tourn tuhpi sanc condition, now for me?ò Participant 4.

Worker vs Employer needs.

Participants were asked about difficulties in providing self-management support to workers. The entire sample envisaged times when work would get in the way of LTC self-management and the support provided. It was highlighted that supporting and prioritising an LTC can be problematic because of work demands. For one participant, the organisation's output focus meant that empathetic support for workers with LTCs is not always available:

There is an obvious lack of empathy when work demands are clear. Participant 11.

Moreover in the NHS, work demands were perceived to encourage presenteeism:

I think when an illness gets in the way, and staff are beholden to what comes in through the doorétheyabout taking sick leave).y Participant 7.

Despite these complexities all participants acknowledged a need to reconcile workers' LTC self-management support needs with work demands tensions.

Theme 2: Instrumental Support.

Theme two is concerned with the support participants consider they provide to encourage and enable workers' LTC self-management (or is intended to).

Workplace Policies and Process.

When asked about how LTC self-management support is provided, generally workplace policies and process were described. While not strictly forms of self-management support or

meaningfully concerned with LTCs, most participants indicated that policies provide a framework in which workers health can be managed consistently. Policies included flexible working, sickness absence, modifications and return-to-work processes. Although most policies aim to support general health and illness rather than ongoing LTC management, it is possible that they indirectly support and enable workers' self-management. One participant shared exemplar self-management strategies facilitated by workplace policies:

We're a very understanding organisation, and people can take time off, they can go for medical appointments, all of those sorts of things, and our policies support them to do that.
Participant 4.

It was suggested that policies enable workers with LTCs to take care of themselves and self-manage. Yet it was recognised that the usefulness of policies to workers' LTC self-management is not made explicit:

We ôve got all these policies and procedures in p
said, youôre very-management of your condition (to use them). self
Participant 7.

Therefore, workers might be unaware of the potential benefits of work policies to their LTC self-management meaning they are not motivated to understand or use them.

All but one participant associated LTC self-management support with two policies: 1) sickness absence; and 2) flexible working. It is feasible that workers with LTCs will at some point need to self-manage by taking a period of sick leave. The absence support provided by participants varied. Whilst some provide workers with continuing pay and benefits during absence others (including SME's), operate less defined and more informal methods. Inflexible absence policies could make taking sick leave difficult and be at odds with the effective self-management of LTC symptoms. Specifically, two large organisations described a Bradford Factor formulaic approach to managing short-term absence, whereby a weighting (and score) is applied to a workers absence level (taking account of the number of occurrences and days) in a 52-week rolling period. A warning system operates alongside which recommends employer action (e.g., a score above 450 recommends dismissal). Absences relating to workers' LTC self-management were not mentioned as excluded from the schemes.

The ability of workers to work flexibly varied across organisations and multiple factors were identified as barriers to flexible working. Between industries, job roles that demanded particular working patterns including shifts were acutely inflexible. Nonetheless, all participants shared a belief that flexible working is an important method of support which could facilitate a person's LTC self-management:

é flexible working is a massive self-help technique for anybody who suffers a psychological or physical long-term illness. Participant 3.

Except for two organisations, flexible working was not easily accessible and had to be formally requested as a modification and via a process. However, for one participant, a global policy of informal flexible working meant that in principle, all workers (regardless of LTC status) can work flexibly. Consequently, flexibility did not always need to be requested. The employers' HR participant explained the policy's enabling effect:

The way in which we encourage flexible working probably allows to a degree people with LTCs being able to just get on with things without having to come and ask permission. Participant 1.

Similarly, for one SME informal flexible working was unproblematic:

ó We ô r e q u é t w e d o n ô t b t r e y a n d p l a c e t o o m a n y r e s t r work that we need from you, fit it into your time as you see fit basically and if we have any p r o b l e m s , w e ô l l . a c c o m e b a c k t o y o u Participant 15.

Work Modifications.

Participants linked flexibility with work modifications (otherwise termed *adjustments*). Modifications aim to reduce the disadvantage workers with LTCs (and disabilities) might experience and in the UK, are a regulatory consideration for employers where workers with LTCs qualify as disabled under the Equality Act (2010). All participants highlighted how modifications and mainly those granting flexibility, can have a positive enabling effect on LTC self-management:

Most people who are self-managing a chronic illness will actually respond amazingly well to an organisation that actually considers making adjustments in the right way. Participant 3.

Modifications for LTCs were not always possible for participants and in the UK, employers can decline making modifications when deemed unreasonable (The Equality Act, 2010; Wheatley, 2017). For one participant of a large organisation modifications were rare. Multiple factors were suggested as creating difficulties including the feasibility of a modification, leadership attitudes, effects on colleagues, cost and meeting work demands. Where workers need modifications to self-manage an LTC these factors could stop them from doing so. Furthermore, most participants preferred fixed boundaries to modifications including contractual and written agreements. Fixed boundaries could be an additional barrier by not allowing workers the flexibility to adjust to an LTC when required such as by self-managing a new and unexpected symptom.

Wellbeing Programmes.

When explaining the LTC self-management support available participants also described health promotional and wellbeing programmes, and benefits and services (e.g., private medical insurance or EAP). Participants consider that by providing access to resources they are supporting workers LTC self-management. For example, participants spoke of how access to benefits could help workers with LTCs manage and respond to symptoms by accessing private health services, or help them address lifestyle risk factors and take preventative care (e.g., by having a health assessment). Yet, examples of support for specific LTC types were infrequently described. Where mentioned, specific LTC support included mental health first aid training (n = 4) and on-site physio services (n = 2) for people with MSK conditions. Programme elements specifically concerned with people's knowledge, skills and confidence to self-manage was not mentioned.

Regarding benefits, larger organisations offered more comprehensive schemes than the SME's. Yet one participant from a large organisation was confused by a lack of benefit usage:

I feel like we have lots of enablers (benefits) for people to self-manage an LTC, and I'm not sure that they actually avail themselves of those. Participant 4.

Employers anticipate that by providing access to health, wellbeing and benefit resources workers with LTCs will self-manage their condition. However, the benefits of wellbeing programme resources to LTC self-management was not communicated to them. Moreover, the most described benefits were concerned with preventative and recoverable care and support. For many workers, recovery from and prevention of worsening of an LTC is

impossible. Furthermore, some benefits will not be supportive to self-management (e.g., private health insurances which exclude cover and treatment(s) for pre-existing LTCs).

Theme 3: Psychosocial Support.

Theme three presents the workplace support available to workers with LTCs that participants consider helps support and enhance workers' psychological and emotional resources.

Emotional Support.

All participants mentioned the importance of emotional support to workers with LTCs. An HR practitioner working for an SME shared:

> *I think there is a balance to be struck really, between providing sufficient emotional support to people (with LTCs) to feel that they can bring their full selves to work– and not be frightened to talk about their condition– and knowing when this is what they are here to do and to a certain extent that needs to be the primary focus.* Participant 13.

First and foremost, all participants highlighted the importance of manager support. Although opinions about how emotional support is demonstrated varied, it was mostly agreed that care, compassion, empathy and openness mattered. Participants agreed that support is demonstrated in the regular day to day interactions between managers and individuals such as in one to one meetings or catch ups. One told of how managers providing emotional care and support by listening could help workers self-manage emotions:

> *You may not be able to do anything about the stress someone (with an LTC) is experiencing, and you can be upfront about that and say, "there's nothing I can do but listening to someone is an enormous help to them.* Participant 9.

Some described how workers experiences of self-management support '*will vary from manager to manager*' (Participant 13). A few alluded to difficulties with managers who lack emotion affecting a worker's LTC disclosure, and potentially permission for modifications. In these situations, participants suggested that workers turn to colleagues.

Secondly, colleague support was considered important by most participants (n = 12). Colleague support was not always an alternative to managers' support but a complementary and different form i.e., was perceived to be more informal, undertaken in situations like team meetings, during quick chats or at lunchtime. One participant spoke of the perceived

protective effect of colleague support on workers' mental health during a time of peak demand:

It was almost like they had their own bubble around that pressure and they were looking after each other. Participant 7.

It was also suggested that workers with LTCs need different levels of colleague support, which could include none at all. An example of the perceived support needs of a worker with a mental health LTC was specifically described:

He would like support from his colleagues as well and probably quite different from a lot of the people we've this context, he wants people to check in with him. Participant 15.

The third type of emotional support described was OH support. For those with OH access (at least n = 10), participants explained their expectation that OH will advise and influence workers self-management via supportive conversations between them, in which particular behaviours are advised and encouraged. Occupational health support was mainly provided via referral services whereby workers with LTCs are referred for review, which results in a report being sent to a manager and/or HR. Despite not being specific about OH's influence on worker's emotional resources (perhaps as they are unlikely to have attended a one to one meeting of this kind), one participant shared an example of OH's vicarious influence on workers emotional health via modifications:

There was a great conversation that came as a result of that (referral) with the manager and the OH team, that actually allowed the manager to make modifications in terms of flexible working hours and mood control for that individual whilst at work. Participant 3.

Psychological Empowerment and Creating an Open and Inclusive Environment.

All participants want workers with LTCs to self-manage at work when they need to. To do so, a view was shared that workers need to feel confident in themselves and be empowered. Participants considered an open and inclusive working environment to be central to this. To empower workers self-management and regardless of organisational size or sector, all participants talked about action their organisation had taken to enhance inclusivity (e.g., by talking more about disabilities or supporting World Mental Health Day). Additionally, direct efforts to empower workers, including by a manager having a conversation and encouraging

a worker to use counselling services, were described. One participant explained his hope that they were:

> *é empowering employees (with LTCs) to identify advice about how to manage their health better*. Participant 3.

Inclusive working environments were important to all participants and were characterised by openness including disclosure and informality. Participants considered inclusive environments to be empowering by enabling choice, thus giving control (autonomy) and permission for people to be themselves and self-manage. However, a few shared concerns about supporting workers with LTCs inclusively given the variation of conditions and differing support needs. Some had experience of workers with LTCs who were more motivated to self-manage a condition than others. One participant talked of the impossibility of knowing what self-management support each worker with an LTC needs. In particular, worries about providing support when it is hard to spot there is an issue was shared:

> *We ôre not necessarily trained to manage anLTC sign or something other than day to day pressures of life.* Participant 9.

When participants talked of empowering workers with LTCs to self-manage it became clear that thoughts were combined with those about inclusion, disclosure and stigma. Overall participants would not expect workers to be empowered to self-manage and feel supported if they were unable to be open about an LTC. Two cultural features of work were highlighted and viewed as integral to workers' self-management: openness and permission. These were intertwined in employer's dialogue about stigma and disclosure. Participants believe their organisations support workers' LTC self-management positively and negatively via these factors.

Openness was spoken about as evidenced when there is no, or little stigma and a worker feels able to disclose an LTC (i.e., a manager being told and made explicitly aware in a conversation). For one participant, being able to disclose and talk about an LTC with a manager was fundamental to being empowered to self-manage:

> *Biggest and foremost is theyôre ab* (Participant 3). *come fo*

Yet openness was perceived to be demonstrated in other ways. For another participant openness was reflected in the existence of close and transparent relationships with

colleagues, who were aware of an LTC and self-management activities, perhaps informally reminding someone about what they need to do. But for most, openness was about disclosure to access support and managers being accessible and prepared to listen, which was also influenced by leadership messaging.

Reflecting on what participants had to say about empowerment and inclusion, it emerged that relations between openness, permission, stigma and disclosure was viewed as cyclical (presented in Figure 6.3). Openness was perceived to help workers feel permitted to disclose an LTC for support:

We push quite hard with managers, to look at things (support) in the round. Some of that is enabling employees to feel safe to openly disclose their (LTCs) needs. Participant 2.

Workers' disclosure could help break down stigma and enhance understanding about LTCs and lead to their greater empowerment to self-manage and support (because of openness):

I think that now that people are becoming more aware and understanding of mental health problems, people are getting signposted to better support in the workplace. Participant 9.

Conversely, a lack of openness could affect people's sense of permission to disclose and undermine self-managing.

I think the stumbling block (to self-management) is always for people to actually be open about it (an LTC). Participant 4.

This could reinforce stigma, misunderstanding and encourage workers to conceal invisible, stigmatised and poorly understood LTCs. One participant spoke of the negative and fear inducing effects of stigma influenced by a lack of understanding:

I think people are quite fearful, so it (stigma) doesn't encourage people to self-manage (an LTC) é people think it ô Participant 5. *ary health co*

One participant attributed stigma to managers and how '*a certain manager with a certain mind* (Participant 15) could obstruct disclosure. Most participants had experienced dealing with the negative effects of stigma on people with LTCs. Yet it was suggested by two participants that stigma might not be the only reason for nondisclosure. Some workers are

not prepared or decide not to speak of an LTC, considering it a non-work matter. An SME participant described a worker who viewed their LTC as a private and separate part of their life and did not speak of it at work. The inference was that they self-managed the psychological consequences of an LTC by seeing work as a haven from having to think or speak of it.

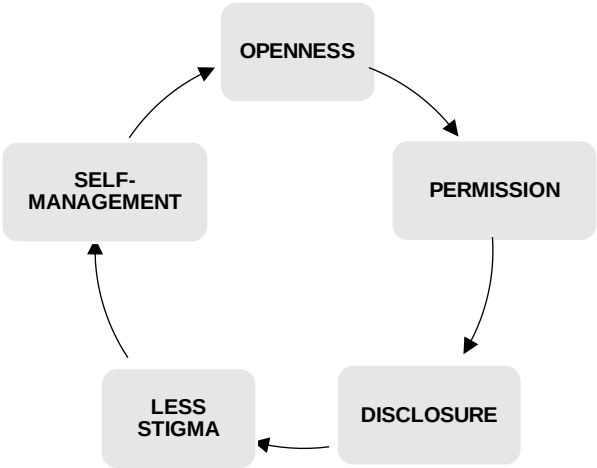


FIGURE 6.3. Worker Empowerment Cycle.

Participants mainly suggested that workers with LTCs want emotional support at work, to feel confident and accepted. In thinking about this and in response to an increase in mental health LTCs, two participants spoke at length of efforts to boost the availability of psychological and emotional support resources. They aimed to achieve this by enhancing openness and encouraging disclosure, with view to empowering people to manage their mental health. Their campaigns and investment in mental health first aid training had resulted in establishing a peer support resource of more than 500 people in each organisation.

Theme 4: Relational Support.

The data suggests that participants considered relationships to be an important self-management support resource for workers with LTCs. Theme four is concerned with the dynamics and traits of relationships, and helpful and beneficial workplace interactions workers have with relational support sources including managers.

Sympathy and Empathy.

Whether or not people with LTCs have access to helpful relationships at work influences their health behaviours. The two relationship features that stood out in being helpful for participants were sympathy and empathy. It was implied that levels of these traits affect workers with LTCs in different ways including peoples disclosure decisions, coping with work

and an LTC's demands, mood, attendance, performance, confidence, empowerment and self-management decisions. It was suggested that workers treated with sympathy and empathy are more likely to feel cared for and understood, leading to their empowerment to self-manage an LTC.

Participants shared how these traits are demonstrated in varying ways including: behaviourally, such as in a manager's tone of voice; in job demands including expected turnaround times; and in operational aspects such as a workers' ability to work flexibly. An OH specialist and HR practitioner shared their views of these traits:

An understanding that when a person says ñI ôm in a pal ôm really ò struggl instead of almost laughing at it, they need to be, not completely 100% sympathe there thereò, I donôt mean that but, .I do mean Participant 5.

Understanding that person, understanding what they have to go through, probably understanding their LTC a little bit. Participant 9.

An absence of these traits was identified by nearly all as unhelpful and a barrier to LTC disclosure, modifications and tackling stigma. One participant illustrated the impact of this in accessing modifications:

I think itôs reasonce urnat ehrers ut fhfan starting from th unique requirements and Participant 2. ôs work round

It was suggested that boosting sympathy and empathy is important because a caring and compassionate approach is better received by workers with LTCs. For this reason, one participant talked about the efforts being taken (regarding mental health) to influence managers' care, coaching skills, attitudes and understanding:

Weôre giving information to managers to help, choi broken, please fix them and send them back. Participant 2.

The business case for the adoption of a caring and compassionate approach to workers with LTCs and their workability was neatly described by an HR practitioner:

If you show people you care then they're more likely to come back to work knowing that they'll get support and not waiting until they're absolutely 100 per cent better before they try out the workplace again. Participant 9.

Trust and Confidence.

The level of trust and confidence workers with LTCs have in an organisation (and vice versa) was considered critical to LTC self-management. Participants gave examples of how these factors influence disclosure, performance, conflict, health behaviours, securing modifications and help-seeking. One described their aim:

To culturally be mature within the organisation, to be able to trust managers to do the right thing and you encourage them, but also the employees. Participant 3.

Trust and confidence were mainly indicated by managers. Workers with LTCs whose managers trust them were suggested to be more likely to be taken seriously, have modifications sanctioned, and more likely to be granted flexibility because of that trust and confidence. This was perceived to have the effect of granting permission, thus having an empowering effect on workers LTC self-management by giving them control.

Participants were unclear about how managers' trust and confidence in workers with LTCs is established (or lost), although performance and absence patterns seem to play a role. Additionally, there were indications from nearly all participants that workers are not viewed as experts with credible knowledge of an LTC, hence participants reliance on OH (where available). This could get in the way of a worker's LTC self-management, where an employer is concerned about the legitimacy of a worker's own views about their LTC. As it stands, workers with LTCs were more likely to be referred to OH than be asked about their self-management support needs personally, and who may not legitimise their views. One exception was indicated by an HR practitioner of an SME who adopted a very different approach:

Our first port of call when an employee declares something like that (an LTC), is to take whatever theyôve got to say about it, and t Participant 15.

Line Manager Relationships.

Managers were viewed as the key source of relational support for workers with LTCs and the main influencing factor on people's workplace experiences. Participants considered that worker-manager interactions are beneficial only under certain conditions such as where a

worker is interacting with someone whom is acting in their interests. One public sector participant provided a profile of such a manager:

Someone you can turn to, it's someone you can be honest with and break down some of the fear of talking to line managers. Participant 4.

Managers were described as interacting with workers with LTCs in two main settings: 1) formally (e.g., as part of work modification processes); and 2) informally including during day to day interactions. Moreover, managers provided LTC self-management support in two main ways: 1) by signposting workers to health and wellbeing resources; and 2) by empowering workers with LTCs to do things for themselves. It was frequently described that helpful interactions are characterised by a manager having an understanding of a person's need(s) including awareness and understanding of an LTC. The features discussed earlier characterised these interactions including honesty, flexibility, empathy, sympathy and care, leading to choice, permission and empowerment. Ultimately, managers are able to give workers the control to manage an LTC at work or not. One participant gave a personal example of a manager's trusting approach that gave her the confidence to self-manage an existing LTC:

When I had a problem with my sciatic nerve, she was very amenable to, give me a call if you need to work at homeé if you donô t feel well eno whatever you need to do, I will support you in doing it. Participant 9.

Differently, a line managing HR participant described their adoption of a *ó coaching approa* (Participant 11) to support a worker with an LTC. This entailed them undertaking their own internet research into the workers' LTC to enhance their own literacy and to provide informed support.

The helpfulness of manager support was considered to be heavily influenced by the perceived consistency and fairness of an approach. Most participants speculated that workers perceptions of fairness are closely connected with permission for flexibility and modifications, positive levels of trust and confidence and managers showing they care. Although consistent manager support for workers with LTCs was recognised as important by all participants, it was admitted this was not always achieved and could be a *ó lot: tery ô*

It differs from department to department; it depends how good the manager is as to how well-supported the staff (with LTCs) are and that varies greatly. Participant 10.

Participants did not specify reasons for inconsistencies although it was proposed that managers' personality, experience and confidence levels, type of work and work demands influence the support they provide.

Additionally, a healthcare participant alluded to an impact of inconsistencies in broader team support on workers recovery from LTC episodes:

> *Depending on where you work in the hospital and who your line manager is, or who your team is é has a plus or minus impact.* Participant 17 *w you ôre*

6.7 Discussion

There is a lack of research concerning employers' views about supporting workers' LTC self-management. As workplaces are potential venues for self-management support, accounting for employer views could help researchers design effective interventions that are feasible in work settings. Overall, the thematic analysis showed that employers can undermine or promote workers' LTC self-management and similarities in participants' views about supporting self-management emerged.

The main findings in regard to the research questions are:

1) Employers perceive that work factors of openness, stigma, manager support and work demands affect workers permission to self-manage;
2) The main workplace obstacles to employer's self-management support is workers' non-disclosure of an LTC, poor manager support and work demands;
3) Employers possess a generally limited knowledge and understanding of LTC self-management, and awareness of LTCs affecting their workers;
4) Employers consider that workers are responsible for self-managing an LTC at work and seeking support by disclosing to their manager.

This study makes three important contributions to our knowledge and understanding of workplace LTC self-management support and workplace dynamics. Firstly, the employers in this study do not purposely provide self-management support to workers with LTCs, neither does it appear to be a priority. Secondly, support in any form relies on workers' LTC disclosure which is the main way self-management support can be accessed. Poor relational support from managers and stigma can undermine this openness leading to workers' self-management being (or sensed to be) unpermitted. Thirdly, employers consider that mainly, workers are responsible for self-managing an LTC at work. Overall, employers may not appreciate the control they can exert on workers LTCs. The most notable findings addressing the research questions are now discussed.

Self-Management Concepts and Employer LTC Awareness.

The single most striking finding in this study is that employers were uninformed about LTC self-management support, therefore it is not intentionally provided. Employer support relates to providing help with workers general health activities such as exercise, and work policies unspecific to workers with LTCs such as flexible working. Previous research highlights the complexity and diversity of self-management concepts and interpretation problems (Glasgow et al., 2003; Sadler et al., 2014). These findings add to the literature by demonstrating that employers do not interpret (or provide) self-management support in a meaningful way. This

is perhaps because they have not been told about it. Although healthcare services support the principle of patients looking after LTCs themselves, self-management support is not routinely embedded in healthcare settings (Kennedy et al., 2013). Similarly, this study shows self-management support is not embedded in workplace settings either, signifying further implementation gaps. This position is not helped by the undefined role of employers in existing self-management support models, thus corroborating with recommendations for a need for clarity on responsibilities (Pransky et al., 2016). Given healthcare providers are not always able to meet the psychosocial support needs for self-management (Funnell, 2010), as peer support relates to better LTC self-management (Joseph et al., 2001) and higher self-management confidence (Bandura, 1997), workplace support could help workers better self-manage LTCs. This is timely given LTCs increasing prevalence in working populations.

However, revised self-management support models are not a pre-requisite. Employers are able to take action to learn more about workers support needs if they decide. This lends support to prior recommendations that employers should take a greater role themselves in understanding the needs of workers with LTCs and disabilities (Kaye et al., 2011; Meng et al., 2017). Still, some support could be inadvertently provided via existing interventions including workplace health promotional, employee assistance and wellbeing programmes, which often provide information and seek to educate workers about health and behaviours. Although programmes might not be targeted at workers with LTCs, literacy is important to self-management (Schaffler et al., 2018). In sum, despite employers wanting to support workers with LTCs effectively to lessen conditions' adverse effects, their continuing unawareness about LTC self-management support could make this difficult to achieve.

Workplace Psychosocial Factors Affecting Employer LTC Self-Management Support. Employers consider openness a critical form of LTC self-management support. The findings strongly suggest that the only way of accessing employer support is by workers disclosing an LTC. For employers, openness is reflected in workers decisions to disclose an LTC to a manager, which signifies a support need. This corroborates with a recent study of workplace representatives' views about supporting workers with episodic LTCs (e.g., arthritis and depression; Gignac et al., 2020), which highlighted non-disclosure as a problem in identifying support needs. It also adds to existing evidence by reaffirming disclosure as a critical way of accessing employer and self-management support (Hakkarainen et al., 2017a; Munir et al., 2005b; von Schrader et al., 2014; Vooijs et al., 2017). Furthermore, employers inferred that workers disclosure for self-management purposes could in itself help tackle workplace stigma(s). This highlights nondisclosure as an unhelpful cultural barrier for

employers. Therefore, non-disclosure might serve to perpetuate workers own fears and stigma.

Nondisclosure might signify support is not needed or that a worker is simply not ready to discuss an LTC. However, employers recognised that workers might not disclose due to workplace stigma and fear (von Schrader et al., 2014). Similar to other research, social acceptance and positive relational support from managers was considered to promote disclosure and enable instrumental support, including through work modifications (Heinrichs et al., 2018). This adds to the evidence for the importance of workers feeling able to disclose an LTC (Abma et al., 2013; Brouwers et al., 2019) in order to self-manage (Munir et al., 2009a), and the pivotal role of managers in ensuring openness (Hakkarainen et al., 2017a). Employers appreciate the importance of having an open environment in which disclosure feels possible. Yet, while the findings make clear that employers want workers to tell a manager about an LTC, support is not guaranteed. While it cannot be determined if employers' appetite for disclosure is driven exclusively for self-management support reasons, it is clear that disclosure could enable workers LTC self-management, albeit subject to work demands.

Attribution of Self-Management Responsibilities.

Research suggests that responsibility attribution (being accountable for the consequences of an action) is important for LTC self-management (Audulv et al., 2010). While people can be in charge of self-managing an LTC they may not take charge, thus see other people or factors as responsible. In this study, core LTC self-management responsibilities including disclosure, asking for support and undertaking self-management activities were attributed by employers to workers. This is despite activities being largely subject to workplace policies. For example, whilst taking sick leave can be viewed as a form of LTC self-management and absence policies as support, these are not without potentially undesirable consequences including warnings issued under a policy. Corrective approaches could undermine and discourage workers self-management responsibilities and promote presenteeism.

In contrast and similar to other studies, emotional and instrumental support responsibilities were attributed to managers via disclosure and modifications (Munir et al., 2005a, 2005b), further reaffirming manager's influence on workplace health management (Haafkens et al., 2011). These attributions and view of the manager as responsible for more tangible support implies a practical relationship with workers health. This was reinforced by employers' assumptions that workers are active and empowered about self-managing an LTC themselves and assumes controllability. This might not be true of workers' views and

abilities. In fact, attributions of personal accountabilities for health could induce stigma and discrimination (Täuber et al., 2018) by giving the impression that workers with LTCs are themselves responsible for health and work outcomes.

These findings provide new insight into employer perspectives about workplace health and LTC accountabilities. However, as employers do not regularly (if at all) communicate with workers about their LTC self-management and support needs, these could be misattributions. People with conditions attribute different levels of responsibility to affect whether they adopt a passive or active role in self-managing their LTC (Audulv et al., 2010). Misunderstandings about those responsibilities could mean employers do not provide support when workers need it and lead to confusion about permission to self-manage at work. Moreover, it is hard to see how workers can be fully responsible (and able) to self-manage when a large part of their ability to rests on whether they can be self-determined at work (i.e., have the freedom to make their own choices about self-managing an LTC). The reality is that the freedom and control workers have is greatly influenced by manager permission and job demands. Therefore, these attributions and assumed controllability could be at odds and undermine workers LTC self-management. In fact, employers may not realise the control they exert on workers' health.

Limitations, Recommendations and Future Research.

Alike to others (Coole et al., 2018) and despite the researcher's large professional network, recruiting employers was difficult. Despite this, the representation of senior health and wellbeing stakeholders from multiple sectors is a strength. As SME's are underrepresented in research the inclusion of three in the study is valuable and adds to its validity. While samples are smaller in interview research, and from the seventh interview similar and identical points were shared, key views could be excluded. Moreover, despite a semi-structured framework enabling the researcher to explore employers' views, the findings are based on their perceptions which might be inaccurate. The interview schedule and potential work pressures could have prevented participants from fully considering their responses. Additionally, the researcher's behaviour, gestures and vocal cues could have affected what the participants decided to say.

To gain broader insights to employers' views and attitudes about supporting LTC self-management, future research should build on these findings using a larger sample and different methods. This could be achieved via focus groups, which have been successfully used to build understanding of managers' views in studies of workers return to work from sickness absence (Holmgren & Ivanoff, 2007). Given SME's are key employers in the UK

and left out of self-management studies, smaller organisations should be sampled. Research examining employer views about the self-management support needs of workers with less examined LTCs would be particularly valuable including digestive, neurological and highly stigmatised conditions such as HIV, and by different LTC trajectories including progressive and degenerative conditions. Given the diversity, work stability implications and recent effect of Coronavirus on remote working, research should also examine self-management support for home-workers, the self-employed and zero-hours contracting. Finally, studies comparing the self-management and modification outcomes for workers by LTC disclosure status would provide useful insights.

This study has a number of practical implications. Firstly, the revision of existing support models to account for employers could be beneficial to generate workplace self-management narratives. Secondly, workable linkages between stakeholders including workers, employers and OH, that shares information about self-management activities could help enhance workplace support. Thirdly, existing workplace policies for modifications could be relaxed to make accessing them easier. Fourth, as LTC awareness is related to help-seeking behaviours (Taylor et al., 2014), government and workplace campaigns focused on LTCs (and managers) could help enhance awareness, tackle stigmatisation and promote disclosure. Finally, as disclosure is the route to employer support, a decision to reverse non-mandatory LTC disclosure in UK employment could be deliberated. Mandatory disclosure with caveats in place to protect workers could nudge disclosure for LTC self-management and compel employer support. Alternatively, changing work practices or employment regulations to reduce the necessity to disclose an LTC could be deliberated such as via organisational wide flexible working.

6.8 Summary and Conclusion

This study provides evidence that workplace self-management support is not purposefully provided to workers with LTCs. The findings suggest that while some workers receive support that might empower them to self-manage, such as via modifications, this is not an employer's main aim. Therefore, employers would benefit from guidance for supporting LTC self-management. The study highlights that workplace support depends on an employer knowing what needs to be supported, which is largely dependent on a workers' relationship with their manager and LTC literacy. Manager-worker relationships characterised by disclosure, care and leeway are more likely to support self-management. Nonetheless, disclosure does not guarantee LTC support and features of stigma and job demands, along with workers closedness can undermine support. To conclude, employers can have considerable control over if and when a worker self-manages an LTC. In light of these

findings workplace discussions about LTC self-management should be opened up to clarify attributions, and agree how activities can be supported and fitted around work. To secure buy-in to the importance of LTC self-management, it is prudent that steps are taken to raise organisational and especially managers knowledge and understanding of LTCs, including the value of self-management to health and work. This is to help the workplace be regarded as a supportive setting in which LTCs can and should be self-managed.

Chapter 7 – Study 4

7 A Narrative Interview Study of the Self-Management Support Needs of Workers with Long-Term Health Conditions

7.1 Introduction

This study aimed to explore the LTC self-management support needs of workers by examining their experiences of self-managing at work. The findings of the workers' survey, diary and employer interview studies presented in the preceding three chapters, suggest that workers might not receive the support they need. While a complex picture of LTC self-management was shown including variability in workers' self-management confidence and influential work factors, the data were unable to expand on people's experiences in great depth. If effective self-management support is to be provided in work settings, workers' experiences and views need to be accounted for. To achieve a deeper insight this study used a narrative interview method to empower workers to speak of their experiences.

While many people with LTCs are as able to work as those without (Bevan et al., 2016) the employment rates are lower (Varekamp et al., 2009). Work factors influence employment outcomes for people with LTCs including work policies, resources and support (McDowell & Fossey, 2015; Nielsen et al., 2017) together with personal factors such as health beliefs and self-management abilities (Bevan et al., 2016; Schulman-Green et al., 2016). Undertaking self-management actions to care for an LTC (Corbin & Strauss, 1988; Newman et al., 2004) can lead to improved self-confidence in self-management skills, resilience in dealing with set-backs and better regulation of emotions, which in turn can improve overall QoL (Barlow et al., 2002). There is growing evidence that workers with LTCs need to self-manage at work to stay well, manage daily tasks and remain productive (Shaw et al., 2014), because supporting workers' self-management can lead to better health and work outcomes (Redman, 2005; Schopp et al., 2017) and workplace support is crucial (Gallant, 2003; Shaw et al., 2014). Support includes managing role stressors, supportive supervision and providing policies and work modifications for workers to meet their physical, social and psychological needs (Reidy et al., 2016). However, there is little reference to the workplace in self-management support studies (Van Hooft et al., 2015; Varekamp & van Dijk, 2010) with most focusing on return-to-work rather than work retention (Hjärtström et al., 2018). Studies have examined return-to-work for workers with cancer (Braspenning et al., 2018; de Rijk et al., 2019; Kennedy et al., 2007), mental health (Cullen et al., 2018; de Vries et al., 2018; Nielsen

et al., 2011) and MSK conditions (Cancelliere et al., 2016) but surprisingly few examine processes that could promote staying at work.

Self-managing an LTC without adequate support can lead to psychosocial and practical problems (Heinrichs et al., 2018; Varekamp & van Dijk, 2010) that challenge workability. Problems could be alleviated by help and workplace LTC support is recommended (Foitzek et al., 2018; Stevenson & Farmer, 2017). Line manager and social support can positively influence workers LTC self-management behaviour (Heinrichs., et al., 2018; Munir et al., 2009a) and the workplace is recognised as a suitable venue for self-management support interventions (Glasgow et al., 2008; Smith et al., 2015). However, little is known about the support that workers' with LTCs value (Foster et al., 2015b; Vornholt et al., 2018). To address this gap the study explores workers' perspectives about self-managing an LTC at work.

To understand the complexities of workers' LTC self-management and support needs a psychosocial approach may be useful. The Psychosocial Flags Framework (Kendall et al., 2009) is the conceptual backdrop to this thesis (see Chapter 2, Section 2.3.3, p.35 for a detailed discussion of the conceptual model). As previously discussed, Flags help characterise obstacles to working and can be used to identify the support needs of workers with health problems (Coole et al., 2010; Nicholas et al., 2011). This study is informed by an interpretative narrative approach underpinned by the Flags Framework to examine, from a psychosocial perspective, workers LTC self-management support needs. Therefore, Flags were used to frame workers' narratives which, relevant to the study's work setting, allows people to tell of social contexts (Riessman, 1993).

The overall aim of this study was to explore the dynamics of workers' LTC self-management experiences at work. To the researcher's knowledge, this is the first narrative interview study examining the workplace LTC self-management support needs of workers.

The project's remaining research questions for this narrative interview study included:

8. How do workers self-manage LTCs at work?
9. How does the work environment affect workers' LTC self-management?
10. What worker attributes are important to workplace LTC self-management?
11. How are the self-management support needs of workers with LTCs met?

7.2 Method

The study's methodology is informed by narrative constructivism and concerned with how worker's structure individual LTC self-management experiences. Stories are moderately distinguished from narrative. Whereas stories aid our understanding of experiences (Henshall et al., 2017) and are tales that are told, narratives are the resources people draw on to construct and tell a story and are the framework in which stories are anchored (Papathomas & Lavallee, 2014; Smith, 2016). Participants can use illness narrative stories as a way of conveying what has happened (Frank, 1993). This could help capture the attention of often hard to reach stakeholders such as employers.

This study used a narrative interviewing technique predominately informed by Wengraf's *Biographic Narrative Interpretive Method* (BNIM) to interview participants with a diagnosed LTC (Wengraf & Chamerlayne, 2006). One of the benefits of the approach is that participants are allowed freedom in speaking about their workplace experiences. Narrative methods are recommended for health and illness studies (Hydén, 2008) and it is argued, come closer to representing people's health and illness experiences than quantitative methods (Anderson & Kirkpatrick, 2016). Collecting data in the form of personal stories and narrative provides a unique and potentially powerful opportunity to access data, that adds depth and meaning to our understanding of worker's LTC self-management experiences (Henshall et al., 2017). This could help enhance employers' understanding about worker's LTC self-management and the support that matters to them most. Moreover, the approach was influenced by the researcher's professional experience in workplace wellbeing which frequently involves storytelling. Storytelling has proven to be an engaging and constructive way for workers to share often difficult experiences of health and illness with people at work.

7.3 Participants

A sample of 14 workers with LTCs participated in the study. Participants were recruited from organisations and HR networks. The Study 1 survey had asked participants to indicate their interest in taking part in an interview study. A purposeful sampling (Palinkas et al., 2015) approach was used to recruit interested survey participants with diagnosed LTCs (n = 46). A final stratified sample was achieved ensuring that a range of LTCs was identified including mental health and MSK conditions. These two groups were selected as they are the most prevalent UK work-related conditions (ONS, 2019) and most common in the survey study's sample group. A third group of *other* LTCs was selected based on either the highly stigmatised features of an LTC, or limited awareness of how they are self-managed at work. For each LTC group a minimum of three narratives was obtained to ensure the sample represented the study's foci. This resulted in nine participants being identified and

interviewed through this process. Five additional participants were recruited directly through the researcher's workplace contacts to reflect different work situations and LTCs that were not represented in the survey.

7.4 Interview Framework

An interview schedule was developed by the researcher to collect workers experiences. The schedule was divided into four sections: 1) introduction; 2) narrative; 3) questioning; and 4) conclusion (Anderson & Kirkpatrick, 2016). After the researcher's introduction to the interview, the second and core section (narrative) of the framework was concerned with inducing narrative. The third section (questioning) was an optional semi-structured interview format designed to help the researcher probe and induce further narrative to fill gaps. The fourth section was concerned with the researcher seeking agreement from the participant that their narrative had ended, thus closing the interview. The approach and design was informed by the literature (Riessman, 1993; Smith & Sparkes, 2005, 2006, 2008; Wengraf & Chamerlayne, 2006) and the employer interview study data. As the analysis of the employer interview study data overlapped the worker interviews, the interview framework was partly informed by Study 3 thus not entirely sequential. The draft schedule was reviewed by two experienced qualitative researchers and resulted in no changes (see Appendix 13 for a copy of the final schedule).

The narrative interview adopted one main element of the BNIM (Wengraf & Chamerlayne, 2006). All participants were asked the same *single question aimed at inducing narrative* (SQUIN): *ó Tell me in your own words about your health self-management at work and support needs. I want you to tell me about any aspect of this including your self-management behaviour, your attitude and beliefs toward your ability to look after your health at work, and any events or experiences that form part*. This question was devised to allow participants to think about and share their workplace experiences without the constraints of set questioning. For section three of the interview structure, eight optional semi-structured questions were designed to probe workplace self-management including '*what do you think has caused you problems with*'. These questions were informed by and adapted from the Flags Framework (Kendall et al., 2009) and reviewed by an author of the framework resulting in two changes. All interviews were undertaken by the researcher who is trained and experienced in interviewing.

7.5 Procedure

Data were gathered from June 2018 to May 2019. Participants were invited by email to take part in an semi-structured interview and provided with a detailed information sheet outlining

the study's aims, objectives, interview structure and containing a consent sheet (see Appendix 14). All participants were required to provide written consent ahead of an interview and invited to ask questions. To establish rapport ahead of organising an interview, the researcher spoke to all participants via telephone (n = 9) or in person (n = 5) about the study, their choice to participate and what to expect. Demographic information (gender, age, tenure, LTC and sector) was collected from participants where they had not participated in the Study 1 survey (n = 5). The majority (n = 12) of interviews were conducted face-to-face at the participants workplace either in a quiet meeting room, office or workshop. In the face-to-face interviews and to avoid distracting participants from their story telling the researcher did not note-take. The interviewer made subtle cues by nodding or making vocal gestures for example to encourage continuation. Two interviews were telephone based due to participant difficulties to attend face-to-face. Telephone interviewing is suggested as a preferred alternative to face-to-face narrative interviewing (Holt, 2010). At the start of each interview, participants were reminded of the structure and read the self-management definitions used in the study. Participants were invited and able to ask questions at any point. The researcher read the SQUIN aloud to start the interview. At the end of each interview the researcher made brief field notes to capture immediate thoughts, reflections and thinking about their perceived influence. By interview 14 the researcher noticed categories being repeated again and again and felt able to answer the research questions (Glaser & Strauss, 2017; Fusch & Ness, 2015) with an adequate understanding of emergent themes.

Interviews lasted between 28 and 96 minutes (averaging 62 minutes) and were audio recorded with the participants written consent. The interview recordings were transcribed verbatim by an independent academic transcription service. All of the transcription's accuracy was cross checked twice by the interviewer whilst listening to the audio recordings.

7.6 Analysis

Data were subjected to an inductive narrative thematic analysis (Papathomas & Lavallee, 2014; Smith, 2016) and a deductive structural analysis utilising Frank's (1995) narrative illness types. The narrative thematic analysis was concerned with looking for stories within worker narratives and identifying themed content, meanings and patterns in the data. The structural analysis was concerned with identifying the plot and dimensions of the narratives to identify Frank's illness type and was concerned with its main shape (Ezzy, 2000).

Narrative Thematic Analysis.

Narrative thematic analysis was conducted where the researcher was initially immersed in the data by listening to all of the audio recordings and reading through the transcripts twice.

This was an 'indwelling' exercise where initial thoughts about stories and narrative(s) were captured in a notebook (Smith, 2016). The approach then taken to the narrative thematic analysis was informed by Papathomas and Lavallee (2014). All the transcripts were converted to a table format (in a Word document) to enable the identification of initial narrative themes. Then reading each transcript in turn whilst thinking about stories and hidden meanings (Smith, 2016) the left and right-hand columns were used for noting themes. The left-hand column recorded interpretive themes about abstract, underlying topics or theoretical insights and features such as the beginning, middle and end. In the right-hand column, themes stemming from participants' phrases were recorded (Papathomas & Lavallee, 2014; Yaskowich et al., 2003). As the analysis generated themes relevant to individual participants, the narratives were kept intact and separate.

The themes were reviewed across the transcripts, resulting in three main themes which incorporated 12 sub-themes. To aid analysis, the themes were then aligned to the coloured Psychosocial Flag(s) (see Table 7.1) which is this thesis's conceptual backdrop.

Table 7.1. ***Thematic Analysis Themes and Sub-themes by Psychosocial Flag.***

Flag	Theme	Sub-theme
Yellow	Worker's relationship with themselves.	Identity, self-management behaviour, self-deprecation, support needs, self-confidence, empowerment.
Blue	Worker's relationship with the employer, job and work.	Workplace policies, stigma, disclosure.
Black	Worker's relationship with sources of workplace self-management support.	Managerial and colleague support, wellbeing programmes, legal regulation.

Narrative Structural Analysis.

Frank's narrative structural analysis was used to identify components of the narratives and how things were put together (Frank, 1995) and is a dominant approach for understanding illness in a social context (Hydén, 2008), and used in studies exploring LTC experiences including HIV and cancer (Ezzy, 2000; Henshall et al., 2017; Miconi et al., 2015). Data is analysed using three illness narrative types: 1) *restitution*, a socially desired story of illness where an affected person is the hero of their illness, recovers and is well again*;* 2) *chaos,* stories which reflect life and illness never improving; and 3) *quest,* stories in which illness is

accepted and used with life transformed. The approach allows for changes in illness experiences.

To undertake the structural analysis, the thematic analysis was cross-checked with the characteristics and plot features of Frank's illness types (Table 7.2). Therefore, the transcripts from the thematic analysis (in which the researcher had noted preliminary thoughts about plot and narrative) were copied and saved to a separate Word file. The researcher then modified the table of each transcript format adding an additional left-hand column. To identify which type the participant stories were most like, the researcher manually took each transcript, in turn highlighting relevant features whilst cross checking with Frank's illness types. The three illness types are a way of helping build understanding of the linkages between individuals, an LTC and contextual experiences (Thomas-MacLean, 2004) and is a practical way of examining the work context in this study. Notes were then added to the additional column with sections of text highlighted, to record linkages with the narrative types and to aid the synthesis of findings and researcher's reflection. Finally, the researcher then read the transcripts again, manually writing a short, summary narrative for each participant to capture her reflections of the narrative's storyline.

Table 7.2. ***Characteristics and Plots of Frank's Illness Narrative Types.***

Type	Characteristics	Plot
Restitution	¶ A person experiencing a fall and rise in health; ¶ An expectation of a return from ill health; ¶ Socially perpetuated, ideal of a person recovering health; ¶ A person has a passive role, receiving medical treatment; ¶ Body is seen as temporally broken and fixable; ¶ Person as the 'hero' overcoming illness; ¶ Responsibility limited to getting better.	¶ Begins with being healthy; ¶ Followed by illness experience; ¶ Looking forward to a return to health; ¶ Moving away from and returning health; ¶ Stories of illness, tests, results and treatment; ¶ Medicalised.
Quest	¶ Illness as a journey and mission; ¶ Illness incorporated into life; ¶ Person undergoing transformation; ¶ Learning & insight through illness journey; ¶ Person an active agent, not recovering, living with illness; ¶ Meeting illness head on, illness framed as a challenge; ¶ Acceptance of illness and something to be gained.	¶ Presentation of health as a driver for change; ¶ Relating of events in a memoir; ¶ Declaration of intentions motivated by illness; ¶ Transformation and reinvention as features.
Chaos	¶ Disjointed narratives without structure; ¶ Helplessness and weakness; ¶ Recovery is unsure with life never improving; ¶ Person thinking back on the chaos; ¶ Interruptions caused by illness; ¶ Life never getting better and lack of sequence; ¶ Being swept along, lack of control.	¶ Lacks order and timing; ¶ Hard to discern narrative; ¶ Sequence of experience(s) indecipherable; ¶ Anxiety provoking and hard to hear.

7.7 Results

Demographics.

Participants (n = 14) health, work and disclosure demographics are presented in Table 7.3. The LTCs were grouped into three categories including mental health, MSK and other conditions and with a fairly even spread of participants across the groups. The mean age of participants was 47 years with males (n = 7) and females (n = 7) evenly represented. Most participants (n = 9) worked for not-for-profit entities in the public sector (n = 4) and a National Health Service hospital (n = 5). Participants have an average tenure of a decade *(M* = 10.2).

Disclosure Demographics.

Disclosure is concerned with workers sharing information about an LTC at work by making it known to people. Workers might disclose an LTC directly by telling someone about an LTC or partially disclose by alluding to an LTC that is unspecified. Disclosing an LTC is considered an important aspect of self-management by some researchers, healthcare professionals and employers (Brohan et al., 2012; Munir et al., 2005b). In this study, 11 participants had fully disclosed their LTC at work to a manager or colleague. One worker affected by the mental health condition bi-polar disorder and another with an MSK condition had partially disclosed. One worker affected by HIV had not disclosed to anyone at work.

Table 7.3. ***Socio, Health and Disclosure Demographic Characteristics of Worker Interview Study Participants.***

Demographic	Participants *N* = 14	n %
Gender	Female	7 (50.0)
	Male	7 (50.0)
Age	Average years (range: 23 – 69)	***M*** = 47.1 (***SD*** = 12.5)
		n %
	Age group: 20 - 30	1 (7.14)
	31 - 40	3 (21.4)
	41 - 50	4 (28.6)
	51 - 60	4 (28.6)
	Over 61	2 (14.3)
Tenure	Average years (range 1 – 18 years)	***M*** = 10.2 (***SD*** = 6.22)
		n %
Long-term health condition	Mental health	5 (35.7)
	Musculoskeletal	5 (35.7)
	Other:	4 (28.6)
	- HIV	1 (7.1)
	- Chronic fatigue syndrome (CFS)	1 (7.1)
	- Lyme disease	1 (7.1)
	- Fibromyalgia	1 (7.1)
Sector	National Health Service	5 (35.7)
	Public sector organisation	4 (28.6)
	Professional services, banking & finance	5 (35.7)
Workplace disclosure:		**n %**
Disclosed (n = 11)	Mental health	4 (28.6)
	Musculoskeletal	4 (28.6)
	Other: CFS, Lyme disease, Fibromyalgia	3 (21.4)
Partially disclosed (n = 2)	Mental health	1 (7.1)
	Musculoskeletal	1 (7.1)
Not disclosed (n = 1)	Other: HIV	1 (7.1)

Narrative Thematic and Structural Analysis Findings.

The findings from both analyses are presented together. The narratives and their sub-themes are discussed under the Psychosocial Flags Framework. In terms of structure, 13 of the narratives had a dominant *quest* storyline with one identified as *chaotic*. This could be explained by the nature of LTCs and that *restitution* from an LTC is unlikely. Narratives can reflect characteristics of all narrative types. This was reflected in the study and discussed. To protect confidentiality participants are identified by their gender and LTC type.

Yellow Flags.

Yellow flagged themes are concerned with participants thoughts about themselves and their workplace self-management behaviour(s) capturing identity, self-deprecation and stigma, professionalism, confidence, control and empowerment.

Identity Disruption and Self-deprecations.

Frank related that '*in the beginning*' (Frank, 1995, p. 56). Unprompted, 11 participants began their narrative with an explanation of their illness and diagnosis experience. *Quest* illness types dominated participants discourse when talking about their experiences of identity disruption. How participants see themselves was apparent in self-deprecating talk. Grappling with personal identity disrupted by an LTC was a continuing challenge. Nearly all appeared to internalise stigma(s) about LTCs (e.g., being weaker than others). Self-deprecation could be an obstacle to workplace self-management. One participant believed LTC weaknesses should not be exposed to access support:

> *Iôm sure I canôt be the only person in the worl can do about this that Iôm not already doing, kn (LTC) as a weakness. And who wants to expose their weaknesses? I think if I needed something (to self-manage), they would be happy to help but Iôm not would. Female*, MSK.

Beliefs about professional identities undermined several participants self-management, as two described:

> *I donôt feel thatôs a professional thing to do. meeting, back hurts. To me that sounds awful.* Female, MSK.

I want to be perceived profes s i o n a l l y . I ôm w o r r i e d t h a t i f a ma s u p p o r t , t h e y w o n ô t t r u s t me t o m a n a g e . t h e w o r k Female, MSK.

These participants active roles in managing their LTCs was reflected in their decisions not to self-manage, possibly to maintain a professional and *hero* profile for themselves or employer.

Self-Management Behaviours, Support, Confidence and Empowerment

Whilst some participants hid or did not undertake self-management activities at work, others did self-manage. Mainly medical and practical activities were described (see Table 7.4).

All participants recognised and described their *quest* and active role in self-managing their LTC. Conceptually, participants did not appear to consider themselves 'self-managers.' Nonetheless, it was apparent that participants utilised self-management processes at work (e.g., problem-solving), accessing resources and enhancing self-efficacy (Lorig & Holman, 2003). One participant described her approach to self-managing MSK symptoms:

I ô v e l e a r n t t o m a n a g e i t f o r m y s e l f é i f I ô m d e l i v afterwards. I try to then go home. Female, MSK.

Table 7.4. ***Participant Self-Management Behaviours.***

Medical	Practical	Emotional
¶ Taking medication; ¶ Attending medical or OH appointments; ¶ Taking sick leave; ¶ Participating in a return to work programme; ¶ Responding to symptoms.	¶ Taking rest breaks; ¶ Working from home and flexibly; ¶ Part-time working and reducing commuting; ¶ Managing workload and demands; ¶ Managing diet and exercise; ¶ Asking for help; ¶ Maintain work/life balance.	¶ Thinking positively and self-talk; ¶ Laughter and talking to colleagues; ¶ Concealing weaknesses; ¶ Building resilience and confidence; ¶ Mindfulness; ¶ Distracting oneself.

When thinking about their support needs, participants signified a need for practical support such as by altering hours. Work modifications stood out as the most important form of self-management support. Modifications were not always obtainable, and narratives contained *chaotic* elements where participants perceived they lacked this control:

You can ask for flexible working anytime. I ôve spent
I knew there was absolutely no point because I knew they would say no. Female, MSK.

Narratives were characterised by comments about confidence, control and empowerment. These attributes were intertwined with identity dialogues. Broadly, those perceiving control suggested they felt empowered to self-manage at work. Indicative of the *quest* illness narrative, one participant demonstrated high-levels of control, confidence and empowerment, thus not everyone felt they needed self-management support:

I ôm not really sure there is a lot more of that sou
When I ôm more focussed
been for so long, managing it myself and having a good handle on it, and keeping it
together, I ôm not really sure that t. Male, MSK.
Where is anythi

Long-term health condition literacy is important for people's self-management. For one participant with a mental health condition, his confidence to self-manage at work was improved by mastering responses to symptoms:

I feel like I ôm dead I have days when I feel anxious about things, I do
still have days when I feel anxious about things,
but I ôm able to recognise that a mental health. Male, mental health.
with it

This *quest* explored his integration of his mental health condition into working life by managing symptoms. His confidence was partly attributed to features of work including a supportive manager, who in some way was embedded in the narrative, reinforcing and empowering his self-managing behaviours:

My manager is not hands-off, but gives that relaxed attitude and is always there for me to
talk to without micro-managing and controlling. We ôre very m
and command in the workplace. Male, mental health.

All participants cited perceived work demands as important and managing demands was a

form of self-management to reduce stress, enhancing control and confidence. One participant had adopted strategies to manage demands for their mental health:

I have to be strong. Without being resilient, I would crumble for sure. Now when people come to me and expect things done, I say ñ o , I ô m r e a l l y ò s The analogy I I c a n ô t sometimes use to the people who come to me demanding things, itô s l i k e i n m y g e n p r a c t i c e , w h e n I g o i n t h e r e , t h e y h a v e a n u r s e . walk in. Male, mental health.

His *quest* inferred a facet of wanting to move things forward. This was characterised by a subtle irritability at his employer in his use of an analogy to demand people work with him differently. A different participant seemed more confident in his *quest* and control to manage his work and LTC.

There are jobs which require me to go out and make change happen and b e p r o a c t i v e . I always in control. I can lean in or lean back depending on how my health is feeling. Male, mental health.

Participants who perceive they have limited control of job demands lacked confidence to self-manage. Resembling a sense of *chaos* with Frank's features of '*l i f e n e v e r g e t t i n g* (1995, p. 97) a female participant with chronic anxiety and depression lacked control:

I ô m w o r r i e d a b o u t b u i l d i n g u p a b a d r e p o r t , o r a m I i n t h e r i g h t j o b . B e c a u s e s i n c e I ô m s t r a i g h before. I feel quite a lot of pressure. Not just to keep it, but financially as well. I need this job. Female, mental health.

This muddled narrative was '*hard to hear*' (Frank, 1995), shifting from work, to university, to job and financial security. Control appeared to be external, with work expectations undermining her self-management confidence and giving *ó a s e n s e o n t e h a i t s n i o n c o n t r* (Frank, 1995, p. 100):

I ô m e x p e c t e d t o b e i n , s m o a n t a h g a i t n g c a m n y b h e e a l n t h i s c s o u n e d i i myself to do things that I wouldn't normally do, I feel like I have to do them. So, I neglect my health to keep my job essentially. Female, mental health.

Blue Flags.

Blue flagged themes are related to worker's perceptions of the workplace, capturing participants relationship with their employer, job and work factors including policies and practices, stigma and disclosure.

Workplace Policies and Practices.

Participants explained that self-management support can be helped by work policies including modifications, return-to-work and absence processes. Two types of modifications emerged as important enablers for LTC self-management; adjusted hours and flexible working. For instance, adjusted hours enabled one participant to better self-manage symptoms. Her story reflected a *restitutive* plot in her intentions to get well and maintain health:

> *So, spoke to my doctor. We talked it through, arrangement, four full time days, where I donôt have to if I donôt get hebreecaunsteilIôavelihtatdeabrietalalfytebrad with that.* Female, MSK.

Occupational health services were involved in securing modifications for the majority (n = 12) of participants but intermediary support could undermine employers' understanding of worker's LTC needs, by obstructing communications between them. Therefore, although OH support was helpful for some, this was not always so:

> *They (OH) werenôt really interested in anything about how I was self-managing and they seemed to come across as if they doubted that there was anything genuinely wrong with me.* Male, other.

Echoing with *restitution,* this participant adopted an active role in dealing with his condition as he later explained his activation to self-manage:

> *Theyôve backed off sending me to OH each time dealing with it, heôs explained it. Whatôs the p again because it ôs positive effect? Male, other. have any*

Additionally, most participants described taking time off work due to their LTC and appreciated being supported to take sick leave. Sickness policies were reported to

negatively affect relationships with some employers, where they conflicted with the reality of LTCs. For some participants, workplace sickness policies featured a Bradford factor scheme which is used in the UK by various employers in the private and public sector. The scheme applies a management weighting to flag up instances of short-term absence as a warning system for poor attendance and organisational disruption. This approach can be conflictual when workers self-manage by taking sick leave as it focuses employer attention on reducing absence, rather than providing LTC support. Five workers reported the approach having a disempowering effect. This was described by a participant with CFS:

Instances is a problem, and I had a time where I was poorly, I felt so under pressure to come back. I came back, it made me worse and I had to have more tim come back it would have been one period rather than a period of four days and a period of five days. So, I was totally screwed over by it. I was trying to do the right thing and it was like ñoh, your fault was likeô what do you want me to do about it? Female, other.

This narrative contained all three illness types, with c*haotic* features indicated in her mention of being '*screwed* and indication of helplessness.

Other participants were able to self-manage via work-modifications thus avoiding sick leave. However for one participant an informal modification to home-work for a period due to mobility restrictions was declined. Representative of *quest*, he reframed his limitations as a challenge to respond to with modifications, but this was at odds with his managers' beliefs:

I was told that I would have to take sick leave. The boss of my boss in that particular thing sent out an email that really upset me to be honest, and just find it really difficult walking. Male, MSK.

Workplace Stigma.

Stigmas arouse feelings of disapproval about something and arise because of discrepancies between identities (Goffman, 2009). Stigmas define traits and characteristics of groups to devalue and discredit and at work they present as prejudice, stereotypes and discrimination (Brohan & Thornicroft, 2010). Long-term conditions are often stigmatised and some more than others including mental health conditions and HIV (Earnshaw et al., 2014; Little et al., 2011). Workplace stigmas affected some participants self-management, reinforcing views of incompetence and unpredictability (Krupa et al., 2009). Furthermore, stigma is associated with non-disclosure of an LTC (Corrigan & Rao, 2012), which is required for accessing

support including work-modifications and legal protection. Despite wanting to be open, one participant's partial disclosure of a mental health condition (bi-polar disorder) is reinforced by societal stigma:

> *There's very negative media coverage...The reality is people are much more likely to be a harm to themselves, not others é the media would make sure that when I'm getting depressed, I'm not feeling suicidal. I'm going to have to make sure that I manage that as part of my self-management. I just think that people (at work) are very unsympathetic towards that.* Male, mental health.

Frank told of *restitution* that *ó people learn this narrative from in how illness* (1995, p.78). Although this participant's story is not of *restitution,* the idea of institutions modelling illness is helpful in interpreting what was said. Media stories can display an inaccurate model of illness and this participant perceives this to have an organisational effect, obstructing him from accessing support.

A stigmatised conversation with a manager over a decade ago is the reason for one participant's ongoing non-disclosure of his HIV:

> *He said to me, ñare you going to tell anyone else?ò I said ñnoò, and he said, ñI would probably say not to, because what I don ôt want for you iòs Which I got, but it to be also made me think that it was something that I should be ashamed of*. Male, HIV.

This manager introduced social-workplace stigma to this participant, who now expects similar responses from others. His *quest* described how he had taken control of his LTC by non-disclosure and as a result, he does not self-manage at work. *Chaotic* elements emerged as he shared his thoughts about the interruptions a change to his medication self-management regime might cause:

> *If they said you need to go on these tablets and keep them in the fridge at work. And someone would see me taking a tablet every day. I think I could only get away with that say, to lôise a and something else é.* Male, HIV. *worries me*

This demonstrated tensions between his *quest* to self-manage but not at work due to non-disclosure. Moreover, this seemed to perpetuate his self-stigma thus reinforcing workplace stigmas and discouraging his self-management.

Black Flags.

Black flags overlap with blue flags. In this study they are related to broader workplace, occupational and societal factors. This captures the key sources of self-management support described including manager and colleague support, workplace wellbeing programmes and legal regulation.

Forms of Workplace Support - Managers and Colleagues.

It is known that social support can enhance LTC self-management (Gallant, 2003). Managers and colleagues were identified by all participants as important forms of self-management support. These relationships might be considered 'therapeutic' and social, characterised by compassion, support and non-judgemental behaviour in a safe environment (Kornhaber et al., 2016; Mottram, 2009). Participants were more positive about informal forms of support which was related to colleagues helping and encouraging their self-management. Whereas formal support was more often associated with managers utilising processes to sanction time for self-management.

Manager support was provided in two main ways: 1) during day to day interactions and/or 2) as part of workplace processes related to modifications. Interactions with managers were described to be affected by participants confidence, fears, trust, stigma, work demands and expectations. Empathy, care and regular communication about an LTC appeared to underpin positive relationships. Those with supportive managers seemed more confident to self-manage, cope with work demands and access support.

For one participant '*difficulty* explained his reluctance to pursue a formal modification to self-manage exercise:

So, if I trusted my manager, that he wanted to get to the outcome that is best for my health, I would go through that process. But see I think he ô t trus wants to go through processes to protect him from having a real conversation about how to keep me well. Male, mental health.

He explained how he was disempowered by his manager, requiring him to think of ways of covertly self-managing:

> *I need my sleep. I need not be tired. I need not be stressed. These are all triggers to me getting unwell and is exhausting me. I am having to work around creating ways in which to make sure Iôm more relaxedé So Iôll and then rush to wait to the pool.* Male, mental health.

His *quest* goes back and forth with efforts to self-manage impeded by his manager's behaviour, attitude and work process. *Chaotic* elements emerged where he infers lost control but is overtaken by his *quest* to self-manage.

About half of participants described receiving general work-related support from their manager with their LTC, although it was acknowledged by most that support varied:

> *My current manager would be totally and utterly supportive.* Female, MSK.

> *My manager would probably be alright, Iôm just* Female, other.

Other forms of support were identified. Emotional and practical support provided by colleagues was important to all. For some, colleagues providing encouragement or taking on work was more important than managers' support and in most participants' *quest* to integrate their LTC into work, colleague support had been sought. For some, reciprocal and supportive actions by colleagues gave them time to self-manage and be themselves:

> *We work collaboratively, if thereôs something I* *others will pick it up for me, and I would do the same for them.* Female, MSK.

> *You donôt have to put an act onéIf you have to be isolated day, that makes it exhaustive to be at work. In the environment I have, I can be who I want to be. If I want to sit quietly people know, by the same token if they know I need a hug, I get it. Iôm lucky.* Female, MSK.

Where colleague support was unavailable it pressured some participants to go to work or act well when that is not how they felt. Colleagues' inflexibility and unhelpfulness could undermine self-management:

You ôre kind of restricted or a kt. imes when people ju as flexible é When I ôve gone to somebody and be said I ô willing to cover my Female, MSK. *They ôve said n*

Furthermore, participants felt that their own behaviour could affect whether they received self-management support from colleagues. One participant explained:

If you ôre sad, quiet and wanting to be left to you whet not é I donôt think I need the level of sever of nice support th offered. Female, MSK.

Workplace Wellbeing Programmes.

Workplace wellbeing programmes were not important self-management supports for participants because of their perceived lack of applicability to a worker with an LTC:

We do have a wellbeing page which does go through things like diet and mental health. Things that é specifically. Male, HIV. me, there ôs

Most workplace wellbeing programmes are concerned with preventative behaviour to maintain health and avoid an LTC. Therefore, such programmes might not be beneficial to workers with LTCs where recovery and *restitution* is unattainable.

Forms of Workplace Support - Legal Regulation.

Lastly, the reasonable adjustment duties stemming from legal regulations was important. Therefore, having regulatory knowledge and understanding appeared useful to self-management and accessing support for modifications for time-off:

And I said, well actually, the law allows me that time off to have rehabilitation, to attend an appointment because under the law I ôm disabled. better. Female, MSK.

Using the regulations to access self-management support in this way helped the participant's LTC improve. Her ability to take an active role in her *quest* was affected by her

own efforts to gain knowledge and literacy. A lack of understanding could have led to unfair treatment and hindered her rehabilitation, workability and opportunity to act with agency.

7.8 Discussion

Many people with LTCs want to work even if not 100 percent well (Black, 2008; Hjärtström et al., 2018) though may need support to self-manage problems to maintain work ability. The aim of this project was to examine the self-management support needs of workers with LTCs utilising narrative and structural methods, to interpret the data under the conceptual Psychosocial Flags Framework (Kendall et al., 2009). The findings provide unique insights into our scarce understanding of these needs. The narratives highlighted that personal, workplace and societal factors interact to influence the extent to which workers feel supported, confident, and empowered about self-managing an LTC at work. Workers' narratives indicated a need for employers to provide relevant support by fostering the working conditions in which they could more easily self-manage an LTC. This includes providing work modifications, as well as relational support that facilitates self-management actions. Similarly to Buck et al (2011), yellow, blue and black Flags were useful concepts for identifying the obstacles to self-management described. Frank's (1995) illness types provided insights into how workers think about their self-management experiences.

Overall, this study confirmed that the self-management support needs of people with LTCs are diverse (Dwarswaard et al., 2016) and that the decisions people make about their self-management can affect work outcomes (Smith et al., 2015). The main findings for each research question are:

1) Workers can fit self-management activities into and around their job when they perceive this is possible*;*
2) Modified working hours, flexible working and workplace support were the most important self-management enablers;
3) Obstacles to self-management focused on a lack of employer support for what the worker felt would be helpful to maintain workability;
4) Stigmatisation is an additional obstacle to effective self-management that inhibits suitable support;
5) How confidence and empowerment in self-managing at work are enacted depends on how the above factors combine in a given situation.

Similar to other studies (e.g., Saunders et al., 2018; Torp et al., 2012), the most important form of self-management support that participants spoke of was modifications including altered hours and flexible working. Modifications were mentioned more than altered tasks. This translates as being given the ability to schedule work to accommodate symptoms,

which meant that participants felt trusted and had the time to fit in self-management and decide how, where, and when they self-managed an LTC. Work modifications made workers feel they could maintain work ability. Workers who had the opportunity to organise their work felt more supported and empowered to self-manage at work, and were more likely to manage work demands than those without that opportunity. Similar to other studies, participants without modifications indicated that greater work flexibility and control would benefit their self-management (Boot et al., 2013), though it is not clear from this study's narratives if participants had spoken to their employer about modifications and support needs.

Furthermore, this study finds that the social-support network available at work complemented work organisation (i.e., manager and colleague support), influencing individuals' facilitated personal confidence to self-manage (Koetsenruijter et al., 2014). It was clear from all participant narratives that workable and sanctioned modifications to hours, ways of working and flexibility would be useful as a specific self-management support measure. This corroborates with Boot et al's (2013) recommendation that modifications should be considered a preventive health measure, though it is re-recognised that this may be unfeasible for some work types (e.g., fixed-shifts). This could also be at odds with regulatory provisions such as 'reasonable adjustment' duties in the UK (Equality Act, 2010).

Stigmas were not universal, but all participants felt stigmatised by their LTC in some way. Stigmas were manifested in workplace culture(s), in managers and colleagues communications and was indicated in work modification decisions. Those participants describing non-stigmatised managerial support including receiving care and modifications, were more confident to self-manage at work, reaffirming the importance of managerial support to worker's health and wellbeing (Hämmig, 2017). As shown by others (Earnshaw et al., 2012; Kato et al., 2016), anticipated workplace and managerial stigmas stopped some participants from undertaking self-management actions. Stigmas also manifested in participants themselves and were demonstrated in workers' disclosure and self-management decisions.

This provides further evidence relating to how LTC stigma is experienced at work and its effects, including reduced self-esteem and confidence to achieve goals such as undertaking self-management actions (Bandura, 1997; Corrigan, 2004, 2006). These findings are consistent with other research suggesting that disclosure occurs when accessing modifications (Norstedt, 2019). However, modifications did not prevent stigmatisation, and

participants did not always have the confidence to access the self-management support they needed, regardless of disclosure. Both experiencing stigma and living with an LTC are stressful (Earnshaw et al., 2014). In this study, stigmatisation can be considered a work stressor that undermines LTC self-management (James et al., 2018). As stress can aggravate LTCs and given stigmatised people with long-term conditions are at risk of withdrawing from work (Carr, 2016), breaking down stigma could support self-management.

Limitations, Recommendations and Future Research.

Though the study's findings cannot be generalised, they present a novel descriptive insight to workers LTC self-management. Such a detailed insight was not achievable via quantitative methods which do not allow participants to share experiences freely. While the researchers' own biases and personal experiences of self-managing an LTC at work might have affected the findings, this possibility was minimised by the checking of findings with an independent and experienced researcher. This study's findings suggest that the Psychosocial Flags Framework could be a useful tool for employers to identify obstacles to workers' LTC self-management and could help focus workplace action(s).

To enhance managerial support for accommodation through job modifications, it is recommended that the benefits of LTC self-management and conceptualisation of self-management as a necessary and preventative health measure are integrated into existing workplace legal duties, OH and wellbeing briefings. Moreover, stigma should be assertively tackled from organisational and health perspectives, as a stressor to be managed and mitigated in order to support workers with LTCs to maintain a sense of self that promotes self-management. Employers can also do more to help workers with LTCs enhance their psychosocial resources including social support, by delivering skills and knowledge sessions that enhance resilience strategies.

Future studies should scope workplace knowledge interventions targeted at enhancing self-management literacy and dissolution of LTC stigmas. Moreover, studies exploring the prevalence of modifications for LTCs, their features and the factors affecting their sanctioning would be beneficial. Lastly, OH's role in supporting worker's LTC self-management was unclear in this study. Future research examining their role and influence seems important.

7.9 Summary and Conclusion

This study highlights the potential for improving the workplace self-management support provided to workers with LTCs. Psychosocial factors interact to provide a self-management

supportive work environment which is characterised by work-modifications, disclosure, low levels of stigma and relational support with managers and colleagues. These features enhance confidence and empowerment for workers with LTCs to self-manage at work. Unaccommodating work environments can undermine and disempower workers with LTCs from undertaking the self-management behaviours they believe are helpful, potentially undermining health and work ability. In light of these findings and the high prevalence of LTCs amongst working populations, it is recommended that employers consider how they are tackling self-management obstacles, and take steps to enhance the psychosocial resources of workers with LTCs to self-manage at work.

Chapter 8

8 Discussion

This thesis examined the workplace self-management support needs of workers with LTCs. Studies associate low activation and self-efficacy with reduced self-management confidence and behaviours, poorer coping strategies and increased support needs (Bandura, 1997; Dixon et al., 2009; Hibbard & Gilburt, 2014; Hibbard et al., 2007b; Lorig et al., 2001). Therefore, this project's main interest was in workers *confidence* to self-manage an LTC at work. Using mixed methods, four separate studies (a worker survey, worker diary, employer interview and worker interview) were conducted to gain a comprehensive and in-depth understanding of LTC self-management within work. Overall, the studies' findings suggest that workers with LTCs experience work more adversely compared to those without. Workers' self-management confidence is affected by an interaction of multiple psychosocial factors at any given time. Findings from the survey study suggest that whilst most workers with LTCs were activated and self-efficacious, not all were.

This project had four research objectives (RO). The first objective (RO1) sought to understand in what ways workers self-manage LTCs at work. The results suggest that workers self-manage by disclosing an LTC to be empowered to fit diverse self-management tasks around work. The second objective (RO2) examined how work features impact workers' LTC self-management (and vice versa). The results suggest that workers' self-management is determined by a balance of perceived demands, resources and support. This balance is affected by a complex interaction of psychosocial factors including activation, disclosure, stigma, work stress and demands, work engagement and manager support. For the third objective (RO3), workers' self-management support needs and support received at work was examined. The results suggest that workers receive general support via workplace policies and processes, but need manager support to empower them to self-manage. Objective four (RO4) examined employers' understanding and perspectives of workers' LTC self-management support needs. The results show that employers are ill-informed about self-management support, therefore do not purposely provide it.

This section brings together the four studies with the literature reviewed in Chapter 2. To inform the discussion by summarising the data, each study's main findings were analysed together in a matrix format by study and RO. This was to highlight cross-study themes, identify key findings and the main elements to this project. Therefore, this section shows

how the studies' research objectives, hypotheses and questions (presented in Chapter 3, Section 2.6 and each of the studies' chapters) lead to the key findings and conclusion. The findings specific to the project's hypotheses are summarised in Table 8.1. From the four RO's six key findings emerged and the matrix analysis identified six elements to the project that reflect the main thesis themes.

The six key findings are:

1) Workers' with LTCs self-manage in different ways, have different support needs and their levels of activation differ;
2) Workers with mental health LTCs have greater self-management support needs;
3) Workers adopt a LTC disclosure strategy to access support for flexibility and empowerment, which employers depend on to be alerted to a support need. Disclosure can be undermined by stigma, closedness and work demands;
4) Manager support characterised by care, flexibility, leeway and unstigmatising attitudes empowers workers to fit self-management around work;
5) Employer support for stress management and work engagement could be beneficial to workers' LTC self-management;
6) Employers do not provide meaningful LTC self-management support to workers, but they have a substantial role to play and need guidance providing support.

The six elements are: activation; different self-management of different LTCs; disclosure and stigma; support; work stress, demands and engagement; and features of employers' views.

The results lead to an overall conclusion. Workers do not want or need to be told by their employer what LTC self-management tasks and behaviours they should adopt and when. It was noteworthy that employers' wellbeing, health promotional and employee assistance programmes emerged as unimportant. Instead, workers with LTCs want to work in an environment where working conditions enable them to self-manage by empowering them. This project is the first to highlight UK workers' support needs for empowerment to self-manage an LTC. The findings should help improve workplace self-management support by guiding employers and workers.

The project's key findings are discussed under the six element headings with the applicable RO(s) and hypothesis highlighted in brackets.

Table 8.1. ***Project Findings Related to the Proposed Research Hypotheses.***

No, Study	Hypothesis	Findings	Chapter, Page
1. Survey	Working conditions, support and workability will differ between workers with and without LTCs.	Hypothesis supported: workers with LTCs perceive significantly more stress regarding control and change. Workers with LTCs have less support resources including from managers and peers compared to workers without LTCs, and report lower current workability.	4, 83
2. Survey	Activation, self-efficacy, wellbeing, QoL, working conditions, workability and support will differ between workers with different LTCs.	Hypothesis partly supported: significant differences emerged in activation and wellbeing between mental health and all other LTCs, and current workability with other LTCs. Significant differences emerged in working conditions including: change and role between mental health and other LTCs; peer support between MSK and other LTCs; manager support between mental health and other LTCs; and work demands between mental health and other LTCs.	4, 84
3. Survey	Activation will be positively associated with workers' self-efficacy, wellbeing and workability.	Hypothesis partly supported: activation was significantly positively associated with workers self-efficacy, wellbeing and current (but not future) workability.	4, 87
4. Survey	Workers who have disclosed an LTC at work will be more activated, self-efficacious and supported.	Hypothesis partly supported: workers who had disclosed an LTC had significantly more workplace support resources. Workers who had non-disclosed were non-significantly more activated and self-efficacious to self-manage.	4, 88
5. Diary	Workers confidence to self-manage an LTC at work will change over time.	Hypothesis partly supported: the increase in workers self-management confidence over time was non-significant. Significant variability in the change of self-management confidence between workers over time emerged.	5, 117
6. Diary	Changes in perceived control of an LTC will explain changes in self-management confidence over time.	Hypothesis not supported: changes in workers LTC control did not explain changes in self-management confidence over time.	5, 118

No, Study	Hypothesis	Findings	Chapter, Page
7. Diary	Changes in support satisfaction will explain changes in self-management confidence over time.	Hypothesis not supported: changes in workers satisfaction with support did not explain changes in self-management confidence over time.	5, 118
8. Diary	Changes in work engagement will explain changes in self-management confidence over time.	Hypothesis supported: significant variation in the growth model emerged. The difference in the change of workers self-management confidence over time was related to their work engagement. Lower levels of work engagement were associated with lower self-management confidence.	5, 119

Activation.

Activation reflects a person's knowledge, skills, confidence and readiness to self-manage an LTC and helps explain workers' self-management. This is the first research to examine the activation of a UK population of workers with LTCs. In this project workers self-managed with different levels of activation (RO1). The Study 1 survey results suggest that most workers had the resources and motivation to self-manage an LTC. In this project, more participants were in the highest activation levels 3 (38.4%) and 4 (28.7%) than in comparative LTC studies (46% and 13.0% respectively) (Barker et al., 2018). Workers' fairly high and stable satisfaction with practical, vocational, psychosocial and relational support (over the 10 week diary study period), suggests that adequate support was received and could help explain the activation levels. As research studies have found that higher activation is associated with better self-management (Do et al., 2015; Gao et al., 2019; Hibbard et al., 2007), the activities reported in Studies 1 and 2 are a novel insight to how workers self-manage at work when activated to do so. However, the variation in workers' activation scores (range 29 - 91.7) and self-management confidence ratings (range 0 -10), shown in the survey and diary studies, suggests that different LTCs affect workers differently. It follows that people's self-management behaviours and support needs could differ.

This research found that workers with mental health conditions were least activated when compared to those with other LTCs. In Hibbard et al 's (2005) development and testing of the activation measure, it was similarly found that, compared to LTCs (including hypertension, diabetes, arthritis, lung disease, cancer and chronic pain) people with the mental health condition depression had lower activation levels. In this project, workers with mental health conditions including depression, were also least self-efficacious and reported the lowest current workability. This corroborates other studies in which workers with mental health conditions were found as least self-efficacious (for work modifications) (Munir et al., 2009a), and vulnerable to adverse work outcomes affecting workability including impaired performance (Lerner et al., 2010). But provides new evidence that workers with mental health LTCs are lower activated. Certainly in the Study 4 interviews, workers with mental health conditions told of lacking confidence and workplace concerns about job security, absence, disclosure, stress and poor support.

The findings suggest that workers with mental health conditions have greater self-management support needs. A recent report for the UK government proposed six standards for employers to improve mental health support for workers (Stevenson & Farmer, 2017).

The recommendations included mental health plans, awareness campaigns, ensuring openness, good working conditions, effective people management and monitoring of wellbeing. Employers, including several of the Study 3 participants, also invest in Mental Health First Aid Training (MHFA). Mental Health First Aid training has been related to increased knowledge and confidence for supporting workers (Crone et al., 2020). However, neither intervention targets what workers can do for themselves to self-manage their mental health. This lack of specificity implores whether different types of workplace support for mental health self-management could be beneficial.

Supporting differently activated workers to manage different LTCs is unlikely to be straightforward (RO3). Based on Hibbard et al's (2014) recommendations for support by activation level (see Chapter 2, Section 2.3.2, p. 32), the Study 1 results suggest that most workers need support to *maintain* self-management. However, an important minority at activation level 1 (17.3%) and 2 (15.6%) need support in *becoming activated*, and not just workers with mental health LTCs. Support to become activated would feasibly require more time-intensive support than maintenance help, in order to build and maintain skills and behaviours. This could be more work disruptive. Nonetheless, significant positive associations were found in Study 1 between activation and self-efficacy, wellbeing and current workability (*hypothesis 3*). This suggests that workplace support for activation is worthwhile. For this, tailored self-management support could be beneficial (Plow et al., 2016). These findings corroborate this recommendation and workers activation scores could be used to highlight support needs and target support. Possibly, employer support could be tiered by activation level.

Activation and self-efficacy relate to having control over one's health and environment (Bandura, 1997; Hibbard & Gilburt, 2014), and can help people navigate complexities at work (Summers et al., 2014). However, given this sample's high activation profile, the reducing effects of self-managing on work and increased LTC control observed longitudinally (in Study 2), these data might present an optimistic view of workers self-management experiences. The profile might also evidence a Healthy Worker bias (Thygesen et al., 2011) due to the predominance of highly activated workers. Further research is needed, perhaps by comparing to a sample of unemployed people with LTCs.

Activation, QoL and Work Outcomes.

Workers activation was significantly positively associated with self-efficacy, wellbeing and current workability (*hypothesis 3*), and changes in self-management confidence was

impacted by workers' work engagement (*hypothesis 8*) (RO3). The findings are in-part consistent with those of a study of multiple sclerosis patients demonstrating a positive association between activation, self-efficacy and QoL measures (Stepleman et al., 2010). Therefore, the extent to which workers are activated to self-manage and become work engaged could have health benefits, and beneficial work effects (RO2 and RO3). This lends new support for the workplace as a self-management support setting and for work-based interventions (Hutting et al., 2013; Smith et al., 2018).

Workplaces are suitable venues for health reform and support (Smith et al., 2015). However, LTC self-management support programmes are not embedded in UK workplaces. This is despite good evidence for the effectiveness of programmes adapted from the CDSMP and the variable evidence for EAP and WHPs' effectiveness (discussed in Chapter 2, Section 2.2) (Proper & Van Oostrom, 2019; Rick, 2012). Workplace CDSMP programmes have been associated with improvements in workers' general health behaviours including diet and physical activity, increased self-efficacy and improvements in attitudes to self-managing at work, and perceived disability for people with MSK problems (Challis et al., 2010; Hutting et al., 2015; Taylor et al., 2014).

Therefore, workers who are supported to acquire (and others maintain) the knowledge, skills and confidence to self-manage could be empowered to improve their health, wellbeing and workability. This is a positive outcome for employers and workers and indicates a potential role for CDSMP programmes in UK workplaces.

Different Self-Management of Different LTCs.

In Study 1, significant differences in seven self-management activities showed that workers with different LTCs self-manage differently. Some differences reflect what is already clear from the literature about self-management, such as people with MSK conditions needing to manage pain (Hutting et al., 2017; Shaw et al., 2012). Other differences are not so clear, such as workers with mental health LTCs undertaking exercise more often than others. Differences in self-management could make providing workplace support difficult and arduous for employers. This suggests that workers support needs are not straightforward. Furthermore, the Study 1 finding that workers with mental health LTCs were the most frequent self-managers, despite being least activated and self-efficacious, was surprising. It also raises questions about how activation and self-efficacy influence the behaviour of those with mental health conditions. Yet workers with all types of LTC managed lifestyle aspects including diet and exercise in comparable ways. This highlights some uniformity in how

workers self-manage. Whilst workers with LTCs might have complex needs that require tailored interventions, there could be an opportunity for homogeneity in approaches including general lifestyle support programmes for workers with LTCs. This adds to the evidence for commonalities in self-management support (O'Connell et al., 2018) from a work perspective. Although standardised approaches might reduce an employer's ability to flex to workers' support needs, this could enable support being provided efficiently and economically (e.g., health coaching for all LTCs). This might be a useful starting point and alternative to having no workplace self-management support at all.

Despite these differences, workers want to be supported to self-manage when they think they need to. This necessitates a working environment that fosters the conditions for workers to do so.

Disclosure.

Workers seek to integrate self-management around work by accessing support from managers and colleagues (relatedness) for confidence, control and flexibility (autonomy) (Schulman-Green et al., 2012) (RO1). Workers do this by disclosing an LTC at work and in this thesis, nearly 90 percent had done so. The high awareness of an LTC amongst managers and colleagues reported in Study 1 is consistent with the 96 percent reported in an earlier LTC study of workers (Varekamp & van Dijk, 2010). As predicted, disclosure related to more workplace support (*hypothesis* 4). This is consistent with the general view that disclosure has benefits (Brouwers et al., 2019) and is important for accessing employer support (Heinrichs et al., 2018; Munir et al., 2005b; Vornholt et al., 2018). It also corroborates the employers' view in Study 3 that disclosure is the only way to access their support (though does not guarantee it). Nonetheless, qualitative data from the worker studies showed that some workers manage their LTC without support meaning disclosure is not important for them. This is a similar finding reported elsewhere in a study of workers with mental health conditions (Dewa et al., 2020). Whilst not all workers might need to disclose for support, disclosure is critical for those that do in order to facilitate support.

To the researcher's knowledge, this is the first research to examine the relationship between workplace LTC disclosure, activation and self-efficacy. The research conducted in this project found that whilst disclosure might enhance access to support, it was interesting that workers who had disclosed were less activated and self-efficacious than those who had not (*hypothesis 4*). Workers might have been less activated and self-efficacious because disclosure resulted in stigma and discrimination that undermined their confidence, or

because support was ineffective. Stigma was not measured in this project. Therefore, further research is needed to understand whether disclosure leads to stigma and subsequent lower activation and self-management confidence.

Workers disclose if they think they will be supported (Gignac & Cao, 2009; Munir et al., 2005b). The qualitative data from employers and workers made it clear that support is not always forthcoming or possible. This implies that disclosure might not be beneficial for accessing support for self-management. Given this is the first workplace self-management study to feature activation, this offers a novel contribution to the disclosure and workplace literature by suggesting that disclosure might not enhance workers' self-management confidence. This is interesting and warrants further investigation in a larger sample of workers. Moreover, disclosure might not relate to increased confidence because it is viewed as a single definitive event meaning other influencing factors (such as work demands and LTCs fluctuations) are unaccounted for. This also warrants future investigation.

Non-disclosure of an LTC could be an obstacle to self-management because it makes employer support and modifications unlikely (Munir et al., 2005b). In Study 3, employers told of how workers' disclosure decisions directly affect their ability to provide support and tackle stigma (RO2 and RO4). When an employer is unaware of an LTC support does not tend to be provided. Moreover, as non-disclosure undermines openness there is less opportunity for employers to tackle LTC related stigmas. However, employers recognise that workers' disclosure is affected positively or negatively by their manager. This provides further evidence that disclosure decisions are made contextually (de Vries et al., 2016; Munir et al., 2005b). Disclosure studies report worker and employer perspectives and focus on stigmatised LTCs (e.g., mental health and HIV), the determinants of workers' disclosure and employers' hiring decisions (Brohan et al., 2012; Gignac et al., 2020; von Schrader et al., 2014). These findings add to the scant disclosure literature from a self-management perspective, and uniquely incorporate employers' views. This reiterates the importance of disclosure as a self-management support strategy for workers (Munir et al., 2005b) but also employers.

This adds new evidence that disclosure could help employers empower workers' LTC self-management and tackle stigma. Workers might not appreciate this just as employers might not realise workers self-stigmas or the stressful process of disclosing (Brohan et al., 2012). Moreover, although disclosure is important for self-management, this was not employers first consideration. Similar to views expressed in other studies, where disclosure indicates

success in achieving a disability friendly culture (von Schrader et al., 2014), employers related disclosure to disability, diversity and inclusion concerns more than LTC self-management. This reiterates the common association of LTCs with disability, which is not necessarily congruent with workers' views, their health situation or legal definitions. As disclosure was not considered a way to help workers' self-manage LTCs, it remains unclear if employers view workplaces as health management venues.

Stigma.

Disclosure is closely related to stigma wherein high stigma undermines LTC disclosure (Greeff, 2013). Most workers had disclosed an LTC suggesting stigma might not be a problem. Not all workers indicated in the narrative interview study that stigma prevented them from disclosing (or self-managing). Nonetheless, this research makes clear that stigma and closedness is unhelpful and a workplace barrier to self-management (RO2 and RO4). In this thesis LTC related stigma was manifest in workplaces and workers. Stigma is a well-known workplace problem (Pransky et al., 2016), potential stressor and could undermine the inclusivity employers aim for. In Study 3, employers recognised that managers (but not workers) can have stigmatising beliefs that undermine their support. Nonetheless, most workers had disclosed their LTC and those that had reported more people at work to turn to for support, compared to those non-disclosed (*hypothesis 4*) (RO1).

However, descriptions of stigmas shared in the employer and narrative interviews suggests that disclosure does not in itself dispel myths about work capacity and LTCs. Stigma interfered with workers' self-management when they appraised an LTCs demands with those of work. For example, two workers in Study 4 described not seeking manager support for an LTC to maintain an image of professionalism and capability. This is consistent with studies showing stigma prevents people raising support needs (Ruston et al., 2013; Stergiou-Kita et al., 2016) and herein related to a mix of societal, organisational, manager and self-perpetuating stigmas.

The majority of non-disclosed workers in this project were affected by conditions recognised as stigmatised including mental health and HIV. The Study 4 interviews showed two workers with bipolar disorder and HIV not self-managing at work to avoid attention, or because they found their own work arounds to be able to manage (RO1). This project offers additional evidence about the disclosure difficulties people with mental health, invisible and stigmatised conditions can face. It provides more evidence that stigma prevents workers from managing their health, which supports the contention that stigma has detrimental support, health and

work effects (Brohan et al., 2012; Brohan & Thornicroft, 2010; Brouwers et al., 2019; de Vries et al., 2016; McDonald et al., 2016; Norstedt, 2019).

Stigma emerged in workers' Study 4 narratives as indiscriminate across LTCs. From the employers' lack of awareness of LTC self-management (in Study 3) and reliance on general workplace policies to support workers' health, a sense emerged that working with an LTC that needs to be managed (at work) is exceptional (i.e., unusual) (RO2 and RO4). This sense of exception might be strengthened by an LTC disrupting a worker's self-identity (Bury, 1982). This can effect a sense of being *different*, which can be experienced as stigmatising. As highlighted in the worker narratives, the formality of workplace policies and processes for absence and flexibility, and manager's reactions could reinforce this sense of difference and *special* treatment. This indicates potentially deeper issues with societal and occupational conceptualisations and expectations of health, work and identity. These processes and conceptualisations should be unravelled and reconciled in future studies.

Although stigma was not preventing people's work participation in Study 1, it was clear that support to lessen stigma and enhance openness would make it easier to ask for help to self-manage (RO3). As reflected in employers' views (in Study 3), disclosure is often viewed as indicative of inclusivity and low stigma in work settings. In contrast to the drive of many workplace wellbeing, diversity, inclusion and disability agendas (Henderson & Thornicroft, 2009), this project's findings suggest disclosure might not tackle stigma or empower workers' self-management. Similar to other evidence suggesting stigma causes problems with managing symptoms and accessing help (Tveito et al., 2010), some workers held self-stigmas including seeing themselves of less worth. Therefore, LTC related stigmas are a mix of workplace, organisational and personal influences. Workers own beliefs are influential. So stigma is not just about employers and managers, which could help explain why disclosure might not dispel stigma. As empowerment could be a method for reducing stigma, such as by giving people control (Corrigan & Rao, 2012), this lends support to employers and workers tackling LTC related stigma collaboratively. Possibly, workplaces concerned with a general openness about health more than a single act of LTC disclosure are more likely to be supportive of self-management. This builds the evidence for tackling stigma to empower workers' LTC self-management

Support.

Work facilitates LTC self-management through the support provided for what a worker thinks would be helpful (RO2). In Studies 2 and 4, the psychosocial Flags (Kendall et al., 2009)

identified a mix of personal and organisational features interacting to determine a workers' self-management and support needs. These features included work stress, demands, disclosure, stigma and work engagement, manager support and flexibility (RO2). In line with the findings of studies of workers with back pain and common health problems, such as low mood or MSK pain, Flag features of poor manager support and an inability to modify work, impaired workers self-management ability and coping (Buck et al., 2011; Frederiksen et al., 2015). This study is the first using the conceptual Flags framework to examine workers LTC self-management support needs. It furthers Buck et al's (2011) evidence for the Flags applicability in examining workplace obstacles to health beyond MSK problems.

The project revealed that workplace LTC self-management support was not purposely provided (RO3). There was little evidence that support was a collaborative activity (Jones et al., 2011) between worker and employer, and no evidence of standardised or structured workplace LTC self-management programmes (Hibbard et al., 2007; Taylor et al., 2014). Feasibly, this is explained by employers' unawareness of self-management shown in Study 3, and conventions of workplace health promotion rather than LTC support (RO4).

Little is known about the LTC self-management support workers value (Foster et al., 2015b; Vornholt et al., 2018). This section helps fill this gap. Consistent with other research (Heinrich et al., 2019; Munir et al., 2005b; Ruston et al., 2013) the need for manager support was pronounced. This is critical to workers' appraisal of their ability to self-manage at work (RO2 and RO3). Without manager support workers struggle to have the confidence to self-manage, mainly because they do not feel in control. The HSE Management Standards (HSE, 2004) discussed in Study 1 showed that workers with LTCs, and especially those with mental health conditions, perceived less manager support compared to those without (*hypothesis 1*). The narrative interview study data reinforced this by describing the outcomes of poor manager support including stigma, concealing an LTC, attending work unwell, taking time off the job to self-manage, or not self-managing at all. Earlier studies relate manager support to workers self-management of medication, symptoms (Munir et al., 2009a), job modifications (Coole et al., 2010; de Boer et al., 2017; Foster, 2007) and disclosure (Sallis & Birkin, 2014). In the present project, managers enabled workers self-management by giving people clear permission to do so.

Workers unsure about manager approval are unlikely to be confident or open about self-managing, or clear about their ability. This project adds to the literature, finding that a worker's appraisal of their ability to self-manage an LTC at work depends largely on their

manager empowering them. Overall, workers need manager support and permission for empowerment to self-manage (RO3).

Good manager support is already recognised as important for workplace health self-management (Munir et al., 2009a; Nelson et al., 2016) and work engagement (Pass et al., 2018). Workers appraisal of their ability to cope and self-manage at work is influenced by their support resources, sense of control (Bandura, 1997; Lazarus & Folkman, 1984) and in this project, their manager. Support can have many attributes. Based on the findings, a self-management supportive manager is someone who, when an LTC is disclosed:

1. Provides practical and instrumental support to empower workers and put them in control of self-managing around work;
2. Allows flexible working with leeway or job/work modifications;
3. Provides consistent relational and unstigmatised support characterised by empathy, sympathy and care.

These characteristics are consistent with other research exploring aspects of successful self-management including social and practical support (Gallant, 2003; Munir et al., 2005b, 2009a).

Workers need managers to empower their self-management via flexibility (RO3). This finding corroborates a previous qualitative study of workers wherein control over job tasks and manager support, and importantly over how and when things were done, affected workers ability to self-manage asthma symptoms (Heinrichs et al., 2018). Similar to research examining workers negotiation of work modifications, inflexibility resulted in workers not being supported (Foster, 2007), not self-managing and being disempowered in modification processes (Paulides et al., 2019). This could be because, as indicated in the Study 3 employer interviews, the importance of LTC self-management is not appreciated (RO4).

For workers, the formality of flexibility arrangements, such as reduced hours or time off for appointments achieved via formal modification requests, did not matter so much as having flexibility (RO3). This adds new evidence to the form that flexibility usefully can take. It transpires that less formality and more leeway characterised as having the freedom to rearrange work to self-manage, was preferred. In a qualitative study of workers with lower back pain, leeway allowed people to adjust work to reduce discomfort and could enhance workers sense of being valued and trusted (Tveito et al., 2010). This might help tackle the

problems highlighted with stigma in the interview studies. However, informality could be contradictory to the appetite for workplace policies employers shared in Study 3 and UK legal *reasonable adjustment* duties (The Equality Act, 2010). Managers might be uncomfortable stepping outside of legal processes to achieve flexibility given their responsibilities for managing human resource risks. Consequently, achieving less formality and more leeway could be challenging for workers with LTCs.

Evidence suggests that workers with LTCs are able to make their own modifications though are not always supported, and that modifications could enhance workers' confidence in their workability (Coole et al., 2010). This project adds to the literature about the constraints of work modifications and potential problems with legal stipulations. It strengthens the case for common flexible working practices beyond modifications and from an LTC self-management, rather than disability rights or return to work perspective. There is a need to consider managers' knowledge and competency for flexibility and modifications to ensure that changes for LTC self-management can be facilitated. This could entail manager training and learning and development interventions.

Despite the importance of manager support (Varekamp et al., 2013; Wynne-Jones et al., 2011) and some positive participant experiences, the qualitative data demonstrates that not everyone's manager possess the three characteristics discussed earlier (empowerment to self-manage; flexible work practices; and consistent empathetic support). Studies show that manager support for LTCs is highly variable (Nelson et al., 2016) and, as others have found (de Boer et al., 2017; Ruston et al., 2013), the workers in this project shared experiences of lacking control due to inflexibility, managers declining modifications, encouraging non-disclosure, prioritising work demands, recommending sick leave rather than work modifications and lacking understanding.

As discussed in Chapter 2, self-efficacy beliefs and illness representations including control, regulate workers self-management. These are influenced by verbal support such as a manager encouraging a worker to self-manage in a conversation, emotional arousal including a workers cognition about undertaking an activity and possibilities for control (Bandura, 2002). Therefore, workers discouraged from openly self-managing, aroused to worry about doing so and believing they are not empowered, are unlikely to be activated to self-manage at work. Moreover and according to stress-coping theory (Lazarus & Folkman, 1984), unsupportive managers can lessen a workers ability to cope with an LTC if they believe they are unable to undertake required behaviours. Therefore, if workers are to

accept and undertake the self-management responsibilities that the employers in Study 3 attribute them, unequivocal manager support is needed.

Largely consistent with other workplace studies highlighting the importance of manager support for workers with LTCs (Munir et al., 2009a; Nelson et al., 2016; Stochkendahl et al., 2015; Wynne-Jones et al., 2011), managers were viewed as workers' main source of support (RO4) including by employers. This adds to earlier research reporting the importance of manager support for workers with health problems (Evans-Lacko & Knapp, 2018; Nelson et al., 2016), encouraging self-management and self-efficacy for modifications (Munir et al., 2009a). This project's qualitative data suggests that to be activated to self-manage and act efficaciously, workers need to believe they are able to undertake behaviours such as modifying hours. Although managers can sanction flexibility including modifications and implement policies to enable this, that does not mean that they do. Certainly, specific responsibilities for supporting LTC self-management are not clearly delegated by employers to managers. However and aligning with previous studies (Nelson et al., 2016), employers recognised that workers experiences vary by manager due to stigma, LTC literacy and relational features of empathy, sympathy and care. As workers with health problems view poor manager relationships negatively (Buck et al., 2011), this is likely to affect their appraisal of and confidence to self-manage and coping ability.

These findings build on previous understanding of the importance of manager support to LTC self-management (Munir et al., 2009a; Summers et al., 2014) by showing that, in the employers' opinion, the provision of support rests almost entirely on managers. In Study 3, it was made clear that managers are unlikely to have been made aware of these responsibilities. As a result, workers with LTCs might not get the support they need. Employers appear to need guidance to make sure they do. Therefore, it is plausible to suggest that employers clarify how they expect managers to support workers' LTC self-management and upskill them. This could involve enhancing their own knowledge and understanding to do so.

Work Stress, Demands and Work Engagement.

In Study 1, participants with LTCs reported more work stress compared to those without, suggesting LTCs might increase a person's vulnerability to work stress (*hypothesis 1*). This is consistent with a Dutch study, in which workers with LTCs generally reported less favourable working conditions compared to those without (Donders et al., 2007). Specifically, workers with mental health LTCs perceived the most work stress (*hypothesis* 2) further

corroborating the case for workplace mental health support (RO3). In stress coping theory, people appraise stressors by considering perceived demands and their resources to cope (Lazarus & Folkman, 1984). The findings suggest that workers' ability to cope with stress is influenced by their LTC status, and that those affected have fewer resources to cope. This could be due to the additional demands of an LTC or poor social support (RO2). As mentioned in Chapter 4 and in line with the job-demands-control-support model (Fila, 2016; Johnson & Hall, 1988), this suggests workers with LTCs are at risk of job strain. Certainly, the qualitative data included accounts of potential strain such as presenteeism and not self-managing by returning from sick leave too soon.

Although the findings demonstrate that work stress can distract workers from self-managing (RO2), there was no suggestion in Study 3 that employers appreciate workers with LTCs could be more stressed. Stress is known to increase ill-health risks and could increase the risk of comorbidities for workers with LTCs (Siegrist & Li, 2018). Moreover, stress can negatively affect work engagement, which in this project was associated with changes in workers self-management confidence (*hypothesis 8*) (RO2). For Schaufeli and Salanova (2007), work engagement is a positive and energetic state of wellbeing related to work (as cited in Xanthopoulou et al., 2008). So it is probable that disengagement would undermine self-management for workers who might not have the energy, vigour or dedication to self-manage (Schaufeli et al., 2006). Therefore, employer support to help workers manage stress and enhance work engagement could be beneficial to self-management.

Employers' Views.

As discussed in Chapter 6, employers were broadly unaware of LTC self-management (RO4). As a result the support provided is not really concerned with it. More general primary, secondary and tertiary forms of support were described for rehabilitative and promotional aspects of workers health. These included wellbeing programmes, benefits and policies including work modifications and EAPs. This could help explain the qualitative findings in which some workers described their employer being uninterested in supporting their LTC. Overall, the findings suggest that employers do not realise the control they can exert over workers management of an LTC.

Some employers' views about LTC self-management support needs aligned with workers own views (RO4). Both highlighted empowerment, openness, disclosure, stigma, modifications, workplace policies and manager support as impactful work features (RO2). The employers acknowledged that they might not meet everyone's support needs.

Nonetheless, they want to and the Study 2 diary findings provided some evidence of workers support needs being met over time. Despite this evidence demonstrating shared views and promising workplace support, employers had different perspectives about support and how it is operationalised.

For employers, workplace support rests entirely on workers disclosing an LTC. Support is then regulated via workplace policies implemented by managers. In a study of obstacles to remaining at work (for people with health problems), Buck et al (2011) similarly highlighted the importance of workplace policies to workers such as for flexible working. In contrast, workers want informal support for autonomy to self-manage when they feel they need to via open, informal flexibility and leeway (RO3 and RO4). Moreover, in a study of a workplace CDSMP, Smith et al (2015) suggested that self-management support needs to be fitted into work. Similarly, the employer's view is that support is balanced (as is workers self-management), within the constraints of job demands and working time (RO4) meaning support is not always available. This adds to the evidence for work demands being prioritised over self-management (Loerbroks et al., 2018). Therefore, self-management might not be supported because a manager is unaware of an LTC. This may be due to an ineffective or poorly implemented policy, or because of a perception that work tasks take priority. These could stop workers self-managing an LTC (RO1).

Differences in opinion about what, when and how an LTC is self-managed at work could undermine workers engagement and appraisal of their ability to self-manage. Potentially, this could affect their health, QoL and work outcomes. So, while employers want to support workers and attribute health management responsibilities to them, they might not realise the control they have over people's LTC self-management. This could put workers in a challenging position. On the one hand the Study 3 employer findings suggest workers are responsible for managing an LTC to maintain health to work. On the other hand and paradoxically, only when their manager says so. Given the association of activation with self-efficacy, current workability and wellbeing (*hypothesis 3*) this highlights the importance of reconciling these views and the risks of not.

8.1 Methodological Considerations, Strengths and Limitations

Whilst this project has limitations it provides novel findings that are relevant to employers, and useful for inclusion in self-management support models. The studies' strengths and limitations were discussed in each study chapter. This section discusses the overall methodological considerations and limitations.

A major strength of the project is its use of mixed methods to bring together complex and novel quantitative and qualitative data from workers and employers. Survey, diary and interview study techniques meant complex characteristics of workplace LTC self-management were explored. The findings provide new insight to workers LTC self-management and employers' views. Mixed data from workers with and without LTCs, with different types of LTCs, varying levels of activation and self-efficacy, workability and wellbeing were collected. Rich qualitative data were collected from an array of employer participants including HR, wellbeing, OH, health and safety and business owners including line managers. Thus, a key strength is the research was not solely reliant on 'university' samples which can create generalisation problems (Hanel & Vione, 2016). Participants were recruited from across industry sectors representing well regarded UK employers. Consequently, despite some limitations, this research presents the first comprehensive picture of UK workers' LTC self-management and support needs, along with representative employer views.

The project's main limitations relate to its sample size and limited longitudinal perspective. The Study 1 sampling strategy informed all others and as discussed in Chapter 4, the sample of workers with LTCs was smaller than anticipated. Consequently, the findings are not necessarily transferable to other workers or workplaces. While the cross-sectional studies provide an empirical insight to workers LTC, work and self-management characteristics, causal relationships between the variables cannot be ascertained. Also, the Study 2 diary sample was smaller and the attrition rate higher than anticipated meaning a fairly narrow longitudinal view of self-management is provided.

Four reasons help explain this: 1) recruiting employers to distribute the Study 1 survey was problematic and impeded access to workers; 2) many workers were alerted to the survey by their employer, or to the studies distantly by the researcher via LinkedIn or email - consequently engaging workers directly to ensure awareness and encourage participation was mostly impossible; 3) workers who did not need to self-manage at all or at work may have considered taking part irrelevant; and 4) taking part was considered burdensome due to time constraints and work demands. Nonetheless, for the first time relationships between workers activation and disclosure, self-efficacy, workability and wellbeing; workers stress and LTC status; and workers self-management confidence and work engagement were assessed.

Three limitations standout. Firstly, in hindsight and despite being piloted the Study 1 survey was overly comprehensive. While the literature and research questions informed the survey's content and the data provides a novel and detailed insight, its length and depth could have deterred participation. The survey design was affected by the measures it used including the 13-item PAM and 26-item HSE Management Standards. Shortened more convenient measures (Schouten et al., 2016) might have helped enhance participation. Survey research is not a '*quick and dirty*' (Kelley et al., 2003, p. 266) and there is a fine balance to be struck between gathering a detailed picture and participant burden. Also, the design meant that each study partly informed the next. As discussed in Chapter 5, the researcher is confident that the time-lag between studies, mainly due to the research being undertaken part-time, influenced workers engagement with the project.

Secondly, participants self-selected to take part in the studies and self-reported LTCs, self-management and work characteristics. Therefore bias and error may have occurred (Rosenman et al., 2011). Workers might have been more or less likely to participate based on their self-management confidence or LTC severity, workers could have reported LTCs not medically diagnosed or answered questions in a way they believed was desired. Consequently, the characteristics and relationships presented could be misrepresented. Regarding the interview studies, workers might have participated to expose grievances with employer support. Employers might have felt pressured to provide more favourable views to a third party. The findings could then present a skewed and misleading picture of workers self-management support needs and employers' views, questioning their generalisability. Nonetheless, the mixed methods were identified to counterbalance these biases by exploring similar self-management and work characteristics, from both an interpretivist and positivist stance.

Thirdly and as discussed in Chapter 4, non-mental health and MSK conditions were amalgamated into a group of o*ther* conditions. While this enabled the statistical testing of relationships between LTC groups, the *other* data should be interpreted with caution. Commonalities exist across LTCs, but the data may not reflect common characteristics of the amalgamated conditions. For example, the demands of self-managing a neurological or digestive LTC could be quite different. A further source of uncertainty is the project's analytic focus on single LTCs meaning comorbidities are unaccounted for. Whilst many self-management studies focus on single LTCs (Gobeil-Lavoie et al., 2019), clinicians advise to exercise caution applying LTC specific advice to people with comorbidities (Hanlon et al.,

2019). This principle applies to the project's findings and its conclusions should be read with this in mind.

A feature of this project was its use of robust and validated measures to assess workers self-management confidence including activation and self-efficacy (Ahlstrom et al., 2010; Edwards et al., 2008; Hibbard & Gilburt, 2014; Jääskeläinen et al., 2016; Kerr et al., 2009; Prey et al., 2016). Whilst these are validated measures with good face validity, no current scales exist to specifically measure people's *workplace* LTC self-management support needs. There appears to be an opportunity for bespoke (or new) measures to specifically examine workers' self-management support needs.

Lastly, the sequential explanatory methodological approach taken (discussed in Chapter 3, Section 3.2) translated into clusters of studies being undertaken during the project. The research process meant that studies did not neatly take place *one after the other*. Given recruitment difficulties (including the survey being open for longer than anticipated) some studies overlapped. As a result, while study 2, 3 and 4 were informed at least in part by those earlier, some analysis and data collection overlapped e.g., the survey and interview studies. Therefore, insights could have been overlooked that analysis had not yet unveiled meaning they were unaccounted for in later studies. This also had a burdensome effect on the researcher's time who was, at points, managing multiple aspects of separate studies.

8.2 Implications of the Findings

The project has shown that whilst workplace LTC self-management support is needed, typically workers do not receive support and employers need guidance providing it. This evidence goes a considerable way to enhance our understanding by providing a much needed and original insight to workers' self-management support needs, and to employers' views. Existing workplace support is insufficient to support workers' LTC self-management. Partly, this relates to managers' providing ineffective and unguided support and a generally poor self-management knowledge, meaning the workplace is not conducive to self-management. This has important implications for employer policies and practices and specifically for managers. Overall, the findings identify a substantial role for employers in supporting workers LTC self-management and highlight influencing psychosocial factors. Other self-management research shows that adopting a psychosocial approach is helpful in capturing workers self-management experiences (Heinrichs et al., 2018; Heinrichs et al., 2019; Loerbroks et al., 2018). The present project enables a potential step further, through

application of the research findings to the design of a psychosocial model of workplace LTC self-management support.

A Proposed Psychosocial Model of Workplace LTC Self-Management Support.
No workplace LTC self-management support models exist. The research findings can be combined and a psychosocial model of workplace LTC self-management support is proposed. The proposed model, which takes account of existing knowledge supplemented with the present findings, is illustrated in Figure 8.1. The model is inspired by Feuerstein et al's (2010) framing of work in cancer survivors and is informed by the present project's conceptual Flags backdrop (Kendall et al., 2009). It comprises of three component parts including: 1) workers self-management responsibilities; 2) workers psychological support needs; and 3) workers social support needs. Potential support needs and obstacles are categorised by the conceptual yellow, blue and black Flags (introduced in Chapter 2, Section 2.3.3, p. 35). Yellow Flags relate to the worker and broadly, blue Flags relate to the worker and workplace, black Flags to the workplace and organisation.

Drawing on the findings this aims to help improve workplace LTC self-management support. Practically, the model focuses attention to Flag features supportive (or otherwise) of LTC self-management. *Responsibilities* relate to workers understanding of how, what and when to self-manage. Dimensions of *psychological support* concerns workers having adequate internal resources to self-manage, whereas *social support* relates to workers having adequate workplace support from others to self-manage. *Enablers* relate to the work features necessary for LTC self-management. *Outcomes* relate to the desirable effects of support including a worker engaged and confident about self-managing an LTC at work.

It has been suggested that managers would benefit from work interventions to improve support for workers with LTCs (Gayed et al., 2018). As a first step this model could be used by managers to generate informal exploratory discussions with workers about LTC self-management that do not currently happen. The model could also be used to develop a tool for managers to use with a view to identifying workers support needs and work through the support options. Potentially, as part of an intervention mapping approach which is a framework for developing theory and evidence based health promotion programmes (Bosma et al., 2020b). Yellow Flag discussions could include talking about whether a worker felt confident about self-managing or being open. Blue and black flag discussions could overlap and include talking about work and broader occupational features. For example, whether a worker needed more job flexibility, was concerned about warnings under a workplace

absence policy or how they are seen by others. In this way the model's component parts can be viewed as a set of guiding principles and pathways for supportive discussions between managers and workers, in order to agree a plan for workplace LTC self-management.

Thus, it provides a tool to facilitate a workplace LTC self-management support narrative that at present is missing. Just as clinicians need support having work related conversations with patients (Bartys et al., 2019), the model is a support tool for managers. It could facilitate an agreed and written self-management plan to ensure clarity between workers and managers (Waddell & Burton, 2004), and meet the preference for structure indicated by the employers in Study 3 interviews. Additionally, the model could generate hypotheses for future studies and inform adaptions of the CDSMP for UK workplace intervention studies.

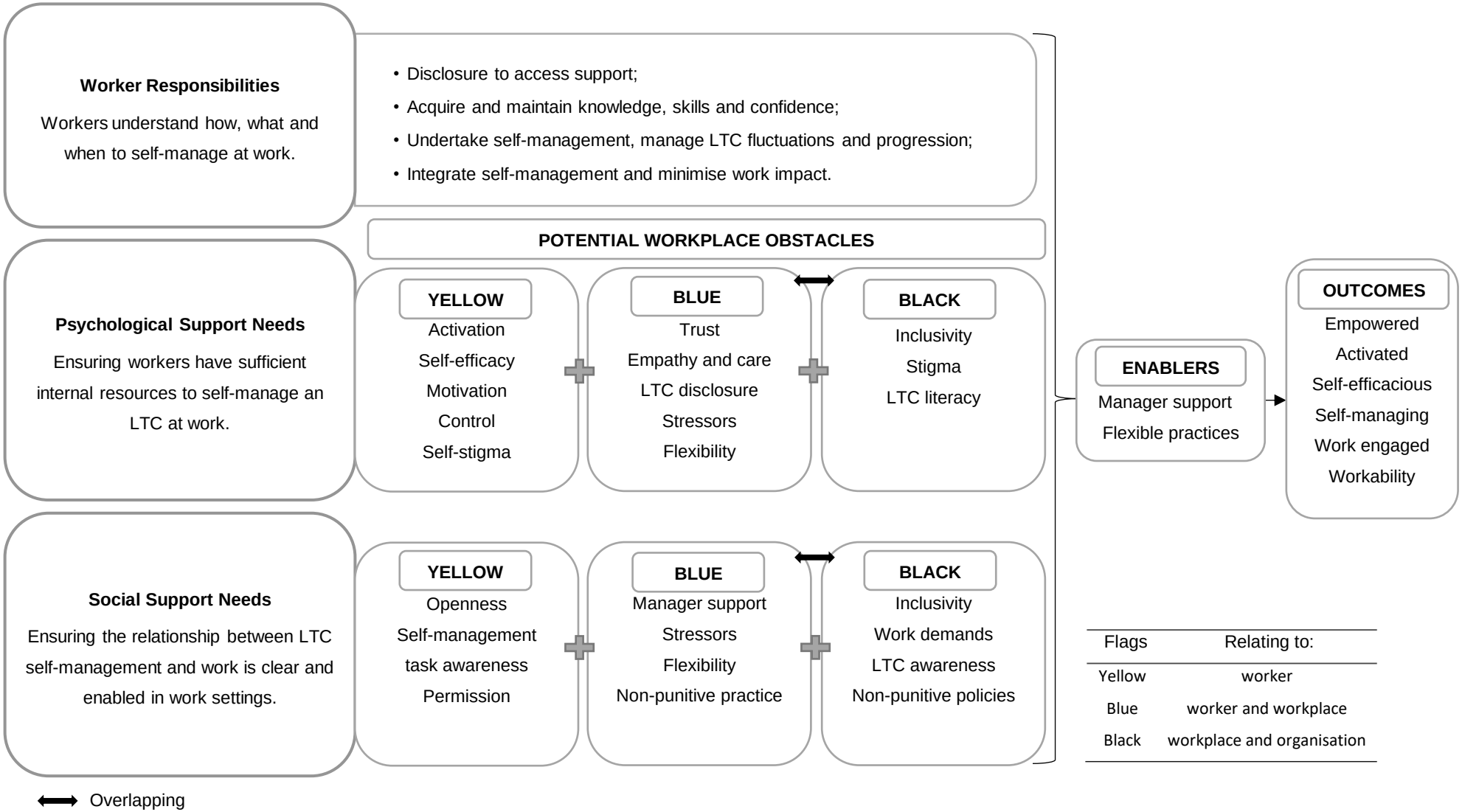


FIGURE 8.1. ***A Psychosocial (Flags) Model of Workplace LTC Self-Management Support*.**

8.3 Future Directions

Little literature exists examining the influence of work on LTC self-management (Gallant, 2003). Workplace interventions designed to enhance workers self-management confidence are limited (Smith et al., 2015). Psychosocial approaches are recommended for consolidating complex interactions between health problems, psychological and social factors (Lunt et al., 2007), for helping identify workplace problems (Kendall et al., 2009) and successfully applied in self-management and intervention studies (Heinrichs et al., 2019; Heinrichs et al., 2018; Taylor et al., 2014). One natural progression of this work is to implement and test the proposed psychosocial model in a work setting through a controlled trial.

The findings have several other implications for future research. Obvious areas include projects similar to this but with a greater longitudinal focus and larger samples. This could afford a more dynamic insight into workers' activation, self-management and work characteristics over time, and that this project was unable to provide. Understanding workers' activation and self-efficacy to self-manage, work engagement and the effects of working conditions longitudinally using larger samples, would build on this evidence to further our knowledge about workplace LTC self-management. This could help researchers and employers decide if targeting activation, stress and work engagement is worthwhile, and further refine the proposed psychosocial model.

Other areas warrant specific attention. Firstly, considerably more work needs to be done to explore the relationship between workers activation and self-efficacy, work and QoL outcomes, and manager's self-management support. This data suggests that better self-efficacy, workability and wellbeing could be achieved through improved activation and manager support. This could enhance workers LTC self-management (Hibbard, 2014; Hibbard et al., 2007), coping and minimise adverse outcomes. Future research could introduce and assess workplace activation interventions using the proposed model. Also, given Study 1's inference that workers with more support are not necessarily more activated or self-efficacious, studies should explore the effects of support on these variables in greater depth. Studies could also measure theoretical elements not accounted for in this project. For example, workers readiness to change in activation.

Secondly, LTC disclosure is important for accessing workplace support for flexibility. The Study 1 findings suggest disclosure is not necessarily related to better activation and self-management confidence, and the qualitative data evidences disclosure might not lead to

support. Ideally, disclosure would optimise workers opportunity to self-manage an LTC at work. If this is not the case, the reasons need to be understood. Future and larger studies should consider this further and model the relationships between disclosure and activation, self-efficacy and support resources including work modifications. Studies could incorporate measures of stigma in addition to workers and employers views. The idea of multiple LTC disclosures for support due to fluctuations in episodic and progressive symptoms over-time, also warrant investigation.

Thirdly, this research has thrown up many questions about the role of the employer but mostly managers. Manager support is a vital issue for future workplace LTC self-management research. Earlier studies already recommend the introduction and evaluation of knowledge interventions for managers to improve support for workers with LTCs (Munir et al., 2009a). However, the present project's findings suggest that gaps in manager support are likely to remain. More needs to be done to improve managers' knowledge and understanding of self-management to improve the support they give to workers with LTCs. To inform workplace interventions, future research should focus on supporting managers to establish their knowledge and understanding of LTC self-management, their motivations for providing support and stigmatising beliefs. In particular, studies should identify problems facilitating flexibility, work modifications and focus on managers decision making processes in this context.

Fourth, attention should be paid to features of work stress and engagement. Although work engagement is at the heart of employment relationships and can enhance productivity (Macleod & Clarke, 2009) it is not, to the researchers' knowledge, considered important for LTC self-management purposes. Nor are work stressors examined as potential LTC self-management obstacles. The Study 1 data showed that workers with LTCs perceive more work stress. Study 2 showed that work engagement related to changes in workers' self-management confidence. To inform further research, longitudinal studies are needed extending the relationships shown in the studies. Work engagement and stress measures should be incorporated into broader LTC self-management studies.

Fifth, the workforce is ageing (Black, 2008) and the severity of many LTCs fluctuate and worsen over time. Therefore, a better understanding of the effects of LTC severity and age on workers self-management and work characteristics should be developed. In this research, condition severity was negatively related to key self-management characteristics, whereas age was positively related. Given this, the increasing global burden of LTCs (Hajat

& Stein, 2018) and as people are working for longer (Black, 2008), a better understanding of these impacts is critical. For example, given the importance of mastery and peer modelling to self-management confidence (Bandura, 1997), deciphering the influence of age might reveal new support opportunities.

Finally, this project raises an overarching question. Why is self-managing an LTC at work not viewed as essential by workers or employers? This ambiguity might relate to poor knowledge about the evidence for self-management, but could be amplified by work demands or current provisions intended to help workers with LTCs. Much workplace health support is bound in policies, processes and law. However, while modifications (*reasonable adjustments*) can enable LTC self-management, the UK's Equality Act (2010) and Doctor's fit notes are silent on it. Moreover, to ascertain if adjustments are reasonable under the Act, an objective test is applied to the circumstances (including of an LTC, employer resources and work demands) thus not necessarily accounting for what a worker believes they need. Consequently, adjustments for LTC self-management might not be made for reasons not attributed to workers. This infers that self-managing an LTC at work is elective.

Coupled with an employer's potential request for OH or GP referrals for written reports containing evidence of an LTCs effects, workers could be disempowered in getting the support they think they need. This conflicts with the principles of self-management and the concept of the expert and empowered patient (Department of Health, 2001; Whittemore & Dixon, 2008). If the value of self-managing an LTC is veiled or not on a par with work demands, then implementing workplace self-management support interventions could be problematic. This is an interesting topic for future policy-related studies.

8.4 Summary and Conclusion

This project examined if workers with LTCs need workplace self-management support. The findings lead to the conclusion that they do. This has important implications for employers. Various studies and research methods were used to explore this topic which included workers' activation, self-efficacy and working conditions, employers' views and psychosocial perspectives. This research is the first to give such a deep and original insight into workplace LTC self-management support, integrating views from UK workers with different long-term conditions and the views of employers and managers. The research has shown that an interaction of psychosocial factors including workers perceived demands, control and support affects people's ability to fit LTC self-management around work. A key finding is that the workplace is not currently viewed as a venue for self-managing an LTC. The project has

also shown that self-management support is not purposely provided at work, that LTC disclosure might not always help workers self-manage and that employers might not realise the control they can exert on workers LTCs. Whilst the evidence shows employers have an important role, they need guidance in supporting LTC self-management and workers need manager support for flexibility to be empowered to self-manage. In sum, workers want to be easily able and empowered to manage LTCs themselves at work. There is considerable opportunity for self-management support for LTCs in work settings (Smith et al., 2015). Using the conceptual Psychosocial Flags Framework, this research is the first to propose a workplace psychosocial LTC self-management support model. Unless traditional models of healthcare change, the employers role will remain unintegrated potentially leaving workers LTC self-management unsupported. The proposed model is offered as one that could help improve self-management support for workers with LTCs and guide employers to improve health and work outcomes, accepting that it requires further work to validate and refine.

References

Abma, F. I., Bültmann, U., Varekamp, I., & Van Der Klink, J. L. (2013). Workers with health problems: Three perspectives on functioning at work. *Disability and Rehabilitation*. *35*(1), 20 - 26. https://doi.org/10.3109/09638288.2012.687027

Adams, J., Hillier-Brown, F. C., Moore, H. J., Lake, A. A., Araujo-Soares, V., White, M., & Summerbell, C. (2016). Searching and synthesising “grey literature” and “grey information” in public health: Critical reflections on three case studies. *Systematic Reviews*, *5*(1), 1 - 11. https://doi.org/10.1186/s13643-016-0337-y

Adler, D. A., McLaughlin, T. J., Rogers, W. H., Chang, H., Lapitsky, L., & Lerner, D. (2006). Job performance deficits due to depression. *American Journal of Psychiatry*, *163*(9), 1569 - 1576. https://ajp.psychiatryonline.org/doi/full/10.1176/ajp.2006.163.9.1569

Ahlstrom, L., Grimby-Ekman, A., Hagberg, M., & Dellve, L. (2010). The work ability index and single-item question: Associations with sick leave, symptoms and health - A prospective study of women on long-term sick leave. *Scandinavian Journal of Work, Environment and Health*, *36*(5), 404 - 412. https://doi.org/10.5271/sjweh.2917

Ahmad, S., Harris, T., Limb, E., Kerry, S., Victor, C., Ekelund, U., Iliffe, S., Whincup, P., Beighton, C., Ussher, M., & Cook, D. G. (2015). Evaluation of reliability and validity of the General Practice Physical Activity Questionnaire (GPPAQ) in 60-74 year old primary care patients Service organization, utilization, and delivery of care. *BMC Family Practice*, *16*(1), 1 - 9. https://doi.org/10.1186/s12875-015-0324-8

Allaire, S., Wolfe, F., Niu, J., & Lavalley, M. P. (2008). Contemporary prevalence and incidence of work disability associated with rheumatoid arthritis in the US. *Arthritis Care and Research*, *59*(4), 474 - 480. https://doi.org/10.1002/art.23538

Allegrante, J. P., Wells, M. T., & Peterson, J. C. (2018). Interventions to support behavioural self-management of chronic diseases. *Annual Review of Public Health, 40*, 127 - 146 https://doi.org/10.1146/annurev-publhealth-040218-044008

Anderson, C., & Kirkpatrick, S. (2016). Narrative interviewing. *International Journal of Clinical Pharmacy*, *38*(3), 631 - 634. https://doi.org/10.1007/s11096-015-0222-0

Andrea, H., Bültmann, U., Van Amelsvoort, L. G. P. M., & Kant, Y. (2009). The incidence of anxiety and depression among employees - the role of psychosocial work characteristics. *Depression and Anxiety*, *26*(11), 1040 - 1048. https://doi.org/ 10.1002/da.20516

Anwar, M., Green, J. A., Norris, P., & Bukhari, N. I. (2017). Prospective daily diary study reporting of any and all symptoms in healthy adults in Pakistan: Prevalence and

response. *BMJ Open*, *7*(11), e014998. https://doi.org/10.1136/bmjopen-2016-014998

Aronsson, Gunnar, Gustafsson, K., & Dallner, M. (2000). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology & Community Health*. *54*(7), 502 - 509. https://doi.org/10.1136/jech.54.7.502

Arthur, A. R. (2000). Employee assistance programmes: The emperor's new clothes of stress management? *British Journal of Guidance and Counselling*, *28*(4), 549 - 559. https://doi.org/10.1080/03069880020004749

Arthur, A. R. (2002). Mental health problems and British workers: A survey of mental health problems in employees who receive counselling from employee assistance programmes. Stress and Health, 18(2), 69 - 74. https://doi.org/10.1002/smi.930

Audulv, Å. (2013). The over time development of chronic illness self-management patterns: a longitudinal qualitative study. *BMC Public Health*, 13(1), 452. https://doi.org/ 10.1186/ 1471-2458-13-452

Audulv, Å., Asplund, K., & Norbergh, K. G. (2010). Who's in charge? The role of responsibility attribution in self-management among people with chronic illness. *Patient Education and Counseling*, *81*(1), 94 - 100. https://doi.org/10.1016/j.pec.2009.12.007

Aust, B., & Ducki, A. (2004). Comprehensive health promotion interventions at the workplace: Experiences with health circles in Germany. *Journal of Occupational Health Psychology*, *9*(3), 258 - 270. https://doi.org/10.1037/1076-8998.9.3.258

Azzone, V., McCann, B., Merrick, E. L., Hiatt, D., Hodgkin, D., & Horgan, C. (2009). Workplace stress, organizational factors and EAP utilization. *Journal of Workplace Behavioural Health*, *24*(3), 344 - 356. https://doi.org/10.1080/15555240903188380

Baanders, A. N., Andries, F., Rijken, P. M., & Dekker, J. (2001). Work adjustments among the chronically ill. *International Journal of Rehabilitation Research*, *24*(1), 7 - 14. https://doi.org/10.1097/00004356-200103000-00002

Bajorek, Z. (2016). *Employee assistance programmes (EAPs) supporting good work for UK employers?* https://www.eapa.org.uk/wp-content/uploads/2018/01/UK-EAPA-Research-Project-Phase-1-Report-December-2016.pdf

Bajorek, Z., Hind, A., & Bevan, S. (2016). *The impact of long term conditions on employment and the wider UK economy*. Work Foundation. http://englishbulletin.adapt.it/wp-content/uploads/2016/02/397_The20impact20of20long20term20conditions20on20the20economy1.pdf

Bakker, A. B., & Bal, P. M. (2010). Weekly work engagement and performance: A study among starting teachers. *Journal of Occupational and Organizational Psychology*, *83*(1), 189 - 206. https://doi.org/10.1348/096317909X402596

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art.

Journal of Managerial Psychology, *22*(3), 309 - 328. https://doi.org/10.1108/02683940710733115

Bandura, A. (1997). *Self Efficacy: The exercise of control*. W H Freeman.

Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology*, *51*(2), 269 - 290. https://doi.org/10.1111/1464-0597.00092

Barker, I., Steventon, A., Williamson, R., & Deeny, S. R. (2018). Self-management capability in patients with long-term conditions is associated with reduced healthcare utilisation across a whole health economy: Cross-sectional analysis of electronic health records. *BMJ Quality and Safety*, *27*(12), 989 - 999. https://doi.org/10.1136/bmjqs-2017-007635

Barlow, J. H. (2002). A randomized controlled study of the Arthritis Self-Management Programme in the UK. *Health Education Research*, *15*(6), 665 - 680. https://doi.org/10.1093/her/15.6.665

Barlow, J., Wright, C., Sheasby, J., Turner, A., & Hainsworth, J. (2002). Self-management approaches for people with chronic conditions: A review. *Patient Education and Counseling*, *48*(2), 177-187. https://doi.org/10.1016/S0738-3991(02)00032-0

Barrett, E. M. (2000). The impact of rheumatoid arthritis on employment status in the early years of disease: a UK community-based study. *Rheumatology*, *39*(12), 1403 - 1409. https://doi.org/10.1093/rheumatology/39.12.1403

Bartys, S., Edmondson, A., & Burton, K. (2019). *Work conversations in healthcare: How, where, when and by whom: a review to understand conversations about work in healthcare and identify opportunities to make work conversations a part of everyday health interactions.* Public Health England, 90. http://irep.ntu.ac.uk/id/eprint/39952/1/39952_a668_Edmondson.pdf

Bartys, S., Frederiksen, P., Bendix, T., & Burton, K. (2017). System influences on work disability due to low back pain: An international evidence synthesis. *Health Policy*, *121*(8), 903 - 912. https://doi.org/10.1016/j.healthpol.2017.05.011

Bastien, M. F., & Corbière, M. (2019). Return to work following depression: What work accommodations do employers and human resources directors put in place? *Journal of Occupational Rehabilitation*, *29*(2), 423 - 432. https://doi.org/10.1007/s10926-018-9801-y

Beal, D. J., Weiss, H. M., Barros, E., & MacDermid, S. M. (2005). An episodic process model of affective influences on performance. *Journal of Applied Psychology*, *90*(6), 1054 - 1068. https://doi.org/10.1037/0021-9010.90.6.1054

Beatty, J. E. (2012). Career barriers experienced by people with chronic illness: A U.S. study. *Employee Responsibilities and Rights Journal*, *24*(2), 91 - 110. https://doi.org/10.1007/s10672-011-9177-z

Beatty, J, E., & McGonagle, A. (2016). Coaching employees with chronic illness: Supporting professional identities through biographical work. *International Journal of Evidence Based Coaching & Mentoring*, *14*(1), 1 - 15. https://doi.org/10.1037/a0036601

Belil, F., Alhani, F., Ebadi, A., & Kazemnejad, A. (2018). Self-efficacy of people with chronic conditions: A qualitative directed content analysis. *Journal of Clinical Medicine*, *7*(11), 411. https://doi.org/10.3390/jcm7110411

Bell, M. (2015). Mental health at work and the duty to make reasonable adjustments. *Industrial Law Journal*, *44*(2), 194 - 221. https://doi.org/10.1093/indlaw/dwv009

Bending, M., Beale, S., & Hutton, P. J. (2008). *An economic analysis of workplace interventions that promote physical activity*. York Health Economics Consortium. https://www.nice.org.uk/guidance/ph13/evidence/economic-modelling-report-369939277

Benson, T., Sladen, J., Liles, A., & Potts, H. W. (2019). Personal Wellbeing Score (PWS) - a short version of ONS4: development and validation in social prescribing. *BMJ Open Quality*, *8*(2), e000394. https://doi.org/10.1136/bmjoq-2018-000394

Bergsten, E. L., Mathiassen, S. E., & Vingård, E. (2015). Psychosocial work factors and musculoskeletal pain: A cross-sectional study among Swedish flight baggage handlers. *BioMed Research International*. *2015,* 798042. https://doi.org/10.1155/2015/798042

Bevan, A., Houdmont, J., & Menear, N. (2010). The management standards indicator tool and the estimation of risk. *Occupational Medicine*, *60*(7), 525 - 531. https://doi.org/ 10.1093/ occmed/kqq109

Bevan, S. (2015). Economic impact of musculoskeletal disorders (MSDs) on work in Europe. *Best Practice and Research: Clinical Rheumatology*, *29*(3), 356 - 373. https://doi.org/ 10.1016/j.berh.2015.08.002

Bevan, S., Zheltoukhova, K., Mcgee, R., & Blazey, L. (2011). *Ready to work? Meeting the employment and career aspirations of people with multiple sclerosis*. Work Foundation. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.730.2510

Black, C. (2008). *Working for a healthier tomorrow: Dame C of Br* working age population. The Stationery Office. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/209782/hwwb-working-for-a-healthier-tomorrow.pdf

Bodenheimer, T., Lorig, K., Holman, H., & Grumbach. K. (2002). Patient self-management of chronic disease in primary care. Journal of the American Medical Association, *288*(19), 2469 - 2475. https://doi.org/10.1001/jama.288.19.2469

Bodenheimer, T., MacGregor, K., & Sharifi, C. (2005). *Helping patients manage their chronic conditions.* California Healthcare Foundation. https://www.chcf.org/publication/helping-

patients-manage-their-chronic-conditions/

Boger, E., Ellis, J., Latter, S., Foster, C., Kennedy, A., Jones, F., Fenerty, V., Kellar, I., & Demain, S. (2015). Self-management and self-management support outcomes: A systematic review and mixed research synthesis of stakeholder views. *PLoS one*, *10*(7), e0130990. https://doi.org/10.1371/journal.pone.0130990

Boot, C. R., Van Den Heuvel, S. G., Bültmann, U., de Boer, A. G., Koppes, L. L., & Van Der Beek, A. J. (2013). Work adjustments in a representative sample of employees with a chronic disease in the Netherlands. *Journal of Occupational Rehabilitation*, *23*(2), 200 - 208. https://doi.org/10.1007/s10926-013-9444-y

Bosma, A. R., Boot, C. R., De Maaker, M., Boeije, H. R., Schoonmade, L. J., Anema, J. R., & Schaafsma, F. G. (2019). Exploring self-control of workers with a chronic condition: a qualitative synthesis. *European Journal of Work and Organizational Psychology*, *28*(5), 653 - 668. https://doi.org/10.1080/1359432X.2019.1631801

Bosma, A. R., Boot, C. R., Schaafsma, F. G., & Anema, J. R. (2020a). Facilitators, barriers and support needs for staying at work with a chronic condition: A focus group study. *BMC Public Health*, *20*(1), 1 - 11. https://doi.org/10.1186/s12889-020-8320-x

Bosma, A. R., Boot, C. R., Schaafsma, F. G., Kok, G., & Anema, J. R. (2020b). Development of an Intervention to Create a Supportive Work Environment for Employees with Chronic Conditions: An Intervention Mapping Approach. *Journal of Occupational Rehabilitation*, 1 - 11. https://doi.org/10.1007/s10926-020-09885-z

Bowers, B., Cohen, L. W., Elliot, A. E., Grabowski, D. C., Fishman, N. W., Sharkey, S. S., Zimmerman, S., Horn, S. D., & Kemper, P. (2013). Creating and supporting a mixed methods health services research team. *Health Services Research*, *48*(6.2), 2157-2180. https://doi.org/10.1111/1475-6773.12118

Boyd, V. (2012). Are some disabilities more equal than others? Conceptualising fluctuating or recurring impairments within contemporary legislation and practice. *Disability and Society*, *27*(4), 459 - 469. https://doi.org/10.1080/09687599.2012.662828

Brady, T., Murphy, L., Beauchesne, D., Bhalakia, A., Chervin, D., Daniels, B., Greenberg, M., House, M., & O'Colmain, B. (2011). *Sorting through the evidence for the arthritis self-management program and the Chronic Disease Self-Management Program.* Centers for Disease Control and Prevention. https://www.cdc.gov/arthritis/docs/ASMP-executive-summary.pdf

Bramwell, D. L. (2013). *Exploring the role of employers and managers in supporting people with long-term conditions in the workplace* [doctoral thesis, University of Manchester]. http://projects.socialsciences.manchester.ac.uk/hawwn/wp-content/uploads/2016/07/Dr-Donna-Bramwell.pdf

Braspenning, I., Tamminga, S., Frings-Dresen, M. H. W., Leensen, M., Boer, A. de, Tikka, C., Verbeek, J. H., Munir, F., Hemming, S., Amir, Z., Smith, L., Sharp, L., & Haste, A. (2018). *Rehabilitation and return to work after cancer - instruments and practices*. European Agency for Safety and Heath at Work. https://osha.europa.eu/en/ publications/rehabilitation-and-return-work-after-cancer-instruments-and-practices/view

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77 -101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2014). What can “thematic analysis” offer health and wellbeing researchers? *International Journal of Qualitative Studies on Health and Well-Being*, *9* (1). https://doi.org/10.3402/qhw.v9.26152

Bravo, P., Edwards, A., Barr, P. J., Scholl, I., Elwyn, G., & McAllister, M. (2015). Conceptualising patient empowerment: A mixed methods study. *BMC Health Services Research*, *15*(1), 1 - 14. https://doi.org/10.1186/s12913-015-0907-z

Breevaart, K., & Bakker, B. A. (2017). Daily Job Demands and Employee Work Engagement : The role of daily transformational leadership behavior. *Journal of Occupational Health Psychology*, *23*(3), 338 - 349. https://doi.org/10.1037/ocp0000082

Breevaart, K., Bakker, A. B., & Demerouti, E. (2014). Daily self-management and employee work engagement. *Journal of Vocational Behavior*, *84*(1), 31 - 38. https://doi.org/ 10.1016/j.jvb.2013.11.002

British Lung Foundation. (2016). *Lung disease in the UK: big picture statistics*. https:// statistics.blf.org.uk/ lung-disease-uk-big-picture

Brohan, E., & Thornicroft, G. (2010). Stigma and discrimination of mental health problems: Workplace implications. *Occupational Medicine*, *60*(6), 414 - 415. https://doi.org/ 10.1093/ occmed/kqq048

Brohan, E., Henderson, C., Little, K., Thornicroft, G. (2010). Employees with mental health problems: Survey of UK employers’ knowledge, attitudes and workplace practices. *Epidemiology & Psychiatric Sciences*, *19*(4), 326 - 332. https://doi.org/10.1017/ S1121189X0000066X

Brohan, E., Henderson, C., Wheat, K., Malcolm, E., Clement, S., Barley, E. A., Slade, M., & Thornicroft, G. (2012). Systematic review of beliefs, behaviours and influencing factors associated with disclosure of a mental health problem in the workplace. *BMC Psychiatry*. *12*(1), 11. https://doi.org/10.1186/1471-244X-12-11

Brouwers, E. P. M., Joosen, M. C. W., Van Zelst, C., & Van Weeghel, J. (2019). To disclose or not to disclose: A multi-stakeholder focus group study on mental health issues in the work environment. *Journal of Occupational Rehabilitation, 30*(1), 84 - 92. https://doi.org/10.1007/s10926-019-09848-z

Brouwers, Evelien P.M. (2020). Social stigma is an underestimated contributing factor to unemployment in people with mental illness or mental health issues: Position paper and future directions. *BMC Psychology*, *8*(1), 1 - 7. https://doi.org/10.1186/s40359-020-00399-0

Buck, R., Porteous, C., Wynne-Jones, G., Marsh, K., Phillips, C. J., & Main, C. J. (2011). Challenges to remaining at work with common health problems: What helps and what influence do organisational policies have? *Journal of Occupational Rehabilitation*, *21*(4), 501 - 512. https://doi.org/10.1007/s10926-011-9288-2

Buckley, J. P., Keil, A. P., McGrath, L. J., & Edwards, J. K. (2015). Evolving methods for inference in the presence of healthy worker survivor bias. *Epidemiology*, *26*(2), 204 - 212. https://doi.org/10.1097/EDE.0000000000000217

Bugajska, J., & Sagan, A. (2014). Chronic musculoskeletal disorders as risk factors for reduced work ability in younger and ageing workers. *International Journal of Occupational Safety and Ergonomics*, *20*(4), 607 - 615. https://doi.org/ 10.1080/10803548.2014.11077069

Bültmann, U., Rugulies, R., Lund, T., Christensen, K. B., Labriola, M., & Burr, H. (2006). Depressive symptoms and the risk of long-term sickness absence: A prospective study among 4747 employees in Denmark. *Social Psychiatry and Psychiatric Epidemiology*, *41*(11), 875 - 880. https://doi.org/10.1007/s00127-006-0110-y

Burdforf, A. (2012). The need for novel strategies to analyse the dynamic pattern of worker's health over time and the consequences for sustained employability. *Scandinavian Journal of Work, Environment and Health*, *38*(6), 485 - 488. https://doi.org/10.5271/ sjweh.3325

Bury, M. (1982). Chronic illness as biographical disruption. *Sociology of Health & Illness, 4*(2), 167 - 182. https://doi.org/10.1111/1467-9566.ep11339939

Butler, J. A., & Modaff, D. P. (2016). Motivations to disclose chronic illness in the workplace. *Qualitative Research Reports in Communication*, *17*(1), 77 - 84. https://doi.org/10.1080/ 17459435.2016.1143387

Cadden, M. H., Arnett, P. A., Tyry, T. M., & Cook, J. E. (2018). Judgment hurts: The psychological consequences of experiencing stigma in multiple sclerosis. *Social Science and Medicine*, *208*, 158 - 164. https://doi.org/10.1016/j.socscimed.2018.01.015

Caloyeras, J. P., Liu, H., Exum, E., Broderick, M., & Mattke, S. (2014). Managing manifest diseases, but not health risks, saved pepsico money over seven years. *Health Affairs*, *33*(1), 124 - 131. https://doi.org/10.1377/hlthaff.2013.0625

Cameron, E., Gale, N. K., Heath, G., Redwood, S., & Rashid, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health

research. *BMC Medical Research Methodology, 13*(1), 1 - 8. https://doi.org/10.1186/1471-2288-13-117

Cameron, J. E., Voth, J., Jaglal, S. B., Guilcher, S. J. T., Hawker, G., & Salbach, N. M. (2018). “In this together”: Social identification predicts health outcomes (via self-efficacy) in a chronic disease self-management program. *Social Science and Medicine, 208*, 172 - 179. https://doi.org/10.1016/j.socscimed.2018.03.007

Cancelliere, C., Donovan, J., Stochkendahl, M. J., Biscardi, M., Ammendolia, C., Myburgh, C., & Cassidy, J. D. (2016). Factors affecting return to work after injury or illness: Best evidence synthesis of systematic reviews. *Chiropractic and Manual Therapies, 24*(1), 1 - 23. https://doi.org/10.1186/s12998-016-0113-z

Carr, D. B. (2016). Patients with pain need less stigma, not more. *Pain Medicine, 17*(8), 1391 - 1393. https://doi.org/10.1093/pm/pnw158

Cartwright, M., Travis, G., & Blance, A. (2012, September). Murder, muddled thinking and multi-level modelling. *The Psychologist*, *25*(9), 690 - 692. https://openaccess.city.ac.uk/id/eprint/14840/8/

Centers for Disease Control and Prevention. (2019). *Chronic disease self-management program (CDSMP).* https://www.cdc.gov/arthritis/interventions/programs/cdsmp.htm

Challis, D., Hughes, J., Berzins, K., Reilly, S., Abell, J., & Stewart, K. (2010). Self-care and Case Management in Long-term Conditions: The Effective Management of Critical Interfaces. *Report for the National Insitute for Health Research Service Delivery and Organisation programme*. http://www.netscc.ac.uk/hsdr/files/project/SDO_FR_08-1715-201_V01.pdf

Chambers, E., Cook, S., Thake, A., Foster, A., Shaw, S., Hutten, R., Parry, G., & Ricketts, T. (2015). The self-management of longer-term depression: Learning from the patient, a qualitative study. *BMC Psychiatry, 15*(1), 172. https://doi.org/10.1186/s12888-015-0550-6

Charmaz, K. (1995). The body, identity and self: Adapting to impairment. *Sociological Quarterly*, *36*(4), 657 - 680. https://doi.org/10.1111/j.1533-8525.1995.tb00459.x

Chartered Institute of Personnel and Development. (2020). *Health and wellbeing at work.* CIPD. *https://www.cipd.co.uk/Images/health-and-well-being-2020-report_tcm18-73967.pdf*

Clark, V. L., & Creswell, J. W. (2008). *The Mixed Methods Reader*. Sage Publications.

Clayton, S., Barr, B., Nylen, L., Burström, B., Thielen, K., Diderichsen, F., Dahl, E., & Whitehead, M. (2012). Effectiveness of return-to-work interventions for disabled people: A systematic review of government initiatives focused on changing the behaviour of employers. *European Journal of Public Health 22*(3), 434 - 439. https://doi.org/10.1093/

eurpub/ckr101

Cohen, D., Marfell, N., Webb, K., Robling, M., & Aylward, M. (2009). Managing long-term worklessness in primary care: A focus group study. *Occupational Medicine*, *60*(2), 121 - 126. https://doi.org/10.1093/occmed/kqp169

Cohen, S., & Wills, A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin*, *98*(2), 310. https://doi.org/10.1037/0033-2909.98.2.310

Converso, D., Sottimano, I., Guidetti, G., Loera, B., Cortini, M., & Viotti, S. (2018). Aging and work ability: The moderating role of job and personal resources. *Frontiers in Psychology*, *8*, 2262. https://doi.org/10.3389/fpsyg.2017.02262

Coole, C, Watson, P. J., & Drummond, A. (2010). Low back pain patients' experiences of work modifications; A qualitative study. *BMC Musculoskeletal Disorders*, *11*(1), 1 - 10. https://doi.org/10.1186/1471-2474-11-277

Coole, C., Nouri, F., Narayanasamy, M., Baker, P., Khan, S., & Drummond, A. (2018). Engaging workplace representatives in research: What recruitment strategies work best? *Occupational Medicine*, *68*(4), 282 - 285. https://doi.org/10.1093/occmed/kqy047

Cooper, C. L., & Cartwright, S. (1994). Healthy Mind; healthy organization - A proactive approach to occupatonal stress. *Human Relations*, *47*(4), 455 - 471. https://doi.org/10.1177/001872679404700405

Corben, S., & Rosen, R. (2003). *Self-management for Long-term Conditions: Patients' perspectives on the way ahead.* The King's Fund. https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/self-management-long-term-conditions-patients-perspectives-sara-corben-rebecca-rosen-kings-fund-26-july-2005.pdf

Corbin, J. M., & Strauss, A. (1988). *Unending work and care: Managing chronic illness at home*. Jossey-Bass.

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist*, *59*(7), 614 - 625. https://doi.org/10.1037/0003-066X.59.7.614

Corrigan, P. W., Watson, A. C., & Barr, L. (2006). The Self-stigma of Mental Illness: Implications for self-esteem and self-efficacy. *Journal of social and clinical psychology*, *25*(9), 875 - 884. https://doi.org/10.1521/jscp.2006.25.8.875

Corrigan, P., & Rao, D. (2012). On the self-stigma of mental illness: Stages, disclosure, and strategies for change. *Canadian Journal of Psychiatry*, *57*(8), 464 - 469. https://doi.org/10.1177/070674371205700804

Coulter, A., Robers, S., & Dixon, A. (2013). *Delivering better services for people with long-term conditions. Building the house of care.* The King's Fund. https://www.kingsfund.org.uk/publications/delivering-better-services-people-long-term-conditions

Cousins, R., Mackay, C. J., Clarke, S. D., Kelly, C., Kelly, P. J., & McCaig, R. H. (2004). “Management Standards” and work-related stress in the UK: Practical development. *Work and Stress*, *18*(2), 113 - 136. https://doi.org/10.1080/02678370410001734322

Cresswell, J. W. (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Aproaches*. Sage.

Creswell, J. W., Clark, V. L., & Plano Clark, V. (2007). Designing and conducting mixed methods research. Sage.

Croezen, S., Picavet, H. S., Haveman-Nies, A., Verschuren, W. M., De Groot, L. C., & Van’T Veer, P. (2012). Do positive or negative experiences of social support relate to current and future health? Results from the Doetinchem cohort study. *BMC Public Health*, *12*(1), 65. https://doi.org/10.1186/1471-2458-12-65

Crone, D. M., Sarkar, M., Curran, T., Baker, C. M., Hill, D., Loughren, E. A., Dickson, T., & Parker, A. (2020). Mental health first aid for the UK Armed Forces. *Health Promotion International*, *35*(1), 132 - 139. https://doi.org/10.1093/heapro/day112

Crowson, C. S., Liao, K. P., Davis, J. M., Solomon, D. H., Matteson, E. L., Knutson, K. L., Hlatky, M. A., & Gabriel, S. E. (2013). Rheumatoid arthritis and cardiovascular disease. *American Heart Journal*, *166*(4), 622 - 628. https://doi.org/10.1016/j.ahj.2013.07.010

Cullen, K. L., Irvin, E., Collie, A., Clay, F., Gensby, U., Jennings, P. A., Hogg-Johnson, S., Kristman, V., Laberge, M., McKenzie, D., Newnam, S., Palagyi, A., Ruseckaite, R., Sheppard, D. M., Shourie, S., Steenstra, I., Van Eerd, D., & Amick, B. C. (2018). Effectiveness of Workplace Interventions in Return to Work for Musculoskeletal, Pain-Related and Mental Health Conditions: An Update of the Evidence and Messages for Practitioners. *Journal of Occupational Rehabilitation*, *28*(1), 1 - 15. https://doi.org/ 10.1007/s10926-016-9690-x

Davies, D. (2015, July 28). Does research prove health promotion improves employee health? *Personnel Today.* https://www.personneltoday.com/hr/research-prove-health-promotion-improves-employee-health/

de Boer, A., Tamminga, S., Popa, A., Yagil, D., Amir, Z., & Munir, F. (2017). Employer’s management of employees affected by cancer. *Supportive Care in Cancer, 26*(3), 681 - 684. https://doi.org/10.1007/s00520-017-3998-8

de Gieter, S., Hofmans, J., & Bakker, A. B. (2018). Need satisfaction at work, job strain and performance: A diary study. *Journal of Occupational Health Psychology, 23*(3), 361. https://doi.org/10.1037/ocp0000098

de Iongh, A., Fagan, P., Fenner, J., & Kidd, L. (2015). *A practical guide to self-management support*. *Key components for successful implementation.* Health Foundation. https://www.health.org.uk/publications/a-practical-guide-to-self-management-support

de Jong, M., de Boer, A. G., Tamminga, S. J., & Frings-Dresen, M. H. (2015). Quality of Working Life Issues of Employees with a Chronic Physical Disease: A Systematic Review. *Journal of Occupational Rehabilitation*, *25*(1), 182 - 196). https://doi.org/ .1007/s10926-014-9517-6

de Lorenzo, M. S. (2013). Employee mental illness: Managing the hidden epidemic. *Employee Responsibilities and Rights Journal*, *25*(4), 219 - 238. https://doi.org/ 10.1007/s10672-013-9226-x

de Rijk, A., Amir, Z., Cohen, M., Furlan, T., Godderis, L., Knezevic, B., Miglioretti, M., Munir, F., Popa, A. E., Sedlakova, M., Torp, S., Yagil, D., Tamminga, S., & de Boer, A. (2019). The challenge of return to work in workers with cancer: employer priorities despite variation in social policies related to work and health. *Journal of Cancer Survivorship*, *14*, 1 - 12. https://doi.org/10.1007/s11764-019-00829-y

De Silva., & Health Foundation (Great Britain). (2011). *H e l p i n g p e o p l e h e l p t h e r review of the evidence considering whether it is worthwhile to support self-management*. Health Foundation. https://www.health.org.uk/publications/evidence-helping-people-help-themselves

de Vries, H. J., Reneman, M. F., Groothoff, J. W., Geertzen, J. H., & Brouwer, S. (2013). Self-reported work ability and work performance in workers with chronic nonspecific musculoskeletal pain. *Journal of Occupational Rehabilitation*, *23*(1), 1 - 10. https://doi.org/10.1007/s10926-012-9373-1

de Vries, H., Fishta, A., Weikert, B., Rodriguez Sanchez, A., & Wegewitz, U. (2018). Determinants of sickness absence and return to work among employees with common mental disorders: A scoping review. *Journal of Occupational Rehabilitation*, *28*(3), 393 - 417. https://doi.org/10.1007/s10926-017-9730-1

de Vries, H., Koppen, L., Lopez, A., & Foppen, R. (2016). The vicious cycle of stigma and disclosure in “Self-management”: A study among the Dutch HIV population. *AIDS Education and Prevention*, *28*(6), 485 - 498. https://doi.org/10.1521/aeap.2016.28.6.485

Dellve, L., & Eriksson, A. (2017). Health-Promoting Managerial Work: A theoretical framework for a leadership program that supports knowledge and capability to craft sustainable work practices in daily practice and during organizational change. *Societies, 7*(2), 12. https://doi.org/10.3390/soc7020012

Department for Work and Pensions & Department of Health. (2016). *Improving lives: The work, health and disability green paper.* https://www.gov.uk/government/ publications/improving-lives-the-future-of-work-health-and-disability

Department of Health and Social Care (2013). *General practice physical activity questionnaire (GPPAQ)*. https://www.gov.uk/government/publications/general-practice-

physical-activity-questionnaire-gppaq

Department of Health. (2001). *The expert patient ϟ: A new approac Management for the 21st Century*. https://www.rcpjournals.org/content/ clinmedicine/ 2/3/227

Department of Health. (2011). *An Outcomes Strategy for Chronic Obstructive Pulmonary Disease (COPD) and Asthma in England.* https://www.gov.uk/government/ publications/an-outcomes-strategy-for-people-with-chronic-obstructive-pulmonary-disease-copd-and-asthma-in-england

Détaille, S. I., Haafkens, J. A., & van Dijk, F. J. (2003). What employees with rheumatoid arthritis, diabetes mellitus and hearing loss need to cope at work. *Scandinavian Journal of Work, Environment & Health*, *29*(2), 134 - 142. https://doi.org/10.5271/ sjweh.715

Detaille, S. I., Heerkens, Y. F., Engels, J. A., Van Der Gulden, J. W., & Van Dijk, F. J. (2013). Effect evaluation of a self-management program for Dutch workers with a chronic somatic disease: A randomized controlled trial. *Journal of Occupational Rehabilitation*, *23*(2), 189 - 199. https://doi.org/10.1007/s10926-013-9450-0

Dewa, C. S., Van Weeghel, J., Joosen, M. C., & Brouwers, E. P. (2020). What could influence workers' decisions to disclose a mental illness at work? *International Journal of Occupational and Environmental Medicine*, *11*(3), 119 - 127. https://doi.org/ 10.34172/ijoem.2020.1870

Diabetes UK. (2018). *Diabetes prevelance 2018*. https://www.diabetes.org.uk/ professionals/ position-statements-reports/statistics

Diabetes UK. (2019). *Us, Diabetes and a Lot of Facts and Stats.* https:// www.diabetes.org.uk/professionals/position-statements-reports/statistics

Dijkers, M. P. (2009). The value of "traditional" reviews in the era of systematic reviewing. *American Journal of Physical Medicine and Rehabilitation*, *88*(5), 423 - 430. https://doi.org/10.1097/PHM.0b013e31819c59c6

Dineen-Griffin, S., Garcia-Cardenas, V., Williams, K., & Benrimoj, S. I. (2019). Helping patients help themselves: A systematic review of self-management support strategies in primary health care practice. *PLoS ONE*, *14*(8), 1 - 29. https://doi.org/10.1371/ journal.pone.0220116

Dixon, A., Hibbard, J., & Tusler, M. (2009). How do people with different levels of activation self-manage their chronic conditions? *Patient*, *2*(4), 257 - 268. https://doi.org/10.2165/ 11313790-000000000-00000

Do, V., Young, L., Barnason, S., & Tran, H. (2015). Relationships between activation level, knowledge, self-efficacy, and self-management behavior in heart failure patients

discharged from rural hospitals. *F1000Research, 4,* 150. https://doi.org/10.12688/f1000research.6557.1

Donders, N. C. G. M., Roskes, K., & Van der Gulden, J. W. J. (2007). Fatigue, emotional exhaustion and perceived health complaints associated with work-related characteristics in employees with and without chronic diseases. *International Archives of Occupational and Environmental Health*, *80*(7), 577 - 587. https://doi.org/10.1007/s00420-006-0168-6

Drabble, L., Trocki, K. F., Salcedo, B., Walker, P. C., & Korcha, R. A. (2016). Conducting qualitative interviews by telephone: Lessons learned from a study of alcohol use among sexual minority and heterosexual women. *Qualitative Social Work, 15*(1), 118 - 133. https://doi.org/10.1177/1473325015585613

Driscoll, D. L., Salib, P., & Rupert, D. J. (2007). Merging Qualitative and Quantitative Data in Mixed Methods Research : How To and Why Not. *Ecological and Environmental Anthropology*, *3*, 18 - 28. https://digitalcommons.unl.edu/icwdmeea/18/

Dube, L., Rendall-Mkosi, K., Van den Broucke, S., Bergh, A. M., & Mafutha, N. G. (2017). Self-management support needs of patients with chronic diseases in a South African township: A qualitative study. *Journal of Community Health Nursing*, *34*(1), 21 - 31. https://doi.org/10.1080/07370016.2017.1260983

Dwarswaard, J., Bakker, E. J. M., van Staa, A., & Boeije, H. R. (2016). Self-management support from the perspective of patients with a chronic condition: A thematic synthesis of qualitative studies. *Health Expectations, 19*(2), 194 - 208. https://doi.org/10.1111/hex.12346

Earnshaw, V. A., Lang, S. M., Lippitt, M., Jin, H., & Chaudoir, S. R. (2014). HIV Stigma and Physical Health Symptoms: Do Social Support, Adaptive Coping, and/or Identity Centrality Act as Resilience Resources? *AIDS and Behavior, 19*(1), 41 - 49. https://doi.org/10.1007/s10461-014-0758-3

Earnshaw, V. A., Quinn, D. M., & Park, C. L. (2012). Anticipated stigma and quality of life among people living with chronic illnesses. *Chronic Illness, 8*(2), 79 - 88. https://doi.org/10.1177/1742395311429393

Edwards, J. A., Webster, S., Van Laar, D., & Easton, S. (2008). Psychometric analysis of the UK Health and Safety Executive's Management Standards work-related stress Indicator Tool. *Work and Stress*, *22*(2), 96 - 107. https://doi.org/10.1080/02678370802166599

Ellins, J., & Coulter, A. (2005). *How engaged are people in their health care?* Health Foundation. http://pickereurope.org/assets/content/pdf/Project_Reports/Patient-Activation-Survey.pdf

Ellis, J., Boger, E., Latter, S., Kennedy, A., Jones, F., Foster, C., & Demain, S. (2017).

Conceptualisation of a ‘good’ self-manager. *Social Science and Medicine, 176,* 25 - 33. https://doi.org/10.1016/j.socscimed.2017.01.018

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107 - 115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Employee Assistance Programme Association. (2013). *Employee Assistance Programmes Market Watch*. https://www.eapa.org.uk/wp-content/uploads/2014/02/UK-EAPA-MARKET-WATCH-REPORT-2013.pdf

Etuknwa, A., Daniels, K., & Eib, C. (2019). Sustainable Return to Work: A systematic review focusing on personal and social factors. *Journal of Occupational Rehabilitation*, *29*(4), 679 - 700. https://doi.org/10.1007/s10926-019-09832-7

European Network Workplace Health Promotion. (2007). *The Luxembourg Declaration on Workplace Health Promotion*. https://www.enwhp.org/resources/toolip/doc/2018/ 04/24/luxembourg_declaration.pdf

Evans-Lacko, S., & Knapp, M. (2018). Is manager support related to workplace productivity for people with depression: A secondary analysis of a cross-sectional survey from 15 countries. *BMJ Open, 8*(6), e021795. https://doi.org/10.1136/bmjopen-2018-021795

Ezzy. (2000). Illness narratives: Time, hope and HIV. *Social Science and Medicine*, *50*(5), 605 - 617. https://doi.org/10.1016/S0277-9536(99)00306-8

Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, *4*(1), 6 - 16. https://doi.org/10.1177/1558689809349691

Feuerstein, M., Todd, B.L., Moskowitz, M, C., Bruns, G, L., Stoler, M, Nassif., R., & Yu, X. (2010). Work in cancer survivors: A model for practice and research. *Journal of Cancer Survivorship*, *4*(4), 415 - 437. https://doi.org/10.1007/s11764-010-0154-6

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Sage Publications.

Fila, M. J. (2016). The Job Demands, Control, Support Model: Where Are We Now? *International Journal for Research in Management*, *1*(1), 15 - 44. https://tkmim.ac.in/wp-content/uploads/2017/03/Article-3.pdf

Fit For Work. (2017). *Diabetes and how it can affect a person at work*. https://fitforwork.org/ blog/ diabetes-and-how-it-can-affect-a-person-at-work/

Fleischmann, M., Carr, E., Xue, B., Zaninotto, P., Stansfeld, S. A., Stafford, M., & Head, J. (2018). Changes in autonomy, job demands and working hours after diagnosis of chronic disease: A comparison of employed and self-employed older persons using the English Longitudinal Study of Ageing (ELSA). *Journal of Epidemiology and Community Health, 72*(10), 951 - 957. https://doi.org/10.1136/jech-2017-210328

Flurey, C. A., Morris, M., Richards, P., Hughes, R., & Hewlett, S. (2014). It’s like a juggling

act: Rheumatoid arthritis patient perspectives on daily life and flare while on current treatment regimes. *Rheumatology, 53*(4), 696 - 703. https://doi.org/10.1093/ rheumatology/ket416

Foitzek, N., Ávila. C. C.,, Ivandic, I., Bitenc, Č., Cabello, M., Gruber, S., Leonardi, M., Muñoz-Murillo, A., Scaratti, C., Tobiasz-Adamczyk, B., Vlachou, A., Esteban, E., Sabariego, C., & Coenen, M. (2018). What persons with chronic health conditions need to maintain or return to work - Results of an online-survey in seven european countries. *International Journal of Environmental Research and Public Health, 15*(4), 595. https://doi.org/10.3390/ijerph15040595

Ford, D. V., Jones, K. H., Middleton, R. M., Lockhart-Jones, H., Maramba, I. D. C., Noble, G. J., Osborne, L. A., & Lyons, R. A. (2012). The feasibility of collecting information from people with Multiple Sclerosis for the UK MS Register via a web portal: Characterising a cohort of people with MS. *BMC Medical Informatics and Decision Making*, *12*(1), 1. https://doi.org/10.1186/1472-6947-12-73

Foster, C., & Fenlon, D. (2011). Recovery and self-management support following primary cancer treatment. *British Journal of Cancer*, *105*(1), S21 - S28. https://doi.org/ 10.1038/ bjc.2011.419

Foster, D., & Fosh, P. (2010). Negotiating ‘difference’: Representing disabled employees in the British workplace. *British Journal of Industrial Relations*, *48*(3), 560-582. https:// doi.org/10.1111/j.1467-8543.2009.00748.x

Foster, C., Breckons, M., Cotterell, P., Barbosa, D., Calman, L., Corner, J., Fenlon, D., Foster, R., Grimmett, C., Richardson, A., & Smith, P. W. (2015a). Cancer survivors’ self-efficacy to self-manage in the year following primary treatment. *Journal of Cancer Survivorship*, *9*(1), 11 - 19. https://doi.org/10.1007/s11764-014-0384-0

Foster, C, Boger, E., Ellis, J., Demain, S., Latter, S., Fenerty, V., Kellar, I., Jones, F., & Kennedy, A. (2015b). Self-Management and Self-Management Support Outcomes: A Systematic Review and Mixed Research Synthesis of Stakeholder Views. *PloS one, 10*(7). https://doi.org/10.1371/journal.pone.0130990

Foster, D. (2007). Legal obligation or personal lottery?: Employee experiences of disability and the negotiation of adjustments in the public sector workplace. *Work, Employment and Society 21*(1), 67 - 84. https://doi.org/10.1177/0950017007073616

Fournier, J. C., DeRubeis, R. J., Amsterdam, J., Shelton, R. C., & Hollon, S. D. (2015). Gains in employment status following antidepressant medication or cognitive therapy for depression. *British Journal of Psychiatry*, *206*(4), 332-338. https://doi.org/10.1192/ bjp.bp.113.133694

Frank, A. (1995). *The Wounded Storyteller: Body, Illness and Ethics*. University of Chicago

Press.

Frank, A. W. (1993). The Rhetoric of Self-Change: Illness Experience as Narrative*: The Sociological Quarterly*, *34*(1), 39 - 52. http://www.jstor.org/stable/4121557

Frederiksen, P., Karsten, M. M., Indahl, A., & Bendix, T. (2015). What challenges manual workers' ability to cope with back pain at work, and what influences their decision to call in sick? *Journal of Occupational Rehabilitation*, *25*(4), 707 - 716. https://doi.org/10.1007/s10926-015-9578-1

Funnell, M. M. (2010). Peer-based behavioural strategies to improve chronic disease self-management and clinical outcomes: evidence, logistics, evaluation considerations and needs for future research. *Family Practice, 27*(suppl_1), i17 - i22. https://doi.org/10.1093/fampra/cmp027

Funnell, M. M., & Anderson, R. M. (2004). Empowerment and Self-Management of Diabetes. *Clinical Diabetes, 22*(3), 123 - 127. https://doi.org/10.2337/diaclin.22.3.123

Fusch, P. I., & Ness, L. R. (2015). Are We There Yet? Data Saturation in Qualitative Research. *The Qualitative Report, 20*(9), 1408. https://nsuworks.nova.edu/tqr/vol20/iss9/3

Galdas, P., Fell, J., Bower, P., Kidd, L., Blickem, C., Mcpherson, K., Hunt, K., Gilbody, S., & Richardson, G. (2015). The effectiveness of self-management support interventions for men with long-term conditions: a systematic review and meta-analysis. *BMJ open*, *5*(3). https://doi.org/10.1136/bmjopen-2014-006620

Gallant, M. P. (2003). The Influence of Social Support on Chronic Illness Self-Management: A Review and Directions for Research. *Health Education & Behavior*, *30*(2), 170 - 195. https://doi.org/10.1177/1090198102251030

Gallant, M. P., Spitze, G. D., & Prohaska, T. R. (2007). Help or hindrance? How family and friends influence chronic illness self-management among older adults. *Research on Ageing*, *29*(5), 375 - 409. https://doi.org/10.1177/0164027507303169

Gao, J., Arden, M., Hoo, Z. H., & Wildman, M. (2019). Understanding patient activation and adherence to nebuliser treatment in adults with cystic fibrosis: Responses to the UK version of PAM-13 and a think aloud study. *BMC Health Services Research*, *19*(1), 1 - 12. https://doi.org/10.1186/s12913-019-4260-5

Gayed, A., Milligan-Saville, J. S., Nicholas, J., Bryan, B. T., LaMontagne, A. D., Milner, A., Madan, I., Calvo, R. A., Christensen, H., Mykletun, A., Glozier, N., & Harvey, S. B. (2018). Effectiveness of training workplace managers to understand and support the mental health needs of employees: A systematic review and meta-analysis. *Occupational and Environmental Medicine*, *75*(6), 462 - 470. https://doi.org/10.1136/oemed-2017-104789

Gibson, B., Umeh, K. F., Newson, L., & Davies, I. (2018). Efficacy of the best possible self protocol in diabetes self-management: A mixed-methods approach. *Journal of Health Psychology,* 1 - 13. https://doi.org/10.1177/1359105318814148

Gignac, M A., & Cao, X. (2009). “Should I tell my employer and coworkers I have arthritis?” A longitudinal examination of self-disclosure in the work place. *Arthritis Care and Research*, *61*(12), 1753 - 1761. https://doi.org/10.1002/art.24889

Gignac, M. A., Bowring, J., Jetha, A., Beaton, D. E., Breslin, F. C., Franche, R. L., Irvin, E., Macdermid, J. C., Shaw, W. S., Smith, P. M., Van Eerd, D., Saunders, R., Thompson, A., Tompa, E., Van Eerd, D., & Saunders, R. (2020). Disclosure, Privacy and Workplace Accommodation of Episodic Disabilities: Organizational Perspectives on Disability Communication-Support Processes to Sustain Employment. *Journal of Occupational Rehabilitation, 1,* 2. https://doi.org/10.1007/s10926-020-09901-2

Glanz, B. I., Dégano, I. R., Rintell, D. J., Chitnis, T., Weiner, H. L., & Healy, B. C. (2012). Work productivity in relapsing multiple sclerosis: Associations with disability, depression, fatigue, anxiety, cognition, and health-related quality of life. *Value in Health*, *15*(8), 1029 - 1035. https://doi.org/10.1016/j.jval.2012.07.010

Glaser, B. G., & Strauss, A. L. (2017). *Discovery of grounded theory: Strategies for qualitative research.* Routledge.

Glasgow, R. E., Davis, C. L., Funnell, M. M., & Beck, A. (2003). Implementing Practical Interventions to Support Chronic Illness Self-Management. *The Joint Commission Journal on Quality and Safety*, *29*(11), 563 - 574. https://doi.org/10.1016/S1549-3741(03)29067-5

Glasgow, N. J., Jeon, Y. H., Kraus, S. G., & Pearce-Brown, C. L. (2008). Chronic disease self-management support: The way forward for Australia. *Medical Journal of Australia*, *189*, S14 - S16. https://doi.org/10.5694/j.1326-5377.2008.tb02203.x

Gleason, K. T., Tanner, E. K., Boyd, C. M., Saczynski, J. S., & Szanton, S. L. (2016). Factors associated with patient activation in an older adult population with functional difficulties. *Patient Education and Counseling*, *99*(8), 1421 - 1426. https://doi.org/ 10.1016/j.pec.2016.03.011

Gobeil-Lavoie, A. P., Chouinard, M. C., Danish, A., & Hudon, C. (2019). Characteristics of self-management among patients with complex health needs: A thematic analysis review. *BMJ Open*, *9*(5), e028344. https://doi.org/10.1136/bmjopen-2018-028344

Goetzel, R. Z., & Ozminkowski, R. J. (2008). The Health and Cost Benefits of Work Site Health-Promotion Programs. *Annual Review of Public Health*, *29*(1), 303 - 323. https://doi.org/10.1146/annurev.publhealth.29.020907.090930

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identify.* Simon and

Schuster.

Goffman, E. (2009). *Stigma: Notes on the Management of Spoiled Identity.* (2nd ed). Simon and Schuster.

Grace-Martin, K. (n.d.). *Multiple impution in a nutshell.* https://www.theanalysisfactor.com/multiple-imputation-in-a-nutshell/

Grady, P., & Gough, L. (2014). Self-Management: A Comprehensive Approach to Management of Chronic Conditions. *American Journal of Public Health*, *104*(8), e25 - e31. https://doi.org/10.2105/AJPH.2014

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, *26*(2), 91 - 108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Greeff, M. (2013). Disclosure and Stigma: A Cultural Perspective. *Stigma Discrimination and Living with HIV/AIDS*, 71 - 95. https://doi.org/10.1007/978-94-007-6324-1_5

Greenhalgh, T. (2009). Patient and public involvement in chronic illness: beyond the expert patient. *BMJ, 338.* https://doi.org/10.1136/bmj.b49

Gruber-Baldini, A. L., Velozo, C., Romero, S., & Shulman, L. M. (2017). Validation of the PROMIS® measures of self-efficacy for managing chronic conditions. *Quality of Life Research*, *26*(7), 1915 - 1924. https://doi.org/10.1007/s11136-017-1527-3

Grund, S., Lüdtke, O., & Robitzsch, A. (2018). Multiple Imputation of Missing Data for Multilevel Models: Simulations and Recommendations. *Organizational Research Methods*, *21*(1), 111 - 149. https://doi.org/10.1177/1094428117703686

Haafkens, J. A., Kopnina, H., Meerman, M. G. & Van Dijk, F. J. (2011). Facilitating job retention for chronically ill employees: Perspectives of line managers and human resource managers. *BMC Health Services Research*, *11*(1), 104. https://doi.org/10.1186/1472-6963-11-104

Habibi, E., Dehghan, H., Safari, S., Mahaki, B., & Hassanzadeh, A. (2014). Effects of work-related stress on work ability index among refinery workers. *Journal of Education and Health Promotion*, *3*. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3977403/#

Hajat, C., & Stein, E. (2018). The global burden of multiple chronic conditions: A narrative review. *Preventive Medicine Reports*, *12*, 284 - 293. https://doi.org/10.1016/j.pmedr.2018.10.008

Hakkarainen, P., Moilanen, L., Hanninen, V., Räsänen, K., & Munir, F. (2017a). Disclosure of type 1 diabetes at work among Finnish workers. *Diabetic Medicine*, *34*(1), 115 - 119. https://doi.org/10.1111/dme.13134

Hakkarainen, P., Sund, R., Arffman, M., Koski, S., Hänninen, V., Moilanen, L., & Räsänen, K. (2017b). Working people with type 1 diabetes in the Finnish population. *BMC Public*

Health, *17*(1), 1 - 11. https://doi.org/10.1186/s12889-017-4723-8

Halcomb, E. J., & Hickman, L. (2015). Mixed methods research. *Nursing Standard, 29*(32), 41 - 47. https://doi.org/10.7748/ns.29.32.41.e8858

Hämmig, O. (2017). Health and well-being at work: The key role of supervisor support. *SSM Population Health, 3,* 393 - 402. https://doi.org/10.1016/j.ssmph.2017.04.002

Hanel, P. H., & Vione, K. C. (2016). Do student samples provide an accurate estimate of the general public? *PLoS One*, *11*(12), 1 - 10. https://doi.org/10.1371/journal.pone.0168354

Hanlon, P., Hannigan, L., Rodriguez-Perez, J., Fischbacher, C., Welton, N. J., Dias, S., Mair, F. S., Guthrie, B., Wild, S., & McAllister, D. A. (2019). Representation of people with comorbidity and multimorbidity in clinical trials of novel drug therapies: An individual-level participant data analysis. *BMC Medicine*, *17*(1), 1 - 12. https://doi.org/10.1186/s12916-019-1427-1

Hansen, C. L., Baelum, J., Thilsing, T., Skadhauge, L., Dahl, S., Thomsen, G., Omland, O., Sigsgaard, T., & Sherson, D. (2012). Consequences of asthma on job absenteeism and job retention. *Scandinavian Journal of Public Health*, *40*(4), 377 - 384. https://doi.org/10.1177/1403494812449079

Hanson, W. E., Plano Clark, V. L., Petska, K. S., Creswell, J. W., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, *52*(2), 224 - 235. https://doi.org/10.1037/0022-0167.52.2.224

Harris, E. G., Artis, A. B., Walters, J. H., & Licata, J. W. (2006). Role stressors, service worker job resourcefulness, and job outcomes: An empirical analysis. *Journal of Business Research, 59*(4), 407 - 415. https://doi.org/10.1016/j.jbusres.2005.06.003

Harvey, L., Xi, M., Bloom, C. T., Fowles, J. B., Terry, P., Hibbard, J., Xi, M., Hibbard, J., Bloom, C. T., & Harvey, L. (2009). Measuring self-management of patients' and employees' health: Further validation of the Patient Activation Measure (PAM) based on its relation to employee characteristics. *Patient Education and Counseling*, *77*(1), 116 - 122. https://doi.org/10.1016/j.pec.2009.02.018

Haslam, C., Brown, S., Atkinson, S., & Haslam, R. (2004). Patients' experiences of medication for anxiety and depression: Effects on working life. *Family Practice*, *21*(2), 204 - 212. https://doi.org/10.1093/fampra/cmh218

Hassard, J., Wang, D., Cox, T., Muylaert, K., Namysł, AKazenas, A., & Podniece, Z. (2012). *Motivation for employers* to carry out workplace health promotion: literature review. European Agency for Safety and Health at Work. http://irep.ntu.ac.uk/id/eprint/31137/

Hategeka, C., Traboulsee, A., Mcmullen, K., & Lynd, L. (2016, November 25-18). Work Productivity Loss and Caregivers ' Burden Are Associated are Associated with

Perceived Stigma Among People with Multiple Sclerosis [conference abstract]. EndMS Conference, Toronto. https://doi.org/10.13140/RG.2.2.24138.16326

Health and Safety Executive. (2004). *HSE Management standards Analysis tool and User manual*. https://www.hse.gov.uk/stress/assets/docs/indicatortoolmanual.pdf

Health and Safety Executive. (2019a). *Work-related stress, anxiety or depression statistics in Great Britain, 2019*. https://www.hse.gov.uk/statistics/causdis/stress.pdf

Health and Safety Executive (2019b). *Work related musculoskeletal disorder statistics (WRMSDs) in Great Britain, 2019*. https://www.hse.gov.uk/sTATIstics/causdis/msd.pdf

Healthshield. (2018). *Employee Benefits Healthcare Research 2018*. Employee Benefits. https://employeebenefits.co.uk/content/uploads/2019/01/EB_010918_Healthcare-Research.pdf

Heijmans, M., Rijken, M., Foets, M., De Ridder, D., Schreurs, K., & Bensing, J. (2004). The stress of being chronically ill: From disease-specific to task-specific aspects. *Journal of Behavioral Medicine*, *27*(3), 255 - 271. https://doi.org/10.1023/ B:JOBM.0000028498.16767.a2

Heinrichs, K., Angerer, P., & Loerbroks, A. (2018a). Psychosocial working conditions as determinants of asthma self-management at work: A systematic review. *Journal of Asthma, 55*(10), 1195 - 1104. https://doi.org/10.1080/02770903.2017.1396469

Heinrichs, K., Hummel, S., Gholami, J., Schultz, K., Li, J., Sheikh, A., & Loerbroks, A. (2019). Psychosocial working conditions, asthma self-management at work and asthma morbidity: A cross-sectional study. *Clinical and Translational Allergy*, *9*(1), 1 - 11. https://doi.org/10.1186/s13601-019-0264-9

Henderson, C., & Thornicroft, G. (2009). Stigma and discrimination in mental illness: Time to Change. *The Lancet*, *373*(9679), 1928 - 1930. https://doi.org/10.1016/s0140-6736(09)61046-1

Hendriks, S. M., Spijker, J., Licht, C. M. M., Hardeveld, F., De Graaf, R., Batelaan, N. M., Penninx, B. W., & Beekman, A. T. (2015). Long-term work disability and absenteeism in anxiety and depressive disorders. *Journal of Affective Disorders*, *178*, 121 - 130. https://doi.org/10.1016/j.jad.2015.03.004

Henshall, C., Greenfield, S., & Gale, N. (2017). The Role of Self-Management Practices as Mechanisms for Re-Establishing Normality in Cancer Survivors. *Qualitative Health Research*, *27*(4), 520 - 533. https://doi.org/10.1177/1049732316651252

Her Majesty's Government. (2020). *Disability Confident ï Are you disability confident?* https://disabilityconfident.campaign.gov.uk

Hibbard, J. H., Stockard, J., Mahoney, E. R., & Tusler, M. (2004). Development of the Patient Activation Measure (PAM): Conceptualizing and Measuring Activation in

Patients and Consumers. *Health Services Research*, *39(4p1)*, 1005 - 1026. https://dx.doi.org/10.1111%2Fj.1475-6773.2004.00269.x

Hibbard, J. H., Mahoney, E. R., Stockard, J., & Tusler, M. (2005). Development and testing of a short form of the patient activation measure. *Health Services Research*, *40*(6p1), 1918 - 1930. https://doi.org/10.1111/j.1475-6773.2005.00438.x

Hibbard, J. H., Mahoney, E. R., Stock, R., & Tusler, M. (2007). Do increases in patient activation result in improved self-management behaviors? *Health Services Research*, *42*(4), 1443 - 1463. https://doi.org/10.1111/j.1475-6773.2006.00669.x

Hibbard, J. H. (2014). *Using the Patient Activation Measure to Improve Outcomes and Control Costs.* Presentation, University of Oregon. https://www.kingsfund.org.uk/sites/default/files/media/Judith%20H.%20Hibbard.pdf

Hibbard, J.H., & Gilburt, H. (2014). *Supporting people to manage their health: An introduction to patient activation*. The King's Fund. https://www.kingsfund.org.uk/publications/supporting-people-manage-their-health

Hiles, S. A., Harvey, E. S., McDonald, V. M., Peters, M., Bardin, P., Reynolds, P. N., Upham, J. W., Baraket, M., Bhikoo, Z., Bowden, J., Brockway, B., Chung, L. P., Cochrane, B., Foxley, G., Garrett, J., Hew, M., Jayaram, L., Jenkins, C., Katelaris, C., … Gibson, P. G. (2018). Working while unwell: Workplace impairment in people with severe asthma. *Clinical and Experimental Allergy*, *48*(6), 650 - 662. https://doi.org/10.1111/cea.13153

Hill, D., Lucy, D., Tyers, C., & James, L. (2007). *What works at work? Review of evidence assessing the effectiveness of workplace interventions to prevent and manage common health problems*. The Stationery Office.

Hirschfeld, R. M. A. (2001). The comorbidity of major depression and anxiety disorders: Recognition and management in primary care. *Primary Care Companion to the Journal of Clinical Psychiatry*, *3*(6), 244 - 254. https://doi.org/10.4088/pcc.v03n0609

Hjärtström, C., Lindahl Norberg, A., Johansson, G., & Bodin, T. (2018). To work despite chronic health conditions: A qualitative study of workers at the Swedish Public Employment Service. *BMJ Open*, *8*(4). https://doi.org/10.1136/bmjopen-2017-019747

Hoffman, A. J. (2013). Enhancing self-efficacy for optimized patient outcomes through the theory of symptom self-management. *Cancer Nursing, 36*(1), E16. https://doi.org/10.1097/NCC.0b013e31824a730a

Holland, P., & Collins, A. M. (2018). "Whenever I can I push myself to go to work": a qualitative study of experiences of sickness presenteeism among workers with rheumatoid arthritis. *Disability and Rehabilitation*, *40*(4), 404 - 413. https://doi.org/10.1080/09638288.2016.1258436

Holmgren, K., & Ivanoff, S. D. (2007). Supervisors' views on employer responsibility in the

return to work process. A focus group study. *Journal of Occupational Rehabilitation*, *17*(1), 93 - 106. https://doi.org/10.1007/s10926-006-9041-4

Holt, A. (2010). Using the telephone for narrative interviewing: A research note. *Qualitative Research, 10*(1), 113 - 121. https://doi.org/10.1177/1468794109348686

Hutting, N., Staal, J. B., Heerkens, Y. F., Engels, J. A., & M. W. Nijhuis-van der Sanden. (2013). A self-management program for employees with complaints of the arm, neck, or shoulder (CANS): Study protocol for a randomized controlled trial, *Trials, 14*(10), 258. https://doi.org/ 10.1186/1745-6215-14-258

Hutting, N., Staal, J., Engels, J. A., Heerkens, Y. F., Detaille, S. I., & Nijhuis-Van Der Sanden, M. W. G. (2015). Effect evaluation of a self-management programme for employees with complaints of the arm, neck or shoulder: A randomised controlled trial. *Occupational and Environmental Medicine, 72(*12), 852 - 861. https://doi.org/10.1136/ oemed-2015-103089

Hutting, N., Detaille, S. I., Heerkens, Y. F., Engels, J. A., Staal, J. B., & Nijhuis-van der Sanden, M. W. (2017). Experiences of Participants in a Self-Management Program for Employees with Complaints of the Arm, Neck or Shoulder (CANS): A Mixed Methods Study. *Journal of Occupational Rehabilitation*, *27*(1), 35 - 48. https://doi.org/10.1007/ s10926-016-9630-9

Hutting, N., Johnston, V., Staal, J. B., & Heerkens, Y. F. (2019). Promoting the use of self-management strategies for people with persistent musculoskeletal disorders: The role of physical therapists. *Journal of Orthopaedic and Sports Physical Therapy*, *49*(4), 212 - 215. https://doi.org/10.2519/jospt.2019.0605

Hydén, L. C. (2008). Illness and narrative. *Sociology of Health & Illness*, *19*(1), 48 - 69. https://doi.org/10.1111/j.1467-9566.1997.tb00015.x

IBM Corporation. (2016). IBM SPSS statistics for Macintosh (Version 24) [compter software]. https://www.ibm.com/uk-en/analytics/spss-statistics-software

Institute of Employment Studies. (2009). *Organisational response to the HSE managemement standards for work-related* stress. http://www.hse.gov.uk/ research/rrpdf/rr693.pdf

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods*, *18*(1), 3 - 20. https://doi.org/10.1177/1525822X05282260

Jääskeläinen, A., Kausto, J., Seitsamo, J., Ojajärvi, A., Nygård, C. H., Arjas, E., & Leino-Arjas, P. (2016). Work ability index and perceived work ability as predictors of disability pension: A prospective study among Finnish municipal employees. *Scandinavian Journal of Work, Environment and Health*, *42*(6), 490 - 499. https://doi.org/10.5271/

sjweh.3598

James, J., Harris, Y. T., Kronish, I. M., Wisnivesky, J. P., & Lin, J. J. (2018). Exploratory study of impact of cancer-related posttraumatic stress symptoms on diabetes self-management among cancer survivors. *Psycho-Oncology, 27*(2), 648 - 653. https://doi.org/10.1002/pon.4568

Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy, 5*(4), 87. https://doi.org/10.4103/0976-0105.141942

Jansson, I., & Gunnarsson, A. B. (2018). Employers' views of the impact of mental health problems on the ability to work. *Work*, *59*(4), 585 - 598. https://doi.org/10.3233/WOR-182700

Johansson, G., Lundberg, O., & Lundberg, I. (2006). Return to work and adjustment latitude among employees on long-term sickness absence. *Journal of Occupational Rehabilitation*, *16*(2), 185 - 195. https://doi.org/10.1007/s10926-006-9020-9

Johnson, J. V., & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of random sample of the Swedish Working Population. *American Journal of Public Health*, *78*(10), 1336 - 1342. https://doi.org/10.2105/AJPH.78.10.1336

Johnson, R., Onwuegbuzie, A. J., & Turner, L. (2007). Mixed methods research. *The Cambridge Handbook of Sociology*, *1*(2), 112 - 133. https://doi.org/10.1017/9781316418376.015

Johnston, V., Jull, G., Sheppard, D. M., & Ellis, N. (2013). Applying principles of self-management to facilitate workers to return to or remain at work with a chronic musculoskeletal condition. *Manual Therapy*, *18*(4), 274 - 280. https://doi.org/10.1016/j.math.2013.04.001

Jones, M. C., MacGillivray, S., Kroll, T., Zohoor, A. R., & Connaghan, J. (2011). A thematic analysis of the conceptualisation of self-care, self-management and self-management support in the long-term conditions management literature. *Journal of Nursing and Healthcare of Chronic Illness*, *3*(3), 174 - 185. https://doi.org/10.1111/j.1752-9824.2011.01096.x

Jongen, P. J., Ruimschotel, R., Heerings, M., Hussaarts, A., Duyverman, L., Van der Zande, A., Valkenburg-Vissers, J., Wolper, H., Van Droffelaar, M., Lemmens, W., Donders, R., & Visser, L. H. (2014). Improved self-efficacy in persons with relapsing remitting multiple sclerosis after an intensive social cognitive wellness program with participation of support partners: A 6-months observational study. *Health and Quality of Life Outcomes*, *12*(1), 40. https://doi.org/10.1186/1477-7525-12-40

Joseph, B., & Walker, A. (2017). Employee assistance programs in Australia: the

perspectives of organisational leaders across sectors. *Asia Pacific Journal of Human Resources*, 55(2), 177 - 191. https://doi.org/10.1111/1744-7941.12124

Joseph, B., Walker, A., & Fuller-Tyszkiewicz, M. (2014). Evaluating the effectiveness of employee assistance programmes: a systematic review. *European Journal of Work and Organizational Psychology*, *27*(1), 1 - 15. https://doi.org/10.1080/1359432X.2017.1374245

Joseph, D. H., Griffin, M., Hall, R. F., & Sullivan, E. D. (2001). Peer coaching: an intervention for individuals struggling with diabetes. *The Diabetes Educator*, *25*(5), 703 - 710. https://doi.org/10.1177%2F014572170102700511

Karasek, R. (1979). Job Demands, job decision latitude and mental strain : Implications for job redesign. *Administrative Science Quarterly*, *24*(2), 285 - 308. https://www.jstor.org/stable/2392498

Kato, A., Fujimaki, Y., Fujimori, S., Izumida, Y., Suzuki, R., Ueki, K., Kadowaki, T., & Hashimoto, H. (2016). A qualitative study on the impact of internalized stigma on type 2 diabetes self-management. *Patient Education and Counseling, 99*(7), 1233 - 1239. https://doi.org/10.1016/j.pec.2016.02.002

Kaye, H. S., Jans, L. H., & Jones, E. C. (2011). Why don't employers hire and retain workers with disabilities? *Journal of Occupational Rehabilitation, 21*(4), 526 - 536. https://doi.org/10.1007/s10926-011-9302-8

Kelley, K., Clark, B., Brown, V., & Sitzia, J. (2003). Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care*, *15*(3), 261 - 266. https://doi.org/10.1093/intqhc/mzg031

Kendall, N. A., Burton, A., Main, C., & Watson, P. (2009). *Tackling musculoskeletal problems: a guide for clinic and workplace-identifying obstacles using the psychosocial flags framework.* The Stationery Office. http://eprints.hud.ac.uk/id/eprint/5432/

Kennedy, A., Reeves, D., Bower, P., Lee, V., Middleton, E., Richardson, G., Gardner, C., Gately, C., & Rogers, A. (2007). The effectiveness and cost effectiveness of a national lay-led self care support programme for patients with long-term conditions: A pragmatic randomised controlled trial. *Journal of Epidemiology and Community Health, 61*(3), 254 - 261. https://doi.org/10.1136/jech.2006.053538

Kennedy, A., Bower, P., Reeves, D., Blakeman, T., Bowen, R., Chew-Graham, C., Eden, M., Fullwood, C., Gaffney, H., Gardner, C., Lee, V., Morris, R., Protheroe, J., Richardson, G., Sanders, C., Swallow, A., Thompson, D., & Rogers, A. (2013). Implementation of self management support for long term conditions in routine primary care settings: Cluster randomised controlled trial. *BMJ,* 346. https://doi.org/10.1136/bmj.f2882

Kennedy, A., Rogers, A., Chew-Graham, C., Blakeman, T., Bowen, R., Gardner, C., Lee, V.,

Morris, R., & Protheroe, J. (2014). Implementation of a self-management support approach (WISE) across a health system: a process evaluation explaining what did and did not work for organisations, clinicians and patients. *Implementation Science*, *9*(1), 129. https://doi.org/10.1186/s13012-014-0129-5

Kennedy, F., Haslam, C., Munir, F., & Pryce, J. (2007). Returning to work following cancer: A qualitative exploratory study into the experience of returning to work following cancer. *European Journal of Cancer Care*, *16*(1), 17 - 25. https://doi.org/10.1111/j.1365-2354.2007.00729.x

Kerr, R., McHugh, M., & McCrory, M. (2009). HSE Management Standards and stress-related work outcomes. *Occupational Medicine*, *59*(8), 574 - 579. https://doi.org/10.1093/occmed/kqp146

Kinnunen, U., & Nätti, J. (2018). Work ability score and future work ability as predictors of register-based disability pension and long-term sickness absence: A three-year follow-up study. *Scandinavian Journal of Public Health*, *46*(3), 321 - 330. https://doi.org/10.1177/1403494817745190

Kirk-Brown, A. K., Van Dijk, P. A., Simmons, R. D., Bourne, M. P., & Cooper, B. K. (2014). Disclosure of diagnosis of multiple sclerosis in the workplace positively affects employment status and job tenure. *Multiple Sclerosis Journal*, *20*(7), 871 - 876. https://doi.org/10.1177/1352458513513967

Koetsenruijter, J., Van Lieshout, J., Vassilev, I., Portillo, M. C., Serrano, M., Knutsen, I., Roukova, P., Lionis, C., Todorova, E., Foss, C., Rogers, A., & Wensing, M. (2014). Social support systems as determinants of self-management and quality of life of people with diabetes across Europe: Study protocol for an observational study. *Health and Quality of Life Outcomes, 12*(1), 29. https://doi.org/10.1186/1477-7525-12-29

Koolhaas, J. M., Bartolomucci, A., Buwalda, B., de Boer, S. F., Flügge, G., Korte, S. M., Meerlo, P., Murison, R., Olivier, B., Palanza, P., Richter-Levin, G., Sgoifo, A., Steimer, T., Stiedl, O., van Dijk, G., Wöhr, M., & Fuchs, E. (2011). Stress revisited: A critical evaluation of the stress concept. *Neuroscience and Biobehavioral Reviews*, *35*(5), 1291 - 1301. https://doi.org/10.1016/j.neubiorev.2011.02.003

Koolhaas, W., Van Der Klink, J. J., De Boer, M. R., Groothoff, J. W., & Brouwer, S. (2014). Chronic health conditions and work ability in the ageing workforce: The impact of work conditions, psychosocial factors and perceived health. *International Archives of Occupational and Environmental Health, 87*(4), 433 - 443. https://doi.org/10.1007/s00420-013-0882-9

Koopmans, P. C., Roelen, C. A. M., & Groothoff, J. W. (2008). Sickness absence due to depressive symptoms. *International Archives of Occupational and Environmental*

Health, *81*(6), 711 - 719. https://doi.org/10.1007/s00420-007-0243-7

Kopnina, H., Haafkens, J. A., Liddy, C., Blazkho, V., Mill, K., Neill, S. O., August, U., Bajorek, Z., Summers, K., Bevan, S., Matarese, M., Lommi, M., De Marinis, M. G., Riegel, B., Dye, C. J., Williams, J. E., Evatt, J. H., Miller, C., McLafferty, E., & Beckowski, M. (2014). Effect evaluation of a self-management program for Dutch workers with a chronic somatic disease: A randomized controlled trial. *Journal of Occupational Rehabilitation*, *27*(2), 105 - 112. https://doi.org/10.1007/s10926-013-9450-0

Kornhaber, R., Walsh, K., Duff, J., & Walker, K. (2016). Enhancing adult therapeutic interpersonal relationships in the acute health care setting: An integrative review. In *Journal of Multidisciplinary Healthcare, 9*, 537. https://doi.org/10.2147/JMDH.S116957

Krupa, T., Kirsh, B., Cockburn, L., & Gewurtz, R. (2009). Understanding the stigma of mental illness in employment. *Work*, 33(4), 413 - 425. https://doi.org/10.3233/wor-2009-0890

Kuoppala, J., Lamminpää, A., & Husman, P. (2008). Work health promotion, job well-being, and sickness absences—a systematic review and meta-analysis. *Journal of Occupational and Environmental Medicine*, *50*(11), 1216 - 1227. https://doi.org/10.1097/JOM.0b013e31818dbf92

Landfeldt, E., Castelo-Branco, A., Svedbom, A., Löfroth, E., Kavaliunas, A., & Hillert, J. (2016). Sick leave and disability pension before and after diagnosis of multiple sclerosis. *Multiple Sclerosis*, *22*(14), 1859 - 1866. https://doi.org/10.1177/1352458516667567

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* Springer.

Leijten, F. R. M., van den Heuvel, S. G., Ybema, J. F., Robroek, S. J. W., & Burdorf, A. (2013). Do work factors modify the association between chronic health problems and sickness absence among older employees? *Scandinavian Journal of Work, Environment and Health*, *39*(5), 477 - 485. https://doi.org/10.5271/sjweh.3353

Leijten, F. R., van den Heuvel, S. G., Ybema, J. F., van der Beek, A. J., Robroek, S. J., & Burdorf, A. (2014). The influence of chronic health problems on work ability and productivity at work: A longitudinal study among older employees. *Scandinavian Journal of Work, Environment and Health*, *40*(5), 473 - 482. https://doi.org/10.5271/sjweh.3444

Leka, S., & Houdmont, J. (2010). *Occupational health psychology*. Wiley-Blackwell.

Lenferink, A., van der Palen, J., & Effing, T. (2018). The role of social support in improving chronic obstructive pulmonary disease self-management. *Expert Review of Respiratory Medicine*, *12*(8), 623 - 626. https://doi.org/10.1080/17476348.2018.1489723

Lerner, D., Adler, D. A., Rogers, W. H., Chang, H., Lapitsky, L., McLaughlin, T., & Reed, J.

(2010). Work performance of employees with depression: The impact of work stressors. *American Journal of Health Promotion*, *24*(3), 205 - 213. https://doi.org/10.4278/ajhp.090313-QUAN-103

Leslie, M., Kinyanjui, B., Bishop, M., Rumrill, P. D., & Roessler, R. T. (2015). Patterns in workplace accommodations for people with multiple sclerosis to overcome cognitive and other disease-related limitations. *NeuroRehabilitation*, *37*(3), 425 - 436. https://doi.org/10.3233/NRE-151271

Levy Merrick, E. S., Volpe-Vartanian, J., Horgan, C. M., & McCann, B. (2007). Revisiting employee assistance programs and substance use problems in the workplace: Key issues and a research agenda. *Psychiatric Services*, *58*(10), 1262 - 1264. https://doi.org/10.1176/ps.2007.58.10.1262

Liang, Y. Z., Chu, X., Meng, S. J., Zhang, J., Wu, L. J., & Yan, Y. X. (2018). Relationship between stress-related psychosocial work factors and suboptimal health among Chinese medical staff: A cross-sectional study. *BMJ Open, 8*(3). https://doi.org/10.1136/bmjopen-2017-018485

Lind, H., Waldenström, A. C., Dunberger, G., Al-Abany, M., Alevronta, E., Johansson, K. A., Olsson, C., Nyberg, T., Wilderäng, U., Steineck, G., & Vall-Lundqvist, E. (2011). Late symptoms in long-term gynaecological cancer survivors after radiation therapy: A population-based cohort study. *British Journal of Cancer*, *105*(6), 737 - 745. https://doi.org/10.1038/bjc.2011.315

Linden, A. (2015). Estimating Measurement Error of the Patient Activation Measure for Respondents with Partially Missing Data. *BioMed Research International, 270168*. https://doi.org/10.1155/2015/270168

Lindner, H., Menzies, D., Kelly, J., Taylor, S., & Shearer, M. (2003). Coaching for behaviour change in chronic disease: A review of the literature and the implications for coaching as a self-management intervention. *Australian Journal of Primary Health*, *9*(2-3), 177 - 185. https://doi.org/10.1071/py03044

Lindström, I., Pallasaho, P., Luukkonen, R., Suojalehto, H., Karjalainen, J., Lauerma, A., & Karjalainen, A. (2011). Reduced work ability in middle-aged men with asthma from youth - a 20-year follow-up. *Respiratory Medicine*, *105*(6), 950 - 955. https://doi.org/10.1016/j.rmed.2011.01.011

Linnan, L. A., Glorian Sorensen, C., Graham Colditz, M., Neil Klar, D., & Emmons, K. M. (2001). Using theory to understand the multiple determinants of low participation in worksite health promotion programs. *Health Education & Behavior, 28*(5), 591 - 607. https://doi.org/10.1177%2F109019810102800506

Little, K., Henderson, C., Brohan, E., & Thornicroft, G. (2011). Employers' attitudes to people

with mental health problems in the workplace in Britain: Changes between 2006 and 2009. *Epidemiology and Psychiatric Sciences*, *20*(1), 73 - 81. https://doi.org/10.1017/S204579601100014X

Loerbroks, A., Nguyen, X. Q., Vu-Eickmann, P., Krichbaum, M., Kulzer, B., Icks, A., & Angerer, P. (2018). Psychosocial working conditions and diabetes self-management at work: A qualitative study. *Diabetes Research and Clinical Practice*, *140*, 129 - 138. https://doi.org/10.1016/j.diabres.2018.03.023

Lorig, K. R., Mazonson, P. D., & Holman, H. R. (1993). Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis & Rheumatism*, *36*(4), 439 - 446. https://doi.org/10.1002/art.1780360403

Lorig, K., Stewart, A., Ritter, P., González, V., Laurent, D., & Lynch, J. (1996). *Outcome Measures for Health Education and other Health Care Interventions.* Sage Publications.

Lorig, K. R., Ritter, P., Stewart, A. L., Sobel, D. S., Brown, B. W., Bandura, A., Gonzalez, V. M., Laurent, D. D., & Holman, H. R. (2001). Chronic disease self-management program: 2-Year health status and health care utilization outcomes. *Medical Care*, *39*(11), 1217 - 1223. https://doi.org/10.1097/00005650-200111000-00008

Lorig, K. R., & Holman, H. R. (2003). Self-management education: History, definition, outcomes, and mechanisms. In *Annals of Behavioral Medicine, 26*(1), 1 - 7. https://doi.org/10.1207/S15324796ABM2601_01

Lunt, J., Fox, D., Bowen, J., Higgins, G., Crozier, S., & Carter, L. (2007). *Applying the biopsychosocial approach to managing risks of contemporary occupational health conditions: scoping review*. HSE/2007/24. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.117.4801&rep=rep1&type=pdf

Maas, C. J. M., & Hox, J. J. (2005). Sufficient Sample Sizes for Multilevel Modeling. *Methodology*, *1*(3), 85 - 92. https://doi.org/10.1027/1614-2241.1.3.86

Macleod, D., & Clarke, N. (2009). *Engaging for Success: enhancing performance through employee engagement. A report to the UK Government.* http://www.allthingsic.com/wp-content/uploads/2011/10/TheMacleodReport.pdf

Macmillan Cancer Support. (2013, July). Long-term consequences of cancer and its treatment Contents. *Cured-but at What Cost?* https://www.macmillan.org.uk/documents/aboutus/newsroom/consequences_of_treatment_june2013.pdf

Maes, L., Van Cauwenberghe, E., Van Lippevelde, W., Spittaels, H., De Pauw, E., Oppert, J. M., Van Lenthe, F. J., Brug, J., & De Bourdeaudhuij, I. (2012). Effectiveness of workplace interventions in Europe promoting healthy eating: A systematic review. *European Journal of Public Health*, *22*(5), 677 - 683. https://doi.org/10.1093/

eurpub/ckr098

Magnezi, R., Glasser, S., Shalev, H., Sheiber, A., & Reuveni, H. (2014). Patient activation, depression and quality of life. *Patient Education and Counseling*, *94*(3), 432 - 437. https://doi.org/10.1016/j.pec.2013.10.015

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical step-by-step guide for learning and teaching scholars. *All Ireland Journal of Higher Education, 9(3). https://pdfs.semanticscholar.org/3170/1b4100ebabae16deba055c28a6bad28e6467.pdf*

Main, C. J., Shaw, W. S., Amick, B. C., Anema, J. R., Besen, E., Blanck, P., Boot, C. R. L., Bültmann, U., Chan, C. C. H., Delclos, G. L., Ekberg, K., Ehrhart, M. G., Fassier, J. B., Feuerstein, M., Gimeno, D., Kristman, V. L., Linton, S. J., Munir, F., Nicholas, M. K. Young, A. E. (2016). Employer Policies and Practices to Manage and Prevent Disability: Conclusion to the Special Issue. *Journal of Occupational Rehabilitation*, *26*(4), 490 - 498. https://doi.org/10.1007/s10926-016-9655-0

Malik, S. H., Blake, H., & Suggs, L. S. (2014). A systematic review of workplace health promotion interventions for increasing physical activity. *British Journal of Health Psychology*, *19*(1), 149 - 180. https://doi.org/10.1111/bjhp.12052

Mannerkorpi, K., & Gard, G. (2012). Hinders for continued work among persons with fibromyalgia. *BMC Musculoskeletal Disorders*, *13*(1), *96*. https://doi.org/10.1186/1471-2474-13-96

Marcatto, F., Colautti, L., Larese Filon, F., Luis, O., & Ferrante, D. (2014). The HSE Management Standards Indicator Tool: Concurrent and construct validity. *Occupational Medicine*, *64*(5), 365 - 371. https://doi.org/10.1093/occmed/kqu038

McBain, H., Shipley, M., & Newman, S. (2018). Clinician and Patient Views About Self-Management Support in Arthritis: A Cross-Sectional UK Survey. *Arthritis Care and Research, 70*(11), 1607 - 1613. https://doi.org/10.1002/acr.23540

McCabe, P. J., Stuart-Mullen, L. G., Mcleod, C. J., Byrne, T. O., Schmidt, M. M., Branda, M. E., griffin, J. M., & Kern, P. (2018). Patient activation for self-management is associated with health status in patients with atrial fibrillation. *Patient Preference and Adherence*, *12*, 1907 - 1916. https://doi.org/10.2147/PPA.S172970

McCluskey, S., Burton, A. K., & Main, C. J. (2006). The implementation of occupational health guidelines principles for reducing sickness absence due to musculoskeletal disorders. *Occupational Medicine*, *56*(4), 237 - 242. https://doi.org/10.1093/occmed/kql003

McDermott, L., Leydon, G. M., Halls, A., Kelly, J., Nagle, A., White, J., & Little, P. (2017). Qualitative interview study of antibiotics and self-management strategies for respiratory infections in primary care. *BMJ Open, 7*(11), e016903. https://bmjopen.bmj.com/

content/7/11/e016903.abstract

McDonald, K., Slavin, S., Pitts, M. K., & Elliott, J. H. (2016). Chronic Disease Self-Management by People with HIV. *Qualitative Health Research, 26*(6), 863 - 870. https://doi.org/10.1177/1049732315600415

McDowell, C., & Fossey, E. (2015). Workplace Accommodations for People with Mental Illness: A Scoping Review. *Journal of Occupational Rehabilitation, 25*(1), 197 - 206. https://doi.org/10.1007/s10926-014-9512-y

McLeod, J. (2010). The effectiveness of workplace counselling: A systematic review. *Counselling and Psychotherapy Research*, *10*(4), 238 - 248. https://doi.org/10.1080/14733145.2010.485688

McManus, S., Bebbington, P., Jenkins, R., & Brugha, T. (2014). *Mental health and wellbeing in England: Adult Psychiatric Morbidity Survey 2014*. https://webarchive.nationalarchives.gov.uk/20180328130852tf_/http://content.digital.nhs.uk/catalogue/PUB21748/apms-2014-full-rpt.pdf/

Megari, K. (2013). Quality of life in chronic disease patients Quality of life. *Health Psychology Research, 1*(3), e27. https://doi.org/10.4081/hpr.2013.e27

Meissner, H., Creswell, J., Klassen, A.C., Plano Clark, V. L., & Smith, K., C. (2011). *Best* Practices for Mixed Methods Research in the Health Sciences. *National Institutes of Health*, *2013*, 541 - 545. https://doi.org/ 10.1007/s11136-012-0122-x

Mellor-Clark, J., Twigg, E., Farrell, E., & Kinder, A. (2013). Benchmarking key service quality indicators in UK Employee Assistance Programme Counselling: A CORE System data profile. *Counselling and Psychotherapy Research*, *13*(1), 14 - 23. https://doi.org/10.1080/14733145.2012.728235

Meng, L, Wolff, M. B., Mattick, K. A., DeJoy, D. M., Wilson, M. G., & Smith, M. L. (2017). Strategies for Worksite Health Interventions to Employees with Elevated Risk of Chronic Diseases. *Safety and Health at Work*, *8*(2), 117 - 129. https://doi.org/10.1016/j.shaw.2016.11.004

Mental Health Foundation. (2017). *New Poll Reveals Mental Health Stigma in the Workplace.* https://www.mentalhealth.org.uk/news/shocking-new-poll-reveals-mental-health-stigma-workplace

Miconi, A., De Nuzzo, D., Vatne, S., & Pierantognetti, P. (2015). Riding a roller coaster: Narrative typologies of patients with neuroendocrine tumors. *Journal of Multidisciplinary Healthcare, 8*, 535. https://doi.org/10.2147/JMDH.S90744

Miles, J., & Gilbert, P. (Eds.). (2005). *A handbook of research methods for clinical and health psychology.* Oxford University Press.

Milner, K., Greyling, M., Goetzel, R., De Silva, R., Kolbe-Alexander, T., Patel, D., Nossel, C.,

& Beckowski, M. (2013). The relationship between leadership support, workplace health promotion and employee wellbeing in South Africa. *Health Promotion International*, *30*(3), 514 - 522. https://doi.org/10.1093/heapro/dat064

Miranda, H., Kaila-Kangas, L., Heliövaara, M., Leino-Arjas, P., Haukka, E., Liira, J., & Viikari-Juntura, E. (2010). Musculoskeletal pain at multiple sites and its effects on work ability in a general working population. *Occupational and Environmental Medicine*, *67*(7), 449 - 455. https://doi.org/10.1136/oem.2009.048249

Moffitt, J, Bostock, J., & Cave, A. (2014). Promoting wellbeing and reducing stigma about mental health in the fire service. *Journal of Public Mental Health, 13*(2),103 – 113. https://doi.org/10.1108/JPMH-02-2013-0004

Morgan, A. J., Ross, A., & Reavley, N. J. (2018). Systematic review and meta-analysis of Mental Health First Aid Training: Effects in knowledge, stigma and helping behaviour. *PLoS One*, *13*(5), e0197102. https://doi.org/10.1371/journal.pone.0197102

Motl, R. W., & Snook, E. M. (2008). Physical activity, self-efficacy, and quality of life in multiple sclerosis. *Annals of Behavioral Medicine*, *35*(1), 111 - 115. https://doi.org/ 10.1007/s12160-007-9006-7

Mottram, A. (2009). Theraeutic relationships in day surgery: a grounded theory study. *Journal of Clinical Nursing, 18*(20), 2830 - 2837. https://doi.org/10.1111/j.1365-2702.2009.02853.x

Mrs Linsey v Her Majesty's Revenue and Custom (2018). UKEAT 0150/18/JOJ https://www.gov.uk/employment-appeal-tribunal-decisions/mrs-m-linsley-v-commissioners-for-her-majesty-s-revenue-and-custom-ukeat-0150-18-joj

Mrs Shah v TIAA Limited (2018). UKET 2207165/2017. https://www.gov.uk/employment-tribunal-decisions/mrs-i-shah-v-tiaa-ltd-2207165-2017

Multiple Sclerosis Society UK. (2020). *MS in the UK.* https://www.mssociety.org.uk/what-we-do/our-work/our-evidence/ms-in-the-uk

Munir, F., Jones, D., Leka, S., & Griffiths, A. (2005a). Work limitations and employer adjustments for employees with chronic illness. *International Journal of Rehabilitation Research, 28*(2), 111 - 117. https://doi.org/10.1097/00004356-200506000-00003

Munir, F., Leka, S., & Griffiths, A. (2005b). Dealing with self-management of chronic illness at work: Predictors for self-disclosure. *Social Science and Medicine, 60*(6), 1397 - 1407. https://doi.org/10.1016/j.socscimed.2004.07.012

Munir, F, Yarker, J., Haslam, C., Long, H., Leka, S., Griffiths, A., & Cox, S. (2007). Work factors related to psychological and health-related distress among employees with chronic illnesses. *Occupational Rehabilitation*, *17*(2), 259 - 277. https://doi.org/ 10.1007/s10926-007-9074-3

Munir, F, Randall, R., Yarker, J., & Nielsen, K. (2009a). The influence of employer support on employee management of chronic health conditions at work. *Journal of Occupational Rehabilitation*, *19*(4), 333 - 344. https://doi.org/10.1007/s10926-009-9199-7

Munir, F, Khan, H. T. A., Yarker, J., Haslam, C., Long, H., Bains, M., & Kalawsky, K. (2009b). Self-management of health-behaviors among older and younger workers with chronic illness. *Patient Education and Counseling*, *77*(1), 109 - 115. https://doi.org/ 10.1016/j.pec.2009.02.014

Munir, F., Kalawsky, K., Wallis, D. J., & Donaldson-Feilder, E. (2013). Using intervention mapping to develop a work-related guidance tool for those affected by cancer. *BMC Public Health*, *13*(1), 6. https://doi.org/10.1186/1471-2458-13-6

Munir, F., Houdmont, J., Clemes, S., Wilson, K., Kerr, R., & Addley, K. (2015). Work engagement and its association with occupational sitting time: Results from the Stormont study Environmental and occupational health. *BMC Public Health*, *15*(1), 1 - 12. https://doi.org/10.1186/s12889-015-1427-9

Murphy, E., Dingwall, R., Greatbatch, D., Parker, S., & Watson, P. (1998). Qualitative research methods in health technology assessment: A review of the literature. *Health Technology Assessment*, *2*(16). https://doi.org/10.3310/hta2160

Murphy, R., Tubridy, N., Kevelighan, H., & O'Riordan, S. (2013). Parkinson's disease: How is employment affected? *Irish Journal of Medical Science*, *182*(3), 415 - 419. https://doi.org/10.1007/s11845-013-0902-5

Nathwani, T., Birkin, G., Cheng, Z., Brazier, J., Roberts, J., Rice, N., Bowes, L., Higton, J., Research, C., & Yard, P. (2015). *Employment outcomes for people with long-term conditions: A rapid evidence assessment.* http://cfe.org.uk/app/uploads/2016/09/Emp-outcomes-for-people-with-LT-conditions_REA.pdf

National Institute for Health and Care Excellence. (2018). *Resource impact report obstructive pulmonary disease in. over 16s*: di https://www.nice.org.uk/guidance/ng115/resources/resource-impact-report-pdf-6602803741

National Institute for Health and Care Excellence. (2019). *NICEimpact Mental Health*. https://www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/measuring-uptake/NICEimpact-mental-health.pdf

Naylor, C., Parsonage, M., Mcdaid, D., Knapp, M., Fossey, M., & Galea, A. (2012). *Long-term conditions and mental health.* The King's Fund. https://www.kingsfund.org.uk/ sites/default/files/field/field_publication_file/long-term-conditions-mental-health-cost-comorbidities-naylor-feb12.pdf

Nelson, C. C., Shaw, W., & Robertson, M. (2016). Supervisors and Presenteeism: How do

Supervisors Accommodate and Support Skilled Workers with Chronic Health Concerns? *Employee Responsibilities and Rights Journal*, *28*(4), 209 - 223. https://doi.org/10.1007/s10672-015-9275-4

Neurological Alliance. (2019). *Neurological Numbers 2019*. https://www.neural.org.uk/wp-content/uploads/2019/07/neuro-numbers-2019.pdf

Newcomb, M. E., & Mustanski, B. (2014). Diaries for observation or intervention of health behaviors: Factors that predict reactivity in a sexual diary study of men who have sex with men. *Annals of Behavioral Medicine*, *47*(3), 325 - 334. https://doi.org/10.1007/s12160-013-9549-8

Newman, S., Steed, L., & Mulligan, K. (2004). Self-management interventions for chronic illness. *Lancet, 364*(0444), 1523 - 1537. https://doi.org/10.1016/S0140-6736(04)17277-2

Nexø, M. A., Carlsen, K., Pedersen, J., Hetland, M. L., Watt, T., Hansen, S. M., & Bjorner, J. B. (2018). Long-term sickness absence of 32 chronic conditions: A Danish register-based longitudinal study with up to 17 years of follow-up. *BMJ Open, 8*(6), e020874. https://doi.org/10.1136/bmjopen-2017-020874

Nexø, M. A., Pedersen, J., Cleal, B., & Bjorner, J. B. (2019). Increased risk of long-term sickness absence, lower rate of return to work and higher risk of disability pension among people with type 1 and type 2 diabetes mellitus: a Danish retrospective cohort study with up to 17 years' follow-up. *Diabetic Medicine, 37*(11), 1861 - 1865. https://doi.org/10.1111/ dme.14203

NHS Business Definitions. (2020). *Long-term physical health conditions*. https://www.datadictionary.nhs.uk/data_dictionary/nhs_business_definitions/l/long_term_physical_health_condition_de.asp?shownav=1

NHS Business Services Authority. (2017). *Antidepressant prescribing.* https://www.nhsbsa.nhs.uk/prescription-data/prescribing-data/antidepressant-prescribing

NHS Digital. (2020). *Employment of people with long-term health conditions.* https://digital.nhs.uk/data-and-information/publications/statistical/nhs-outcomes-framework/may-2020

NHS England. (2018). *Enhancing the quality of life for people with long-term health conditions.* https://psnc.org.uk/wp-content/uploads/2018/02/Infographic-FINAL.pdf

NHS England. (2019). *The NHS Long Term Plan*. https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf

Nicholas, M. K., Linton, S. J., Watson, P. J., & Main, C. J. (2011). Early Identification and Management of Psychological Risk Factors ("Yellow Flags") in Patients With Low Back Pain: A Reappraisal. *Physical Therapy*, *91*(5), 737 - 753. https://doi.org/10.2522/

ptj.20100224

Nielsen, K., Nielsen, M. B., Ogbonnaya, C., Känsälä, M., Saari, E., & Isaksson, K. (2017). Workplace resources to improve both employee well-being and performance: A systematic review and meta-analysis. *Work and Stress, 31*(2), 101 - 120. https://doi.org/10.1080/02678373.2017.1304463

Nielsen, M. B. D., Madsen, I. E. H., Bültmann, U., Christensen, U., Diderichsen, F., & Rugulies, R. (2011). Predictors of return to work in employees sick-listed with mental health problems: Findings from a longitudinal study. *European Journal of Public Health*, *21*(6), 806 - 811. https://doi.org/10.1093/eurpub/ckq171

Nieuwenhuijsen, K., Bruinvels, D., & Frings-Dresen, M. (2010). Psychosocial work environment and stress-related disorders, a systematic review. *Occupational Medicine, 60*(4), 277 - 286. https://doi.org/10.1093/occmed/kqq081

Nilsen, G., & Elstad, I. (2009). Temporal experiences of persistent pain. Patients' narratives from meetings with health care providers. *International Journal of Qualitative Studies on Health and Well-Being*, *4*(1), 51 - 61. https://doi.org/10.1080/17482620802416129

Nilsson, M. I., Petersson, L. M., Wennman-Larsen, A., Olsson, M., Vaez, M., & Alexanderson, K. (2013). Adjustment and social support at work early after breast cancer surgery and its associations with sickness absence. *Psycho-Oncology*, *22*(12), 2755 - 2762. https://doi.org/10.1002/pon.3341

Noblet, A., & LaMontagne, A. D. (2006). The role of workplace health promotion in addressing job stress. *Health Promotion International*, *21*(4), 346 - 353. https://doi.org/10.1093/heapro/dal029

Nöhammer, E., Stummer, H., & Schusterschitz, C. (2011). Improving employee well-being through worksite health promotion? The employees' perspective. *Journal of Public Health*, *19*(2), 121 - 129. https://doi.org/10.1007/s10389-010-0364-4

Norstedt, M. (2019). Work and Invisible Disabilities: Practices, Experiences and Understandings of Non Disclosure. *Scandinavian Journal of Disability Research, 1*(21). https://doi.org/10.16993/sjdr.550

Nowell, L. S., Norris, J. M., White, D. E., & Moules, M. . (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods, 16*(1), 16094069406917733847. https://doi.org/10.1177%2F1609406917733847

Nunes, A. P., Richmond, M. K., Pampel, F. C., & Wood, R. C. (2018). The Effect of Employee Assistance Services on Reductions in Employee Absenteeism. *Journal of Business and Psychology*, *33*(6), 699 - 709. https://doi.org/10.1007/s10869-017-9518-5

O'Connell, S., Mc Carthy, V. J. C., & Savage, E. (2018). Frameworks for self-management support for chronic disease: A cross-country comparative document analysis. *BMC*

Health Services Research, *18*(1), 1 - 10. https://doi.org/10.1186/s12913-018-3387-0

OECD. (2012). *Sick on the Job?: Myths and Realities about Mental Health and Work.* https://doi.org/10.1787/9789264124523-en

Office for National Statistics. (2018, September). *Personal wellbeing user guidance.* https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/methodologies/personalwellbeingsurveyuserguide

Office for National Statistics. (2019). *Sickness absence in the UK labour market: 2018*. https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/sicknessabsenceinthelabourmarket/2018

Office for National Statistics. (2020, March). *People with long-term health conditions, UK: January to December 2019*. https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/adhocs/11478peoplewithlongtermhealthconditionsukjanuarytodecember2019

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary Studies in Organizational Research: An Introduction and Some Practical Recommendations. *Journal of Personnel Psychology, 9*(2), 79 - 93. https://doi.org/10.1027/1866-5888/a000009

Osilla, K. C., Van Busum, K., Schnyer, C., Larkin, J. W., Eibner, C., & Mattke, S. (2012). Systematic review of the impact of worksite wellness programs. *American Journal of Managed Care*, *18*(2), 68 - 81. https://www.researchgate.net/profile/Karen_Osilla/publication/221902512_Systematic_review_of_the_impact_of_worksite_wellness_programs/links/555df05008ae6f4dcc8dccb7/Systematic-review-of-the-impact-of-worksite-wellness-programs.pdf

Ouweneel, E., Schaufeli, W. B., & Le Blanc, P. M. (2013). Believe, and you will achieve: Changes over time in self-efficacy, engagement, and performance. *Applied Psychology: Health and Well-Being*, *5*(2), 225 - 247. https://doi.org/10.1111/aphw.12008

Oxford Dictionary Online. (2020). *Impairment*. https://www.oxfordlearnersdictionaries.com/definition/english/impairment?q=impairment

Oxford Economics. (2016). *Added value: Mental health as a workplace asset.* https://www.oxfordeconomics.com/recent-releases/added-value-mental-health-as-a-workplace-asset

Oxford Learner's Dictionaries. (2020a). *Disability*. https://www.oxfordlearnersdictionaries.com/ definition/english/disability?q=disability

Oxford Learner's Dictionaries. (2020b). *Disease*. https://www.oxfordlearnersdictionaries.com/definition/english/disease?q=disease

Oxford Learner's Dictionaries. (2020c). *Disorder*. https://www.oxfordlearnersdictionaries.com/definition/english/disorder?q=disorder

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research HHS Public Access. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*(5), 533 - 544. https://doi.org/10.1007/s10488-013-0528-y

Panagioti, M., Richardson, G., Small, N., Murray, E., Rogers, A., Kennedy, A., Newman, S., & Bower, P. (2014). Self-management support interventions to reduce health care utilisation without compromising outcomes: A systematic review and meta-analysis. *BMC Health Services Research*, *14*(1), 356. BioMed Central Ltd. https://doi.org/10.1186/1472-6963-14-356

Papathomas, A., & Lavallee, D. (2014). Self-starvation and the performance narrative in competitive sport. *Psychology of Sport and Exercise, 15*(6), 688 - 695. https://doi.org/10.1016/j.psychsport.2013.10.014

Parkinson's UK. (2018). *The incidence and prevel a n c e o f P a r k i n s o n ô s i n t h* https://www.parkinsons.org.uk/professionals/resources/incidence-and-prevalence-parkinsons-uk-report

Pass, S., Kougiannou, K., Ridgway, M., Watling, D., & Abe, C. (2018, December). *All for one and one for all: line managers mi g h t b e t h e c a t a l y s t b u t ñ e v e r y employee engagement* [conference paper]. Chartered Institute of Personnel and Development Applied Research Conference, Nottingham Trent University.

Patel, J. G., Nagar, S. P., & Dalal, A. A. (2014). Indirect costs in chronic obstructive pulmonary disease: A review of the economic burden on employers and individuals in the United States. *International Journal of COPD*, *9*, 289 - 300. https://doi.org/10.2147/COPD.S57157

Paterson, C., Jones, M., Rattray, J., & Lauder, W. (2015). Identifying the self-management behaviours performed by prostate cancer survivors: a systematic review of the evidence. *Journal of Research in Nursing*, *20*(2), 96 - 111. https://doi.org/10.1177/1744987114523976

Patton, M. Q. (2003). Two Decades of Developments in Qualitative Inquiry. *Qualitative Social Work: Research and Practice, 1*(3), 261 - 283. https://doi.org/10.1177/1473325002001003636

Paulides, E., Gearry, R. B., de Boer, N. K. H., Mulder, C. J. J., Bernstein, C. N., & McCombie, A. M. (2019). Accommodations and Adaptations to Overcome Workplace Disability in Inflammatory Bowel Disease Patients: A Systematic Review. *Inflammatory Intestinal Diseases*, *3*(3), 138 - 144. https://doi.org/10.1159/000495293

Pedron, S., Emmert-Fees, K., Laxy, M., & Schwettmann, L. (2019). The impact of diabetes

on labour market participation: A systematic review of results and methods. *BMC Public Health*, *19*(1), 25. https://doi.org/10.1186/s12889-018-6324-6

Pesantes, M. A., Somerville, C., Singh, S. B., Perez-Leon, S., Madede, T., Suggs, S., & Beran, D. (2020). Disruption, changes, and adaptation: Experiences with chronic conditions in Mozambique, Nepal and Peru. *Global Public Health*, *15*(3), 372 - 383. https://doi.org/10.1080/17441692.2019.1668453

Pescud, M., Teal, R., Shilton, T., Slevin, T., Ledger, M., Waterworth, P., & Rosenberg, M. (2015). Employers' views on the promotion of workplace health and wellbeing: A qualitative study. *BMC Public Health*, *15*(1), 642. https://doi.org/10.1186/s12889-015-2029-2

Peters, M., Potter, C. M., Kelly, L., & Fitzpatrick, R. (2019). Self-efficacy and health-related quality of life: A cross-sectional study of primary care patients with multi-morbidity. *Health and Quality of Life Outcomes*, *17*(1), 37. https://doi.org/10.1186/s12955-019-1103-3

Pieper, C., Schröer, S., & Eilerts, A. L. (2019). Evidence of workplace interventions-A systematic review of systematic reviews. *International Journal of Environmental Research and Public Health*, *16*(19), 3553. https://doi.org/10.3390/ijerph16193553

Plow, M., Mangal, S., Geither, K., & Golding, M. (2016). A Scoping Review of Tailored Self-management Interventions among Adults with Mobility Impairing Neurological and Musculoskeletal Conditions. *Frontiers in Public Health*, *4, 165*. https://doi.org/ 10.3389/fpubh.2016.00165

Pow, J., King, D. B., Stephenson, E., & DeLongis, A. (2017). Does social support buffer the effects of occupational stress on sleep quality among paramedics? A daily diary study. *Journal of Occupational Health Psychology, 22*(1), 71. https://doi.org/10.1037/ a0040107

Powell, A. (2019). *People with disabilities in employment*. House of Commons briefing paper, (7540). https://commonslibrary.parliament.uk/research-briefings/cbp-7540/

Pransky, G., Besen, E., McLellan, R. K., Shaw, W. S., Boot, C. R., Tveito, T. H., & Nicholas, M. K. (2014). Manage at work: a randomized, controlled trial of a self-management group intervention to overcome workplace challenges associated with chronic physical health conditions. *BMC Public Health, 14*(1), 515. https://doi.org/10.1186/1471-2458-14-515

Pransky, G., Fassier, J., Besen, E., Blanck, P., Ekberg, K., Feuerstein, M., Munir, F., Amick, B., Anema, J., Boot, C., L., Bültmann, U., Chan, C., Delclos, G., Ehrhart, M., Gimeno, D., Kristman, V., Linton, S., Main, C., Nicholas, M., … Young, A. (2016). Sustaining Work Participation Across the Life Course. *Journal of Occupational Rehabilitation*,

26(4), 465 - 479. https://doi.org/10.1007/s10926-016-9670-1

Prey, J. E., Qian, M., Restaino, S., Hibbard, J., Bakken, S., Schnall, R., Rothenberg, G., Vawdrey, D. K., & Masterson Creber, R. (2016). Reliability and validity of the patient activation measure in hospitalized patients. *Patient Education and Counseling*, *99*(12), 2026 - 2033. https://doi.org/10.1016/j.pec.2016.06.029

Proper, K. I., & Van Oostrom, S. H. (2019). The effectiveness of workplace health promotion interventions on physical and mental health outcomes - A systematic review of reviews. *Scandinavian Journal of Work, Environment and Health*, *45*(6), 546 - 559. https://doi.org/10.5271/sjweh.3833

Pruitt, S., Annandale, S., Epping-Jordan, J., Diaz, J. M. F., Khan, M., Kisa, A., Klapow, J., Solinis, R. N., Reddy, S., & Wagner, E. (2002). *Innovative Care for Chronic Conditions*, 11 - 26. https://www.who.int/chp/knowledge/publications/iccc_ch1.pdf

Public Health England. (2016). *Understanding the relationship between health, work and worklessness*. https://publichealthmatters.blog.gov.uk/2016/09/14/understanding-the-relationship-between-health-work-and-worklessness

Public Health England. (2018). *Health of the Working Age Population*. https://www.gov.uk/government/publications/health-and-work-infographics

Public Health England. (2019a). *Health Matters: Health and Work.* https://www.gov.uk/government/publications/health-matters-health-and-work/health-matters-health-and-work

Public Health England. (2019b). *Why are musculoskeletal conditions the biggest contributor to morbidity?* https://publichealthmatters.blog.gov.uk/2019/03/11/why-are-musculoskeletal-conditions-the-biggest-contributor-to-morbidity/

QSR International. (2017). NVivo for Macintosh (Version 12) [Computer software]. https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software

Rai, K. K., Adab, P., Ayres, J. G., & Jordan, R. E. (2018). Systematic review: Chronic obstructive pulmonary disease and work-related outcomes. *Occupational Medicine, 68*(2), 99 - 108. https://doi.org/10.1093/occmed/kqy012

Raven, M. (2015). *Patient - centred care and self - management support in primary health care*. Flinders University. https://dspace2.flinders.edu.au/xmlui/handle/2328/36262

Razmjou, H., Savona, A., & ElMaraghy, A. (2018). Prevalence and significance of psychosocial flag signs in patients with compensable occupational upper extremity injuries. *Physical Medicine and Rehabilitation Research*, *3*(3), 1 - 6. https://doi.org/10.15761/pmrr.1000173

Read, J. R., Sharpe, L., Modini, M., & Dear, B. F. (2017). Multimorbidity and depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, *221*(May), 36 - 46.

https://doi.org/10.1016/j.jad.2017.06.009

Redman, B. K. (2005). The ethics of self-management preparation for chronic illness. In *Nursing Ethics, 12*(4), 360 - 369. https://doi.org/10.1191/0969733005ne801oa

Reidy, C., Kennedy, A., Pope, C., Ballinger, C., Vassilev, I., & Rogers, A. (2016). Commissioning of self-management support for people with long-term conditions: an exploration of commissioning aspirations and processes. *BMJ open, 6*(7). https://doi.org/10.1136/bmjopen-2015-010853

Rick, J. (2012). *Systematic Review of the Effectiveness and Cost Effectiveness of Employee Assistance Programmes*. Institute of Work Psychology, University of Sheffield. https://bohrf.org.uk/downloads/BOHRF-Review_of_EAPs-Final_Report-April_2012.pdf

Riessman, C. K. (1993). *Narrative Analysis*. Sage.

Ritter, P. L. P. L., & Lorig, K. (2014). The english and spanish self-efficacy to manage chronic disease scale measures were validated using multiple studies. *Journal of Clinical Epidemiology*, *67*(11), 1265 - 1273. https://doi.org/10.1016/ j.jclinepi.2014.06.009

Rodham, K. (2018). Overrated: Self-management. *The Psychologist*, *31*(7), 34 - 37. https://thepsychologist.bps.org.uk/volume-31/july-2018/overrated-self-management

Rogers, A., Brooks, H., Vassilev, I., Kennedy, A., Blickem, C., & Reeves, D. (2014). Why less may be more: a mixed methods study of the work and relatedness of ‘weak ties’ in supporting long-term condition self-management. *Implementation Science*, *9*(1), 1 - 11. https://doi.org/10.1186/1748-5908-9-19

Rongen, A., Robroek, S. J. W., Van Lenthe, F. J., & Burdorf, A. (2013). Workplace health promotion: A meta-analysis of effectiveness. *American Journal of Preventive Medicine 44*(4), 406 - 415. https://doi.org/10.1016/j.amepre.2012.12.007

Roquelaure, Y. (2019). Musculoskeletal Disorders and Psychosocial Factors at Work. ETUI Research Report, *142*. https://doi.org/10.2139/ssrn.3316143

Rosenman, R., Tennekoon, V., & Hill, L. G. (2011). Measuring bias in self-reported data. *International Journal of Behavioural and Healthcare Research*, *2*(4), 320. https://doi.org/ 10.1504/ijbhr.2011.043414

Röttger, S., Maier, J., Krex-Brinkmann, L., Kowalski, J., Danker-Hopfe, H., Sauter, C., & Stein, M. (2017). The benefits of sleep coaching in workplace health promotion. *Journal of Public Health, 25*(6), 685 - 691. https://doi.org/10.1007/s10389-017-0826-z

Ruston, A., Smith, A., & Fernando, B. (2013). Diabetes in the workplace - Diabetic’s perceptions and experiences of managing their disease at work: A qualitative study. *BMC Public Health*, *13*(1), 386. https://doi.org/10.1186/1471-2458-13-386

Sadler, E., Wolfe, C. D. A., & McKevitt, C. (2014). Lay and health care professional

understandings of self-management: A systematic review and narrative synthesis. *Open Medicine*, *2*, 2050312114544493. https://doi.org/10.1177/2050312114544493

Salciccioli, J. D., Marshall, D. C., Shalhoub, J., Maruthappu, M., De Carlo, G., & Chung, K. F. (2018). Respiratory disease mortality in the United Kingdom compared with EU15+ countries in 1985-2015: Observational study. *BMJ*, *363*, 1 - 8. https://doi.org/ 10.1136/bmj.k4680

Sale, J. E., Lohfeld, L. H., & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: Implications for mixed-methods research. Quality and quantity. *BMC Health Services Research*, *36*(1), 43 - 53. https://doi.org/10.1023/A:1014301607592

Sallis, A., & Birkin, R. (2014). Experiences of work and sickness absence in employees with depression: An interpretative phenomenological analysis. *Journal of Occupational Rehabilitation, 24*(3), 469 - 483. https://doi.org/10.1007/s10926-013-9481-6

Salvatore, A. L., Ahn, S. N., Jiang, L., Lorig, K., & Ory, M. G. (2015). National study of chronic disease self-management: 6-month and 12-month findings among cancer survivors and non-cancer survivors. *Psycho-Oncology*, *24*(12), 1714 - 1722. https://doi.org/10.1002/pon.3783

Salyers, M. P., Matthias, M. S., Sidenbender, S., & Green, A. (2013). Patient activation in schizophrenia: Insights from stories of illness and recovery. *Mental Health and Mental Health Services Research*, *40*(5), 419 - 427. https://doi.org/ 10.1007/s10488-012-0435-7

Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The Social Support Questionnaire. *Journal of Personality and Social Psychology, 44(1), 127*. https://doi.org/10.1037/0022-3514.44.1.127

Saunders, C., Brown, J.., Carter, D. J., & Lapkin, S. (2018). Chronic disease management support in Australian workplaces—low base, rising need. *Health Promotion Journal of Australia*, *29*(3), 257 - 264. https://doi.org/10.1002/hpja.11

Sayze, L. (2011). *Getting in, staying in, getting on. Disability employment support fit for the future*. Department for Work and Pensions. https://assets.publishing.service.gov.uk/ government/uploads/system/uploads/attachment_data/file/49779/sayce-report.pdf

Schaffler, J., Leung, K., Tremblay, S., Merdsoy, L., Belzile, E., Lambrou, A., & Lambert, S. D. (2018). The Effectiveness of Self-Management Interventions for Individuals with Low Health Literacy and/or Low Income: A Descriptive Systematic Review. *Journal of General Internal Medicine*, *33*(4), 510 - 523. https://doi.org/10.1007/s11606-017-4265-x

Schaufeli, W. B. (2017). Applying the job demands-resources model: A ‘how to’ guide to measuring and tackling work engagement and burnout. *Organizational Dynamics*, *46*(2), 120 - 132. https://doi.org/10.1016/j.orgdyn.2017.04.008

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*(3), 293 - 315. https://doi.org/10.1002/job.248

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701 - 716. https://doi.org/10.1177/ 0013164405282471

Schaufeli, W. B., Taris, T. W., & Van Rhenen, W. (2008). Workaholism, burnout, and work engagement: Three of a kind or three different kinds of employee well Zeing? *Applied Psychology*, *57*(2), 173 - 203. https://doi.org/10.1111/j.1464-0597.2007.00285.x

Schneiderman, N., Ironson, G., Siegel, S. D., De Gieter, S., Hofmans, J., Bakker, A. B., Mun, C. J., Thummala, K., Davis, M. C., Karoly, P., Tennen, H., Zautra, A. J., Anwar, M., Green, J. A., Norris, P., Bukhari, N. I., Wang, L., Mårtensson, J., Zhao, Y., Bakker, A. B. (2003). Emotional Reactivity to Daily Life Stress in Psychosis. *Archives of General Psychiatry*, *58*(2), 320 - 333. https://doi.org/10.1001/archpsyc.58.12.1137

Schopp, L. H., Bike, D. H., Clark, M. J., & Minor, M. A. (2014). Act Healthy: Promoting health behaviors and self-efficacy in the workplace. *Health Education Research*, *30*(4), 542 - 553. https://doi.org/10.1093/her/cyv024

Schopp, L. H., Clark, M. J., Lamberson, W. R., Uhr, D. J., & Minor, M. A. (2017). A randomized controlled trial to evaluate outcomes of a workplace self-management intervention and an intensive monitoring intervention. *Health Education Research, 32*(3), 219 - 232. https://doi.org/10.1093/her/cyx042

Schouten, L. S., Bültmann, U., Heymans, M. W., Joling, C. I., Twisk, J. W. R., & Roelen, C. A. M. (2016). Shortened version of the work ability index to identify workers at risk of long-term sickness absence. *European Journal of Public Health*, *26*(2), 301 - 305. https://doi.org/10.1093/eurpub/ckv198

Schulman-Green, D., Jaser, S. S., Park, C., & Whittemore, R. (2016). A metasynthesis of factors affecting self-management of chronic illness. *Journal of Advanced Nursing, 72*(7), 1469 - 1489. https://doi.org/10.1111/jan.12902

Schulman-Green, D., Jaser, S., & Whittemore, R. (2012). *Processes of Self-Management in Chronic Illness*. *Journal of Nursing Scholarship, 44*(2), 136 - 144. https://doi.org/ 10.1111/ j.1547-5069.2012.01444.x

Schultz, A. B., Chen, C.-Y., & Edington, D. W. (2007). The Cost and Impact of Health Conditions on Presenteeism to Employers. *PharmacoEconomics*, *27*(5), 365 - 378. https://doi.org/10.2165/00019053-200927050-00002

Schwarzer, R., & Leppin, A. (1988). Social support: the many faces of helpful social

interactions. *International Journal of Educational Research*, *12*(3), 333 - 345. https://doi.org/10.1016/0883-0355(88)90010-9

Sell, K. A., Amella, E. J., Mueller, M., Andrews, J., & Wachs, J. (2016). Chronic Disease Self-Management and Behavior Change Attitudes in Older Adults: A Mixed-Method Feasibility Study. *Sage Open*, *6*(3). https://doi.org/10.1177/2158244016665661

Serovich, J. M. (2001). A test of two HIV disclosure theories. *AIDS Education and Prevention*, *13*(4), 355 - 364. https://doi.org/10.1521/aeap.13.4.355.21424

Sharma, G. (2017). Pros and cons of different sampling techniques. *International Journal of Applied Research*, 3(7), 749 - 752. http://dcac.du.ac.in/documents/E-Resource/2020/Metrial/409ShraddhaNand1.pdf

Shaw, W. S., Tveito, T. H., Geehern-Lavoie, M., Huang, Y.-H. H., Nicholas, M. K., Reme, S. E., Wagner, G., & Pransky, G. (2012). Adapting principles of chronic pain self-management to the workplace. *Disability and Rehabilitation*, *34*(8), 694 - 703. https://doi.org/10.3109/09638288.2011.615372

Shaw, W. S., Tveito, T. H., & Boot, C. R. L. (2013). Introduction to the special section: Sustainability of work with chronic health conditions. *Journal of Occupational Rehabilitation*, *23*(2), 157 - 161. https://doi.org/10.1007/s10926-013-9448-7

Shaw, W. S., Besen, E., Pransky, G., Boot, C. R. L., Nicholas, M. K., McLellan, R. K., & Tveito, T. H. (2014). Manage at work: A randomized, controlled trial of a self-management group intervention to overcome workplace challenges associated with chronic physical health conditions. *BMC Public Health*, *14*(1), 1 - 11. https://doi.org/10.1186/1471-2458-14-515

Siegrist, J., & Li, J. (2018). Work stress and the development of chronic diseases. *International Journal of Environmental Research and Public Health*, *15*(3), 536. https://doi.org/10.3390/ijerph15030536

Sin, D. D., Stafinski, T., Ng, Y. C., Bell, N. R., & Jacobs, P. (2002). The impact of chronic obstructive pulmonary disease on work loss in the United States. *American Journal of Respiratory and Critical Care Medicine, 165*(5), 704 - 707. https://doi.org/10.1164/ajrccm.165.5.2104055

Siu, A. M. H., Hung, A., Lam, A. Y. L., & Cheng, A. (2013). Work limitations, workplace concerns, and job satisfaction of persons with chronic disease. *Work*, *45*(1), 107 - 115. https://doi.org/10.3233/WOR-121550

Skamagki, G., King, A., Duncan, M., & Wåhlin, C. (2018). A systematic review on workplace interventions to manage chronic musculoskeletal conditions. *Physiotherapy Research International*, *23*(4), 1 - 16. https://doi.org/10.1002/pri.1738

Skogstad, A., Hetland, J., Glasø, L., & Einarsen, S. (2014). Is avoidant leadership a root

cause of subordinate stress? Longitudinal relationships between laissez-faire leadership and role ambiguity. *Work and Stress*, *28*(4), 323 - 341. https://doi.org/10.1080/02678373.2014.957362

Skokou, M., Soubasi, E., & Gourzis, P. (2012). Depression in Multiple Sclerosis: A Review of Assessment and Treatment Approaches in Adult and Pediatric Populations. *Neurology*, *2012*, 1 - 6. https://doi.org/10.5402/2012/427102

Small, N., P, B., Chew-Graham, C. A., Whalley, D., & Protheroe, J. (2013). Patient empowerment in long-term conditions: development and preliminary testing of a new measure. *BMC Health Services Research, 13*(1), 263. http://www.biomedcentral.com/1472-6963/13/263

Smith, B. (2016). Narrative Analysis. In Lyons, A., & Coyle, A (Eds), *Analysing qualitative data in psychology,* 2nd edition (202 - 221).

Smith, B., & Sparkes, A. C. (2005). Men, sport, spinal cord injury and narratives of hope. *Social Science and Medicine, 61*(5), 1095 - 1105. https://doi.org/10.1016/j.socscimed.2005.01.011

Smith, B., & Sparkes, A. C. (2006). Narrative inquiry in psychology: Exploring the tensions within. *Qualitative Research in Psychology, 3*(3), 169 - 192. https://doi.org/10.1191/1478088706qrp068oa

Smith, B., & Sparkes, A. C. (2008). Contrasting perspectives on narrating selves and identities: An invitation to dialogue. *Qualitative Research, 8*(1), 5 - 35. https://doi.org/10.1177/1468794107085221

Smith, M, L., Wilson, M. G., DeJoy, D. M., Padilla, H., Zuercher, H., Corso, P., Vandenberg, R., Lorig, K., & Ory, M. G. (2015). Chronic Disease Self-Management Program in the Workplace: Opportunities for Health Improvement. *Frontiers in Public Health, 2,* 179. https://doi.org/10.3389/fpubh.2014.00179

Smith, M.L., Wilson, M. G., Robertson, M. M., Padilla, H. M., Zuercher, H., Vandenberg, R., Corso, P., Lorig, K., Laurent, D. D., & Dejoy, D. M. (2018). Impact of a translated disease self-management program on employee health and productivity: Six-month findings from a randomized controlled trial. *International Journal of Environmental Research and Public Health*, *15*(5), 851. https://www.mdpi.com/1660-4601/15/5/851#

Somers, T. J., Shelby, R. A., Keefe, F. J., Lumley, M. A., Mosley-williams, A., Rice, J. R., & Caldwell, D. (2010). Disease severity and domain specific arthritis and self-efficacy: relationships to pain and functioning in patients rheumatoid arthritis. *Arthritis Care & Research, 62*(6), 848 - 856. https://doi.org/10.1002/acr.20127

Sonnentag, S. (2011). Research on work engagement is well and alive. *European Journal of Work and Organizational Psychology*, *20*(1), 29 - 38. https://doi.org/10.1080/

1359432X.2010.510639

Sparkes, A. C. (2015). Developing mixed methods research in sport and exercise psychology: Critical reflections on five points of controversy. *Psychology of Sport and Exercise, 16,* 49 - 59. https://doi.org/10.1016/j.psychsport.2014.08.014

Sparkes, A. C., & Smith, B. (2005). When narratives matter: Men, sport, and spinal cord injury. *Medical Humanities, 31*(2), 81 - 88. https://doi.org/10.1136/jmh.2005.000203

Steadman, K., Sheldon, H., & Donnaloja, V. (2016). *Complexities and challenges working with multiple health conditions*. Work Foundation. https://www.lancaster.ac.uk/media/lancasteruniversity/contentassets/documents/lums/workfoundation/409_Complexitieschallenges1-1(1)accessible.pdf

Steadman, K., Shreeve, V., & Bevan, S. (2015). *Fluctuating conditions, fluctuating support: Improving organisational resilience to fluctuating conditions in the workforce*. Work Foundation. https://www.bl.uk/britishlibrary/~/media/bl/global/business-and-management/pdfs/non-secure/f/l/u/fluctuating-conditions-fluctuating-support-improving-organisational-resilience-to-fluctuating-conditions-in-the-workforce.pdf

Stepleman, L., Rutter, M. C., Hibbard, J., Johns, L., Wright, D., & Hughes, M. (2010). Validation of the patient activation measure in a multiple sclerosis clinic sample and implications for care. *Disability and Rehabilitation*, *32*(19), 1558 - 1567. https://doi.org/10.3109/09638280903567885

Stergiou-Kita, M., Pritlove, C., & Kirsh, B. (2016). The “Big C”- stigma, cancer, and workplace discrimination. *Journal of Cancer Survivorship*, *10*(6), 1035 - 1050. https://doi.org/ 10.1007/s11764-016-0547-2

Stevenson, D., & Farmer, P. (2017). Thriving at Work. The Stevenson/Farmer independent review of mental health and employers*. Department for Work and Pensions and Department for Health and Social Care.* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/658145/thriving-at-work-stevenson-farmer-review.pdf

Stochkendahl, M. J., Myburgh, C., Young, A. E., & Hartvigsen, J. (2015). Manager Experiences with the Return to Work Process in a Large, Publically Funded, Hospital Setting: Walking a Fine Line. *Journal of Occupational Rehabilitation, 25*(4), 752 - 762. https://doi.org/10.1007/s10926-015-9583-4

Stratton, E., Einboden, R., Ryan, R., Choi, I., Harvey, S. B., & Glozier, N. (2018). Deciding to Disclose a Mental Health Condition in Male Dominated Workplaces; A Focus-Group Study. *Frontiers in Psychiatry*, *9,* 684. https://doi.org/10.3389/fpsyt.2018.00684

Stride, C (Ed). (2018). *Multilevel modelling using SPSS (course handout)*. Figure it out training consultancy.

Stuckey, H. (2013). Three types of interviews: Qualitative research methods in social health. *Journal of Social Health and Diabetes, 1*(2), 56 - 56. https://doi.org/10.4103/2321-0656.115294

Sturges. (2004). Comparing telephone interviewing and face-to-face interviewing: a research note. *Qualitative Research, 4(*1), 107 - 118. https://doi.org/ 10.1177%2F14687941040 41110

Sugimura, H., & Thériault, G. (2010). Impact of supervisor support on work ability in an IT company. *Occupational Medicine*, *60*(6), 451 - 457. https://doi.org/10.1093/ occmed/kqq053

Summers, K., Bajorek, Z., & Bevan, S. (2014). *Self-management of chronic musculoskeletal disorders and employment.* Work Foundation. http://arma.uk.net/wp-content/uploads/ 2014/09/REPORT-self-management-of-chronic-musculoskeletal-disorders-09-2014.pdf

Symonds, J. E., & Gorard, S. (2008, September 3-6). *The Death of Mixed Methods: Research Labels and their Casualties* [paper presentation]. The British Educational Research Assocation, Edinburgh. https://www.leeds.ac.uk/educol/documents/ 174130.pdf

Tariq, S., & Woodman, J. (2013). Using mixed methods in health research. *JRSM Short Reports*, *4*(6), 2042533313479197. https://doi.org/10.1177/2042533313479197

Taskila, T., Lindbohm, M.-L. L., Martikainen, R., Lehto, U.-S. S., Hakanen, J., & Hietanen, P. (2006). Cancer survivors' received and needed social support from their work place and the occupational health services. *Supportive Care in Cancer*,*14*(5), 427 - 435. https://doi.org/10.1007/s00520-005-0005-6

Täuber, S., Mulder, L. B., & Flint, S. W. (2018). The impact of workplace health promotion programs emphasizing individual responsibility on weight stigma and discrimination. *Frontiers in Psychology*, *9*, 2206. https://doi.org/10.3389/fpsyg.2018.02206

Taylor, S. J., Pinnock, H., Epiphaniou, E., Pearce, G., Parke, H. L., Schwappach, A., Purushotham, N., Jacob, S., Griffiths, C. J., Greenhalgh, T., & Sheikh, A. (2014). A rapid synthesis of the evidence on interventions supporting self-management for people with long-term conditions: PRISMS – Practical systematic Revlew of Self-Management Support for long-term conditions. *Health Services and Delivery Research*, *2*(53), 1 - 580. https://doi.org/10.3310/hsdr02530

Tharek, Z., Ramli, A. S., Whitford, D. L., Ismail, Z., Mohd Zulkifli, M., Ahmad Sharoni, S. K., Shafie, A. A., & Jayaraman, T. (2018). Relationship between self-efficacy, self-care behaviour and glycaemic control among patients with type 2 diabetes mellitus in the Malaysian primary care setting. *BMC Family Practice*, *19*(1), 1 - 10. https://doi.org/ 10.1186/s12875-018-0725-6

Thomas-MacLean, R. (2004). Understanding breast cancer stories via Frank's narrative types. *Social Science and Medicine, 58*(9), 1647 - 1657. https://doi.org/10.1016/S0277-9536(03)00372-1

Thompson, L., Ford, H., Stroud, A., & Madill, A. (2019). Tortoise or hare? Supporting the chronotope preference of employees with fluctuating chronic illness symptoms. *Psychology and Health*, *34*(6), 695 - 714. https://doi.org/10.1080/08870446.2019.1565128

Thygesen, L. C., Hvidtfeldt, U. A., Mikkelsen, S., & Brønnum-Hansen, H. (2011). Quantification of the healthy worker effect: A nationwide cohort study among electricians in Denmark. *BMC Public Health*, *11*(1), 571. https://doi.org/10.1186/1471-2458-11-571

Tinkler, L. (2015). The Office for National Statistics experience of collecting and measuring subjective well-being. *Statistics in Transition*, *16*(3), 373 - 396. https://doi.org/10.21307/stattrans-2015-021

Tol, A., Alhani, F., Shojaeazadeh, D., Sharifirad, G., & Moazam, N. (2015). An empowering approach to promote the quality of life and self-management among type 2 diabetic patients. *Journal of Education and Health Promotion*, *4*. https://doi.org/10.4103/2277-9531.154022

Torp, S., Riise, T., & Moen, B. E. (2001). The Impact of Psychosocial Work Factors on psychosocial working factors on musculoskeletal pain: a prospective study. *Journal of Occupational and Environmental Medicine*, *43*(2), 120 - 126. https://doi.org/10.1097/00043764-200102000-00010

Torp, S., Nielsen, R. A., Gudbergsson, S. B., & Dahl, A. A. (2012). Worksite adjustments and work ability among employed cancer survivors. *Supportive Care in Cancer, 20*(9), 2149 - 2156. https://doi.org/10.1007/s00520-011-1325-3

Tunceli, K., Bradley, C. J., Nerenz, D., Williams, L. K., Pladevall, M., & Lafata, J. E. (2005). The impact of diabetes on employment and work productivity. *Diabetes Care, 28*(11), 2662 - 2667. https://doi.org/10.2337/diacare.28.11.2662

Tuomi, K., Ilmarinen, J., Jahkola, A., Katajarinne, L., & Tulkki, A. (1994). Work ability index. *Helsinki: Institute of Occupational Health.*

Tveito, T. H., Shaw, W. S., Huang, Y. H., Nicholas, M., & Wagner, G. (2010). Managing pain in the workplace: A focus group study of challenges, strategies and what matters most to workers with low back pain. *Disability and Rehabilitation*, *32*(24), 2035 - 2045. https://doi.org/10.3109/09638281003797398

UK Employee Assistance Professionals Association. (2016). *The evolution of employee assistance: investigating the use, impact and*

http://www.eapa.org.uk/eap-resources/

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing and Health Sciences, 15*(3), 398 - 405. https://doi.org/10.1111/nhs.12048

Van Amelsvoort, L. G. P. M., Kant, I. J., Beurskens, A. J. H. M., Schröer, C. A. P., & Swaen, G. M. H. (2002). Fatigue as a predictor of work disability. *Occupational and Environmental Medicine*, *59*(10), 712 - 713. https://doi.org/10.1136/oem.59.10.712

Van de Velde, D., De Zutter, F., Satink, T., Costa, U., Janquart, S., Senn, D., & De Vriendt, P. (2019). Delineating the concept of self-management in chronic conditions: A concept analysis. *BMJ Open*, *9*(7), e027775. https://doi.org/10.1136/bmjopen-2018-027775

Van den Berg, T. I., Robroek, S. J., Plat, J. F., Koopmanschap, M. A., & Burdorf, A. (2011). The importance of job control for workers with decreased work ability to remain productive at work. *International Archives of Occupational and Environmental Health*, *84*(6), 705 - 712. https://doi.org/10.1007/s00420-010-0588-1

van Dijk-de Vries, A., Moser, A., Mertens, V. C., Van Der Linden, J., Van Der Weijden, T., & Van Eijk, J. T. M. (2012). The ideal of biopsychosocial chronic care: How to make it real? A qualitative study among Dutch stakeholders. *BMC Family Practice*, *13*(1), 14. https://doi.org/10.1186/1471-2296-13-14

Van Hooft, S. M., Dwarswaard, J., Jedeloo, S., Bal, R., & van Staa, A. L. (2015). Four perspectives on self-management support by nurses for people with chronic conditions: A Q-methodological study. *International Journal of Nursing Studies*, *52*(1), 157 - 166. https://doi.org/10.1016/j.ijnurstu.2014.07.004

Van Houtum, L., Rijken, M., Heijmans, M., & Groenewegen, P. (2013). Self-management support needs of patients with chronic illness: Do needs for support differ according to the course of illness? *Patient Education and Counseling*, *93*(3), 626 - 632. https://doi.org/10.1016/j.pec.2013.08.021

Van Houtum, L., Rijken, M., & Groenewegen, P. (2015). Do everyday problems of people with chronic illness interfere with their disease management? *BMC Public Health*, *15*(1), 1000. https://doi.org/10.1186/s12889-015-2303-3

Van Kruijssen, V., van Staa, A., Dwarswaard, J., Mennema, B., Adams, S. A. (2015). Use of Online Self-Management Diaries in Asthma and COPD: A Qualitative Study of Subjects' and Professionals' Perceptions and Behaviors. *Respiratory Care*, *60*(8), 1146 - 1156. https://doi.org/10.4187/respcare.03795

Van Rijn, R. M., Robroek, S. J. W., Brouwer, S., & Burdorf, A. (2014). Influence of poor health on exit from paid employment: A systematic review. *Occupational and Environmental Medicine, 71*(4), 295 - 301. https://doi.org/10.1136/oemed-2013-101591

Varekamp, I., & van Dijk, F. J. (2010). Workplace problems and solutions for employees with chronic diseases. *Occupational Medicine, 60*(4), 287 - 293. https://doi.org/10.1093/occmed/kqq078

Varekamp, I., Haafkens, J. A., Detaille, S. I., Tak, P. P., & Van Dijk, F. J. H. (2005). Preventing work disability among employees with rheumatoid arthritis: What medical professionals can learn from the patients' perspective. *Arthritis Care and Research*, *53*(6), 965 - 972. https://doi.org/10.1002/art.21592

Varekamp, I., Heutink, A., Landman, S., Koning, C, E., De Vries, G., & Van Dijk, F. J. H. (2009). Facilitating Empowerment in Employees with Chronic Disease: Qualitative Analysis of the Process of Change. *Journal of Occupational Rehabilitation, 19*(4), 398. https://doi.org/10.1007/s10926-009-9188-x

Varekamp, I., Van Dijk, F. J. H., & Kroll, L. E. (2013). Workers with a chronic disease and work disability: Problems and solutions. *Bundesgesundheitsbl, 56*(3), 406 - 414. https://doi.org/10.1007/s00103-012-1621-1

Vassilev, I., Rogers, A., Blickem, C., Brooks, H., Kapadia, D., Kennedy, A., Sanders, C., Kirk, S., & Reeves, D. (2013). Social Networks, the "Work" and Work Force of Chronic Illness Self-Management: A Survey Analysis of Personal Communities. *PLoS ONE*, *8*(4), e59723. https://doi.org/10.1371/journal.pone.0059723

Vassilev, I., Rogers, A., Kennedy, A., & Koetsenruijter, J. (2014). The influence of social networks on self-management support: A metasynthesis. *BMC Public Health*, *14*(1), 719. https://doi.org/10.1186/1471-2458-14-719

Vaughan-Jones, H., Barham, L., Bassett, M., Beazley, N., Bevan, S., Bramley-Harker, E, … & Greenwood, A. (2009). Healthy work: challenges and opportunities to 2030. *BUPA* https://www.rand.org/pubs/external_publications/EP66185.html

Veromaa, V., Kautiainen, H., & Korhonen, P. E. (2017). Physical and mental health factors associated with work engagement among Finnish female municipal employees: A cross-sectional study. *BMJ Open*, *7*(10), e017303. https://doi.org/10.1136/bmjopen-2017-017303

Verstappen, S. M. M., Bijlsma, J. W. J., Verkleij, H., Buskens, E., Blaauw, A. A. M., ter Borg, E. J., & Jacobs, J. W. G. (2004). Overview of work disability in rheumatoid arthritis patients as observed in cross-sectional and longitudinal surveys. *Arthritis Care & Research*, *51*(3), 488 - 497. https://doi.org/10.1002/art.20419

Versus Arthritis. (2019). *The state of musculoskeletal health 2019.* https://www.versusarthritis.org/about-arthritis/data-and-statistics/state-of-musculoskeletal-health-2019/

Vick, A., & Lightman, E. (2010). Barriers to employment among women with complex

episodic disabilities. *Journal of Disability Policy Studies*, *21*(2), 70 - 80. https://doi.org/10.1177/1044207309358588

Vickers, M. H. (2008). Why People with MS are Really Leaving Work: From a Clayton's Choice to an Ugly Passage – A Phenomenological Study. In Pacific Rim Conference Strand-Disability Studies Envisioning Our Future, *4*(4), 43. https://hdl.handle.net/10125/58366

Vickers, M. H. (2017). Dark Secrets and Impression Management: Workplace Masks of People with Multiple Sclerosis (MS). *Employee Responsibilities and Rights Journal*, *29*(1), 1 - 21. https://doi.org/10.1007/s10672-017-9295-3

Vijayasingham, L., & Mairami, F. F. (2018). Employment of patients with multiple sclerosis: the influence of psychosocial-structural coping and context. *Degenerative Neurological and Neuromuscular Disease*, *8,* 15 - 24. https://doi.org/10.2147/dnnd.s131729

Vogl, S. (2013). Telephone Versus Face-to-Face Interviews: Mode Effect on Semistructured Interviews with Children. *Sociological Methodology, 43*(1), 133-177. https://doi.org/10.1177/0081175012465967

von Schrader, S., Malzer, V., & Bruyère, S. (2014). Perspectives on Disability Disclosure: The Importance of Employer Practices and Workplace Climate. *Employee Responsibilities and Rights Journal*, *26*(4), 237 - 255. https://doi.org/10.1007/s10672-013-9227-9

Vooijs, M., Leensen, M. C. J., Hoving, J. L., Wind, H., & Frings-Dresen, M. H. W. (2015). Interventions to enhance work participation of workers with a chronic disease: A systematic review of reviews. *Occupational and Environmental Medicine*, *72*(11), 820 - 826. https://doi.org/10.1136/oemed-2015-103062

Vooijs, M., Leensen, M. C. J., Hoving, J. L., Wind, H., & Frings-Dresen, M. H. W. (2017). Perspectives of people with a chronic disease on participating in work: A focus group study. *Journal of Occupational Rehabilitation*, *27*(4), 593 - 600. https://doi.org/10.1007/s10926-016-9694-6

Vornholt, K., Villotti, P., Muschalla, B., Bauer, J., Colella, A., Zijlstra, F., Van Ruitenbeek, G., Uitdewilligen, S., & Corbière, M. (2018). Disability and employment–overview and highlights. *European Journal of Work and Organizational Psychology, 27*(1), 40 - 55. https://doi.org/10.1080/1359432X.2017.1387536

Waddell G, & Burton AK. (2004). *Concepts of Rehabilitation for the Management of Common Health Complaints*. The Stationery Office.

Waddell, G, & Burton, K. (2006). *Is work good for your health and well-being?* The Stationery Office. https://cardinal-management.co.uk/wp-content/uploads/2016/04/Burton-Waddell-is-work-good-for-you.pdf

Waddell, G., Burton, K., & Kendall, N. (2008). *Vocational Rehabilitation-What Works, for Whom, and When?* (Report for the *Vocational Rehabilitation Task Group*). The Stationery Office.

Waddell, G.. (2006). Preventing incapacity in people with musculoskeletal disorders. *British Medical Bulletin*, *77*(1), 55 - 69. https://doi.org/10.1093/bmb/ldl008

Wake, M., & Green, W. (2019). Relationship between employee engagement scores and service quality ratings: Analysis of the National Health Service staff survey across 97 acute NHS Trusts in England and concurrent Care Quality Commission outcomes (2012-2016). *BMJ Open*, *9*(7), e026472. https://doi.org/10.1136/bmjopen-2018-026472

Walker-Bone, K., Palmer, K. T., Reading, I., Coggon, D., & Cooper, C. (2004). Prevalence and impact of musculoskeletal disorders of the upper limb in the general population. *Arthritis Care & Research, 51*(4), 642 - 651. https://doi.org/10.1002/art.20535

Walker, E. R., Barmon, C., McGee, R. E., Engelhard, G., Sterk, C. E., Diiorio, C., & Thompson, N. J. (2014). Perspectives of adults with epilepsy and their support persons on self-management support. In *Qualitative Health Research, 24(11),* 1553 - 1566. https://doi.org/10.1177/1049732314548880

Walker, J. (2001). *Control and the Psychology of Health: Theory, Measurement and Applications.* Open University Press.

Ward, K., Gott, M., & Hoare, K. (2015). Participants' views of telephone interviews within a grounded theory study. *Journal of Advanced Nursing, 71*(12), 2775 - 2785. https://doi.org/10.1111/jan.12748

Weijman, I., Ros, W. J. G., Rutten, G. E. H. M., Schaufeli, W. B., Schabracq, M. J., & Winnubst, J. A. M. (2003). Fatigue in employees with diabetes: Its relation with work characteristics and diabetes related burden. *Occupational and Environmental Medicine*, *60(supl 1), i93-i98.* https://doi.org/10.1136/oem.60.suppl_1.i93

Weijman, I., Ros, W. J., Rutten, G. E., Schaufeli, W. B., Schabracq, M. J., & Winnubst, J. A. (2005a). Frequency and perceived burden of diabetes self-management activities in employees with insulin-treated diabetes: Relationships with health outcomes. *Diabetes Research and Clinical Practice*, *68*(1), 56 - 64. https://doi.org/10.1016/ j.diabres.2004.08.004

Weijman, I., Ros, W. J. G., Rutten, G. E., Schaufeli, W. B., Schabracq, M. J., & Winnubst, J. A. (2005b). The role of work-related and personal factors in diabetes self-management. *Patient Education and Counseling*, *59*(1), 87 - 96. https://doi.org/10.1016/ j.pec.2004.10.004

Wengraf, T., & Chamerlayne, P. (2006). *Interviewing for life-histories, lived situations and personal experience: The Biographic-Narrative Interpretive Method (BNIM). Short*

Guide to BNIM interviewing and interpretation. http://www.uel.ac.uk/wwwmedia/microsites/cnr/documents/Wengraf06.rtf

Wheatley, D. (2017). Employee satisfaction and use of flexible working arrangements. *Work, Employment and Society, 31*(4), 567 - 585. https://doi.org/10.1177/0950017016631447

Whittemore, R., & Dixon, J. (2008). Chronic illness: The process of integration. *Journal of Clinical Nursing*, *17*(7B), 177 - 187. https://doi.org/10.1111/j.1365-2702.2007.02244.x

Wickström, A., Fagerström, M., Wickström, L., Granåsen, G., Dahle, C., Vrethem, M., & Sundström, P. (2017). The impact of adjusted work conditions and disease-modifying drugs on work ability in multiple sclerosis. *Multiple Sclerosis Journal, 23*(8), 1137 - 1147. https://doi.org/10.1177/1352458516671818

William, L. C. (2016). The implementation of equality legislation: the case of disabled graduates and reasonable adjustments. *Industrial Relations Journal*, *47*(4), 341 - 359. https://doi.org/10.1111/irj.12143

Williams-Whitt, K., Bültmann, U., Amick III, Munir, F., Tveito, T.H., & Anema, J. R. (2016). Workplace Interventions to Prevent Disability from both the Scientific and Practice Perspectives: A Comparison of Scientific Literature, Grey Literature and Stakeholder Observations. *Journal of Occupupational Rehabilitation*, *26*(4), 417 - 433. https://doi.org/10.1007/s10926-016-9664-z

Wisdom, J. P., Cavaleri, M. A., Onwuegbuzie, A. J., & Green, C. A. (2012). Methodological reporting in qualitative, quantitative, and mixed methods health services research articles. *Health Services Research*, *47*(2), 721 - 745. https://doi.org/10.1111/j.1475-6773.2011.01344.x

Woolley, C. M. (2009). Meeting the mixed methods challenge of integration in a sociological study of structure and agency. *Journal of Mixed Methods Research, 3*(1), 7 - 25. https://doi.org/10.1177/1558689808325774

World Health Organization Scientific Group. (2003). *The Burden of Musculoskeletal Conditions at the Start of the New Millennium.* https://apps.who.int/iris/handle/10665/42721

World Health Organization. (2016). *International classification of diseases for mortality and morbidity statistics (10th Revision).* https://icd.who.int/browse10/2016/en#!/IX

World Health Organization. (2018). *Mental health: strengthening our response.* https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

World Health Organization. (n.d.). *Workplace Health Promotion*. https://www.who.int/occupational_health/topics/workplace/en/index1.html

Wynne-Jones, G., Buck, R., Porteous, C., Cooper, L., Button, L. A., Main, C. J., & Phillips,

C. J. (2011). What happens to work if you're unwell? Beliefs and attitudes of managers and employees with musculoskeletal pain in a public sector setting. *Journal of Occupational Rehabilitation, 21*(1), 31 - 42. https://doi.org/10.1007/s10926-010-9251-7

Wynne-Jones, G., Cowen, J., Jordan, J. L., Uthman, O., Main, C. J., Glozier, N., & Van Der Windt, D. (2014). Absence from work and return to work in people with back pain: A systematic review and meta-analysis. *Occupational and Environmental Medicine*, *71*(6), 448 - 458. https://doi.org/10.1136/oemed-2013-101571

Xanthopoulou, D., Baker, A. B., Heuven, E., Demerouti, E., & Schaufeli, W. B. (2008). Working in the Sky: A Diary Study on Work Engagement Among Flight Attendants. *Journal of Occupational Health Psychology*, *13*(4), 345 - 356. https://doi.org/10.1037/1076-8998.13.4.345

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2012). A diary study on the happy worker: How job resources relate to positive emotions and personal resources. *European Journal of Work and Organizational Psychology*, *21*(4), 489 - 517. https://doi.org/10.1080/1359432X.2011.584386

Yaskowich, K. M., Stam, H. J., & Ta M, H. J. S. (2003). Cancer Narratives and the Cancer Support Group. *Journal of Health Psychology, 8*(6), 720 - 737. https://doi.org/10.1177%2F13591053030086006

Yohannes, A. M., Dodd, M., Morris, J., & Webb, K. (2011). Reliability and validity of a single item measure of quality of life scale for adult patients with cystic fibrosis. *Health and Quality of Life Outcomes*, *9*(1), 1 - 8. https://doi.org/10.1186/1477-7525-9-105

Zamawe, F. C. (2015). The implication of using NVivo software in qualitative data analysis: Evidence-based reflections. *Malawi Medical Journal, 27*(1), 13 - 15. https://doi.org/10.4314/mmj.v27i1.4

Zhao, D. H., Cheung, J. M. Y., Smith, L., & Saini, B. (2018). Exploring asthma in the workplace: A triangulation of perspectives from management, employees and people with asthma. *Journal of Asthma*, *55*(8), 859 - 867. https://doi.org/10.1080/02770903.2017.1369991

Zill, J. M., Dwinger, S., Kriston, L., Rohenkohl, A., Härter, M., & Dirmaier, J. (2013). Psychometric evaluation of the German version of the patient activation measure (PAM13). *BMC Public Health*, *13*(1), 1027. https://doi.org/10.1186/1471-2458-13-1027

Zwibel, H. L. (2009). Contribution of impaired mobility and general symptoms to the burden of multiple sclerosis. *Advances in Therapy*, *26*(12), 1043 - 1057. https://doi.org/10.1007/s12325-009-0082-x

Appendices

Summary of Studies Presenting Evidence for Work Modifications for LTCs.

Author (year)	Aim	Design	Sample (n)	Health Condition (n)	Findings
de Boer et al., (2017).	Identify factors affecting employer's management of employed cancer survivors.	Systematic review.	26 qualitative and 10 quantitative studies.	Diagnosed and treated for cancer.	Work modifications perceived as burdensome by some managers.
Baanders et al., (2001).	Quantify adjustment prevalence and explore relations with work problems, LTC and work characteristics.	Panel of patients with LTCs, longitudinal study.	556 workers in the Netherlands.	Various LTCs.	Adjustments are used by a limited worker number, 15.7% received including reduced hours, work pace and altered work schedules.
Bastien & Corbière, (2019).	Depict the adjustment practices of HR or employers as part of return-to-work after depression.	Qualitative semi-structured telephone interview study.	n = 219 HRD and employer representatives.	Employer or HRD of an organisation.	Adjustments mainly related to work aspects such as work scheduling to the neglect of psychosocial factors including other supports (i.e., colleagues, medical).
Bell, (2015).	Review the role and application of the UK Equality Act work adjustments.	Review of the grey, academic and industrial literature.	n/a.	Mental health conditions.	Adjustments are a valuable support but restricted by legal interpretations.
Boot et al., (2013).	Explore the prevalence and effects of work adjustments for LTCs.	Longitudinal, survey study.	n = 7,687 Dutch workers.	Mental health n=526, MSK n=3193, Respiratory n=1,141, Cardiovascular n=548, Diabetes n=447.	22% of workers received adjustments, 30% reported a need for adjustments. Requirements for adjustments is higher than their prevalence and related to reduced sick leave.

Author (year)	Aim	Design	Sample (n)	Health Condition (n)	Findings
Clayton et al., (2012).	Review of work adjustment experience studies.	Systematic review of 5 OECD countries.	n = 10 studies.	Employed and unemployed people with LTCs and/or disability.	Flexible working adjustments and perceived control of work demands enhances employment and are related to return-to-work. Adjustments recommended on a larger scale.
Coole et al., (2010).	Describe adjusted work experiences of workers with lower back pain.	Qualitative, semi-structured interview study.	n=25 employed patients.	Back pain.	Workers make informal adjustments and are affected by their sense of control. Adjustments were received informally from managers cautiously. Limited OH adjustments support.
Foster & Fosh, (2010).	Examination of workers attempts to negotiate adjustments and workplace representation.	Qualitative semi-structured interview study.	n = 20.	n = 20 self-reported disabled public-sector workers.	Workers struggle to secure basic adjustments. Adjustments are negotiated individually and depend on the knowledge and attitudes of poorly trained managers. Processes could lead to bullying resulting in stress and ill health. Adjustments are underappreciated with a lack of organisational process.
Holland & Collins, (2018).	Exploration of experiences of working after onset of rheumatoid arthritis.	Qualitative semi-structured (6-month) interview study.	n = 11 workers.	Rheumatoid arthritis.	Adjustments enabled people to keep working and restore work capacity but can facilitate presenteeism. Policies should be flexible.
Johansson et al., (2006).	Assess whether return-to-work is affected by worker's ability to adjust work (decision latitude).	Cross-sectional survey study.	n = 3,056 workers who had taken sick leave for 90 days in 2000.	Affected by one of 16 ICD-10 diagnoses including depression, MSK disorders etc.	Likelihood of return-to-work increased with the number of opportunities to adjust work. Effective adjustment types need to be determined.

Author (year)	Aim	Design	Sample (n)	Health Condition (n)	Findings
Leslie et al., (2015).	Analyse the percentage of workers who utilise work adjustments and why.	Cross-sectional survey study.	n = 746 workers.	multiple sclerosis.	87.7% of adjustments were made. LTC severity, symptoms and cognitive impairment were related to adjustments need. Adjustments do not promote job satisfaction.
Little et al., (2011).	Examine improvements in mental health knowledge, attitudes and work practices of British employers (2006-2009).	Longitudinal telephone interview survey study.	n = 500 chief executive officers, managing and finance directors and HR representatives.	Mental health conditions.	Less than one third of employers have mental health policies. Adjustments arrangements need to be more formal and training provided.
Mannerkorpi & Gard, (2012).	Identify the health problems and work difficulties hindering work continuation.	Qualitative, focus group interview study.	n = 27 employed females	Fibromyalgia.	Opportunities to adjust work tasks and work environment were key factors influencing whether affected women could work.
McDowell & Fossey, (2015).	Investigation of types and aims of work adjustments provided and their cost/benefits.	Scoping review.	n = 9 studies.	Mental health conditions.	Common adjustments were flexible working, jobs, training and supervision. Adjustments are important to people with mental health conditions. Legal information about adjustments is needed.
Munir et al., (2005a).	Measurement of work limitations and adjustments in a group of chronically ill workers.	Cross-sectional survey study.	n = 610 workers with LTCs.	Various LTCs.	Adjustments were more available where physical adjustments are required. 30.3% received an adjustment. Disclosure is a predictor of adjustments.
Nelson et al., (2016).	How do supervisors accommodate and support workers with chronic conditions?	Semi-structured interviews.	n = 32 insurance company supervisors	Various LTCs.	Supervisors regularly interact with workers to accommodate LTCs. More authority and flexibility enables supervisors to modify work.

Author (year)	Aim	Design	Sample (n)	Health Condition (n)	Findings
Nilsson et al., (2013).	Investigate perceived and received social support from managers and colleagues, including adjustments and relations with sickness absence.	Cross-sectional survey study.	n = 605 female workers affected by breast cancer.	Breast cancer treatment for a first diagnosis.	Low levels of work adjustments were associated with greater sickness absence.
Paulides et al., (2019).	Systematically review the literature about work disability in people with inflammatory bowel disorders (IBD)	Systematic review.	6 studies, n = 7,700 workers.	IBD including Crohn's and ulcerative colitis.	Workers with IBD need adjustments but have problems asking for and arranging adjustments. Better practical and information about work resources are needed.
Ruston et al., (2013).	Exploration of diabetic workers' experiences of managing their LTC at work.	Qualitative semi-structured telephone interview study.	n = 43 workers with diabetes.	Type 1 or 2 diabetes.	Due to work demands, stigma concerns and poor managerial support, workers adapt their disease management to their job putting their health at risk.
Vooijs et al., (2015).	Provide an overview of effective work interventions enhancing the work participation of people with LTCs.	Systematic review.	9 reviews.	Various LTCs.	Studies of effective interventions for people with LTCs are mainly concerned with work changes (i.e., making adjustments, flexibility etc).
Vornholt et al., (2018).	Summarise the research relating to disability and employment obstacles.	Review of the grey and academic and industrial literature.	n/a	Mental health conditions.	Non-disclosure is an obstacle to adjustments. Disability is a negative interaction between LTCs and environment. Obstacles are attributed to the work context.

Author (year)	Aim	Design	Sample (n)	Health Condition (n)	Findings
William, (2016).	Exploration of whether and how adjustments are secured at work.	Life history, semi-structured interviews.	n = 31 graduates, including 21 workers.	Self-reported disabled (including physical, sensory, multiple and learning conditions).	Time related adjustments were most requested. A majority secure adjustments. Adjustment processes are protracted, and employer knowledge of disability effects is an important determinant of securing adjustments.

Summary of Studies Presenting the Evidence for Workplace Health Promotion Programmes.

Author (year)	Aim	Design	Sample	Target Behaviour(s)	Findings
Davies, (2015).	Determine if WHPs reduce presenteeism and absenteeism, improve health and identify the effect of interventions.	Systematic review.	n = 10 studies.	Absence, presenteeism, health improvements.	Results were unable to identify if programs reduce absenteeism or presenteeism. Better WHP engagement is needed. Some elements could improve physical health, but more benefits with targeted psychological and emotional aspects.
Goetzel & Ozminkowski, (2008).	Review of WHP research to assess health and cost benefits of WHPs.	Literature review.	n/a.	n/a.	WHPs embedded in work cultures are more likely to succeed and access is key. Promising WHP practices are multifaceted and reliant on leadership support, organisational culture, needs analysis, support self-care and participation.
Hill, (2007).	Review of the evidence for workplace interventions to prevent and manage common health problems.	Evidence review.	33 systematic, meta and Cochrane reviews.	n/a.	The evidence for health promotion is limited. Implementing work health interventions needs a multi-model approach and worker, and employer cooperation.
Kuoppala et al., (2008).	Explore relationship between WHP, job, wellbeing, workability, absence and retirement.	Systematic review.	n = 45 studies.	Absence, wellbeing, workability, retirement.	Work promotion is valuable for wellbeing and workability, and moderate evidence that health promotion decreases absence. Education and psychological means alone do not appear effective.

Author (year)	Aim	Design	Sample	Target Behaviour(s)	Findings
Maes et al., (2012).	Summarise the evidence for effective work interventions to promote dietary behaviours and increase physical activity.	Systematic review.	n = 30 studies.	Dietary & physical.	Limited to moderate evidence for positive effects of dietary workplace interventions.
Malik et al., (2014).	Review of workplace physical activity intervention effectiveness and methodological quality.	Systematic review.	n = 58 studies.	Physical.	32 studies showed a statistically significant increase in physical activity against a control group at follow-up. Some evidence interventions are efficacious but inconclusive.
Gayed et al., (2018).	Investigate the effects of MHFA programme on manager knowledge, attitudes, confidence and behaviours towards workers with mental health LTCs and its effect on absence.	Cluster RCT of line managers MHFA.	n = 128 managers.	Sickness absence and managerial support.	Mean rate of sickness absence reduced in the intervention group. MHFA could lead to a reduction in work-related sickness absence.
Milner et al., (2013).	Develop and test a model of leadership support (based on social exchange theory) for WHP and worker wellbeing.	Cross-sectional employer and worker survey.	n = 71 organisations n = 11,472 workers	n/a.	Leaders support for WHP was important at the level of providing access to WHP support. Leaders should show their commitment to WHPs through work policies and practices.
Nöhammer et al., (2011).	Investigate the potential benefit of WHPs to worker wellbeing from an workers' perspective.	Quantitative survey study.	n = 237 white-collar workers.	Wellbeing.	WHPs improve worker wellbeing. Physical-cognitive and emotional wellbeing benefits were mostly felt by participants.

Author (year)	Aim	Design	Sample	Target Behaviour(s)	Findings
Osilla et al., (2012).	Analyse the impact of WHPs on health and financial outcomes, and the effect of incentives.	Systematic review.	n = 33 studies evaluated 63 outcomes	General health.	Mixed results for effectiveness of WHPs on health related behaviours (i.e., smoking) and evidence for effects on absence and mental health are lacking.
Pescud et al., (2015).	Explore employer's views on workplace health and wellbeing promotion.	Qualitative focus-group interview study.	n = 79 Western Australian employer representatives, 10 focus-groups.	n/a.	Health and wellbeing activities are considered in the context of a health and safety paradigm, and more familiar to large employers. Employers are uncertain about their responsibilities to provide health promoting opportunities.
Rongen et al., (2013).	Investigate the effect of population, study and intervention features on the effectiveness of WHPs.	Systematic review.	RCTs published before June 2012 evaluating smoking, physical activity, nutrition, absence, productivity and workability WHPs.	Physical, dietary & mental.	Overall effects of WHPs was small. Higher quality RCTs reported lower effect sizes. WHPs were more effective in younger populations.
Röttger et al., (2017).	Investigation of the benefits of a workplace sleep coaching intervention.	Intervention study.	n = 24 participants.	Sleep and self-care.	Participants attending coaching had a significant increase in well-being and self-care behaviours.

Summary of Studies Presenting the Evidence for Employee Assistance Programmes.

Author (year)	Aim	Design	Sample	Findings
Arthur, (2000).	A review and synthesis of the evidence for EAPs.	Literature review.	.	EAPs have a role in supporting workers experiencing distress but are unable to counter stressful work environments effects.
Arthur, (2002).	Assess the level of psychological disturbance in workers attending EAP counselling.	Cross-sectional survey.	n = 111.	EAP services meet a genuine need. Significant proportion of workers who attend counselling might be experiencing serious mental health problems.
Azzone et al., (2009).	Examination of relations between organisational factors, stress and EAP counselling usage.	EAP claims data linked to measures of stress, wellbeing, wellness promotion and activities.	n = 742,937 enrollees from 26 employers.	More EAP promotion and workplace activities associated with greater likelihood of counselling service use. Unusual and significant stress associated with low use.
Bajorek, (2016).	Examination of EAP usage and provision in UK organisations.	Cross-sectional survey and semi-structured interview study.	Survey n = 78 HR & n = 11 providers. Interviews n = 10 HR & providers.	EAPs are good practice. Utilisation is perceived to be lower than expected. Value is unclear in part due to measurement difficulties. Stress is a common reason for use.
Joseph et al., (2014).	Systematically appraise the evidence for the effectiveness of North American EAPs.	Systematic review.	n = 17 studies.	EAP use enhances outcomes including reduced presenteeism and better work functioning. Mixed results were reported for absence effects.
McLeod, (2010).	Evaluate the effectiveness of workplace counselling.	Systematic review.	n = 10 good quality studies reviewed.	Counselling is generally effective in alleviating psychological problems, has a significant impact on sickness absence, and has a moderate effect on attitudes to work.
Mellor-Clark et al., (2013).	Analyse a national sample of EAP data and profile relative service quality (UK	CORE system data profile analysis.	n = 28,000 client profiles from 6 EAP providers.	EAP users were distressed, accessed treatment quickly, most completing treatment with high

Author (year)	Aim	Design	Sample	Findings
	NHS and higher education) on a set of key service indicators.			recovery rates or improvement relative to NHS and HE benchmarks.
Nunes et al., (2018).	Test the impact of EAPs on reducing employee absence (work time lost).	Quasi experimental survey design using worker timecard data.	EAP and non-EAP users n = 145	EAP users had greater reduced absence, 4.8 to 6.5 percent fewer working hours lost.
Rick, (2012).	Identify and synthesise the evidence of the impact of EAPs on relevant worker/employer outcomes.	Systematic review.	n = 18 studies reviewed.	There is a lack of evidence for the effectiveness of EAPs. Evidence relating to 1:1 EAP counselling suggests overall positive changes in wellbeing over time. Organisations cannot assume that benefits accrue from having an EAP.

Ethical Approval Confirmation.

From: ssehs_res_ent
To: Fehmidah Munir
Cc: Sally Hemming
Subject: Ethical Clearance
Date: 19 July 2016 12:26:07
Attachments: image001.png
image002.png

Dear Dr Munir,

Reference number SSEHS-2031

I can confirm that your ethics checklist:

Do employees with long term health conditions need self-management support in the workplace?

Has been approved. The reference number is SSEHS-2031

Kind regards

Charlotte Barradell
Finance and Research Office, JB0.16
School of Sport, Exercise and Health Sciences
Loughborough University
Loughborough
Leicestershire LE11 3TU
Tel: +44 (0) 1509 226416

Ethical Amendment Approval Confirmation.

Jacqueline Green
Wed 21/03/2018 16:02
To: Sally Hemming; Fehmidah Munir
Cc: ssehs res ent

Project Title: Do employees with long-term health conditions need self-management support at work?
HPSC Reference Number: C18-16

Dear Sally

Many thanks for providing the Checklist and additional information. On behalf of the Ethics Approvals (Human Participants) Sub-Committee, I can confirm that the information is sufficient and that the study above has full ethical approval.

Kind Regards,

Jackie

Jacqueline Green
Secretary, Ethics Approvals (Human Participants) Sub-Committee
Hazlerigg Building, Research Office
Loughborough University
01509 222423
J.A.Green@lboro.ac.uk
Website: http://www.lboro.ac.uk/committees/ethics-approvals-human-participants/

Employee Information Sheet.

Loughborough University

Are You an Employee?
How Do You Keep 'Well' at Work?

Statistics suggest that **15 million people** in the **UK** are living with **a long-term health condition** (Department of Health 2012) and, it is estimated that **21 million people** of **working age** will have at least **1 long-term condition** by **2030** (Vaughan-Jones & Barham 2010). Those with conditions or disabilities are more likely to be or become unemployed but, there is good evidence that **work is good for health** (Black 2008).

We know that **employed** people with **long-term health conditions** are '**self-activated**' to look after their health **at work**. Self-activation is about the knowledge, skills and confidence people have to take action to look after themselves. We would like to have a better understanding about this **in the workplace** and the extent to which employees are activated to look after their health whilst working.

You are being invited to take part in a **research study**. Before you make a decision, we would like you to understand what we are examining, why and what is involved. Please carefully read this briefing sheet and if you have any questions do not hesitate to get in touch with us**.**

What is the purpose of the study?

The purpose of this study is to undertake research that has the potential to improve and lengthen the working lives of employees with long-term health conditions including; cancer, musculoskeletal disorders, anxiety, depression and stress; diabetes, cardiovascular and lung disorders and 'other' conditions.

We are looking for **volunteers with or without a long-term health condition** to be involved in a new research project broken down into 3 phases. These phases are expected to span up to a 24 month period. The first stage involves an online survey and a sample will be asked to take part in a telephone interview.

What will the study look at?

This study will examine long-term health conditions and how they are managed and looked after in the workplace. Specifically this study will look at employee/worker 'self-activation' to look after their health condition. What we mean by self-activation is the actions an individual takes to look after their health condition for example by taking medication, coping, responding to symptoms, seeking support etc.

The **objectives** of the research are to:

1. Understand in what ways employees/workers with long-term health conditions are currently self-activated to manage their health;
2. Identify what self-activation support is needed by employees with long-term health conditions in the workplace;
3. Understand the influence/bearing of work on those with long-term health conditions & their relationship with self-activated activity;
4. Analyse the ways in which self-activation is currently supported in work;
5. Propose & recommend interventions that support self-activation in work.

What long-term health conditions will be looked at?

This study will examine employees and workers (including volunteers) with and without long-term health conditions. Participants without health conditions will not be required to answer all parts of the survey.

We are especially interested in those individuals with **one or more** of the following conditions which has been diagnosed by a medical Doctor:

- ¶ Cancer (all types) that is either active or remitting;
- ¶ Lung disorders/COPD including emphysema, bronchitis & asthma;
- ¶ Cardiovascular disease & hypertension;
- ¶ Diabetes type 1 & 2;
- ¶ Musculoskeletal problem(s) including lower back/neck pain, arm/hand pain, leg/foot pain, arthritis & rheumatism &/or;
- ¶ Depression, anxiety & stress.

We will also be collecting data about ‘other’ long-term conditions that might be reported and working conditions and workability information, for all participants with or without health conditions.

Who is doing this research?

Sally Hemming is a PhD research student at the University of Loughborough and an interim HR professional. She is a graduate of the University of Leicester and University of Westminster and a chartered member of the CIPD (Chartered Institute of Personnel & Development). Sally has 17 years’ HR experience gained across a number of industry sectors having spent time as an HR director and employee relations lead. Alongside her research she is currently working on an interim basis for a major employer.

Sally is supervised by Dr Fehmidah Munir. Dr Munir is a well-established researcher in the field of occupational psychology and health sciences.

This study is part of a student research project supported by Loughborough University.

Why are we looking at this question?

People with long-term health conditions are at higher risk of not participating in work and becoming unemployed. Most people with long-term health conditions are also responsible for being activated to look after their health on their own on a day to day basis. This is what we mean by self-activation.

It is acknowledged that employed individuals with a long-term health condition are often activated to manage and look after their condition whilst they are at work. However our understanding of this is limited. A better understanding of self-activated activity and the needs of the employee in work is needed. A better understanding would be of great value to both the employee with a long-term health condition and the employer.

This study has the potential to enhance our knowledge and understanding of the experience of working when you have a long-term health condition that requires managing and looking after. This in turn has the potential to inform working practices and how health is currently actively managed and supported in the workplace.

Are there any exclusion criteria?

1. Employees/workers who do not have a formal diagnosis of a long-term health condition will be excluded from some (but not all) aspects of the study. A formal diagnosis means a condition diagnosed by either a GP or qualified medical professional.
2. Self-employed and 3rd party contractors are excluded for this study. Participants must be directly employed by the participating organisation.
3. Participants who do not have a permanent UK address or are based overseas will be excluded.
4. Individuals who are expected to be absent from work during the research phases will be excluded this could include those on long-term sick leave, those taking prolonged family/maternity/shared leave etc.
5. Participants who are not able to read, write and speak in English will be excluded.

What will I be asked to do?

The research is intended to be made up of 3 phases and 4 studies which are described below and for ease as illustrated in a flow chart (see page 6).

There are 2 core 'participant groups' – employees (studies 1, 2 and 4) and employers (potentially phase 2). When we speak about 'participants' we are referring to employees. Employers are referred to as 'employer participants' or 'participant organisations'.

1. **Phase 1 (1-12 months) - Study 1 & 2**

Consent

Participants will be asked to give their written or online consent to take part in the research.

Questionnaire

Once an individual is recruited onto the research programme they will be asked to complete a preliminary online questionnaire. This questionnaire is designed to establish a picture of the participants and to identify preliminary issues. The questionnaire will ask about basic demographic information, health condition(s), time spent with employer etc. It will also ask about current self-activated activity, work factors and confidence.

Telephone Interview

Once a questionnaire has been received a sample of participants will be invited to a 1:1 voluntary telephone interview with the researcher. The interview will be partly structured with some questions being asked of all participants. There will also be an opportunity to talk freely around the subject area. Telephone interviews will be expected to last between 30-45 minutes. The researcher will note take during the interview.

Information from this stage of research will be analysed and used to inform the design phase 2; the participant diary, employer questionnaire and interview.

2. **Phase 2 (12-18 mths) – Study 3**

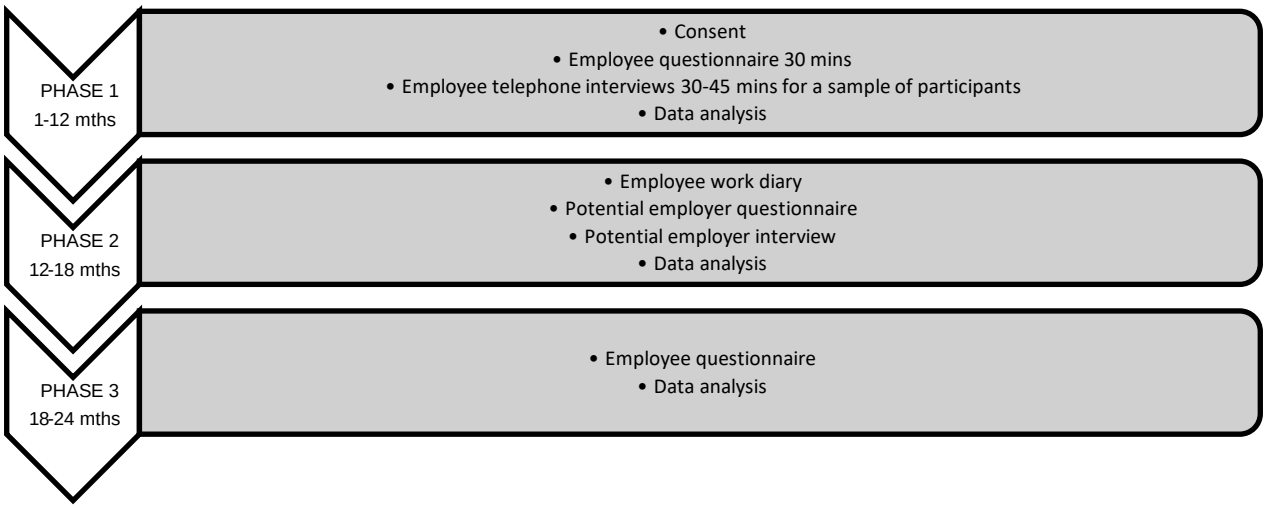
Diary

Participants will be asked to keep a health and activity diary in work. Participation will be voluntary for this study. This will be designed to provide the researcher with a picture of how health is managed in the workplace, the types of self-activated activity undertaken and the influence of work on that activity.

3. **Phase 3 (18-24 mths) – Study 4**

Participants will be asked to complete a further survey. This will ask similar questions to those in phase 1 but will be informed by the diary, employer questionnaire and interview analysis, to establish whether there have been any changes in the health condition and/or self-activated activity in the workplace.

Research Flow Chart & Envisaged Timescale



If I agree to take part can I change my mind?

If after you have started to take part you change your mind then you are free to withdraw your consent at any time by contacting the principal investigator.

However, once the results of the study are aggregated and/or the thesis has been submitted it will not be possible to withdraw your individual data from the research.

Will I be required to attend any sessions and where will these be?

There is not a requirement for face to face 1:1 sessions to take place as interviews are expected to be telephone based.

How long will it take?

The research is expected to take place over a 24 month period. It is expected that questionnaires will take no longer than 30 minutes to complete. Telephone interviews are expected to take 30-45 minutes each.

What personal information will be required from me?

Questions will be asked that will help establish a demographic picture. You can expect to be asked about your name, age, health condition, job role, marital status, length of service and contact details etc.

Are there any risks in participating?

This study has been given approval by the Loughborough University Ethics Approvals (Human Participants) Sub-Committee in July 2016.

No disadvantages are expected in taking part in the research. Although the research will not cause you harm directly some questions will be asked about aspects of your personal health condition, this might cause you unintended distress or upset.

The research programme will take up some of your time over the 24 month period.

What are the benefits in taking part?

The needs of employees with long-term health conditions and whether they need self-activation support in the workplace is not fully understood. In taking part you could be helping employers, employees and health care providers to understand working patient's self-activation needs better. This has the potential to inform employment regulation, policy and the management of health in work.

Taking part might also enable you to think and reflect on your own self- activation needs, this potentially being of benefit to you personally.

No monetary or non-monetary incentives are being offered as part of this study.

Will my taking part in this study be kept confidential?

The findings will be used to form part of a thesis and will potentially be published. We aim to ensure anonymity at all times. The study and data processed will comply with Data Protection 1998 regulations. All information and data collected about you during the research will be kept strictly confidential.

Data will be presented so as not to identify you unless you specifically request for responses to be associated with you. For example your consent will not be stored with data from you such as a returned questionnaire or with any interview transcripts. Any quotes made by you will be presented anonymously.

What will happen to the results of the study?

Data will be securely held on a personal computer until the research is finalised. The principal investigator (Sally Hemming) and the chief investigator and project supervisor (Fehmidah Munir) are the only people that will have access to results.

When the research has ended the principle researcher (Sally Hemming) will write up the results of the study and discuss the implications of the findings with Loughborough University Health Sciences department. A summary of the findings will be provided to you and your employer.

What if I am not happy?

If you are not happy with how the research was conducted, please contact Ms Jackie Green, the Secretary for the University's Ethics Approvals (Human Participants) Sub-Committee:

Ms J Green, Research Office, Hazlerigg Building, Loughborough University, Epinal Way, Loughborough, LE11 3TU. Tel: 01509 222423. Email: J.A.Green@lboro.ac.uk

The University also has a policy relating to Research Misconduct and Whistle Blowing which is available online at http://www.lboro.ac.uk/committees/ethics-approvals-human-participants/additionalinformation/codesofpractice/ .

If you have further questions:

If you require any further information please contact **Sally Hemming**, PhD Research Student & Principal Investigator:

School of Sport, Health & Exercise Sciences
Loughborough University
Loughborough
LE11 3TU
Email: **s.e.garton@lboro.ac.uk** Telephone: 07825 009

Consent Form/Online Statement

Loughborough University

DO EMPLOYEES WITH LONG-TERM HEALTH CONDITIONS NEED SELF-ACTIVATION SUPPORT IN THE WORKPLACE?

PARTICIPANT CONSENT FORM

Initial	**Please**
The purpose & details of this study have been explained to me. I understand that this study is designed to further scientific knowledge & that all procedures have been approved by the Loughborough University Ethics Approvals (Human Participants) Sub-Committee.	☐
I have carefully read & understood the participant information sheet & this consent form.	☐
I have had an opportunity to ask any questions I have about my participation & I am satisfied with any answers I have received.	☐
I understand that I am under no obligation to take part in the study & that I have the right to withdraw at any stage for any reason, & will not be required to explain my reasons for withdrawing.	☐
I agree to take part in this study. Taking part will involve completing questionnaires, being interviewed & keeping a diary.	☐
I understand that all the personal information I provide will be treated in strictest confidence & will be kept anonymous & confidential to the researchers unless (under the statutory obligations of the agencies which the researchers are working with), it is judged that confidentiality will have to be breached for the safety of the participant or others or for audit by regulatory authorities.	☐
I understand that quotes I make might be anonymised & used in publications, reports, web pages & other outputs from this study.	☐
I agree for the data I provide to be securely archived at the end of the project.	☐
I consent for my stored data to be used for future research. I understand this is a free choice and does not affect my participation in the study.	☐

_____ _____ _____
Name of participant [PRINT] Signature Date

_____ _____ _____
Researcher [PRINT] Signature Date

If you have any questions please contact: Sally Hemming, Principal Investigator
Email: s.e.garton@lboro.ac.uk
Dr Fehmidah Munir (Chief Investigator)
Email: f.munir@lboro.ac.uk

Study 1 Survey.

Do Employees with Long-Term Health Conditions Need Self-Management Support in the workplace?

Consent

Loughborough University is looking for working people to complete an online survey about how 'self-activated' they are in looking after their health at work. Self-activation is about the knowledge, skills and confidence people have to take action to look after themselves.

We would like to have a better understanding about this in the workplace and the extent to which people are activated to look after their health and well-being whilst working. We would also like to know about aspects of work affecting those with a long-term health condition such as mental health, diabetes, lung and heart disorders, back pain and people affected by cancer regardless of when they were diagnosed.

The project is planned to be made up of three phases and, participants can be assured of confidentiality and anonymity.

If you would like to take part in this research please continue to the preliminary online survey by answering the next question. You will be asked to read a consent statement and confirm your formal consent, before moving onto the questions.

1. I understand that this study is designed to further enhance our scientific knowledge and understanding of employee health, health activity and workplace support. I understand that all procedures have been approved by the Loughborough University Ethics Approvals (Human Participants) Sub-Committee. I understand that I am under no obligation to take part and that I have the right to withdraw at any stage for any reason and will not be required to explain my reasons. I understand that all personal information I provide will be treated in confidence and will be kept anonymous and confidential to the researchers. I understand that quotes I make might be anonymised and used in publications, reports, web pages and other outputs from this study. I agree for the data I provide to be securely archived at the end of the project. I consent for my stored data to be used for future research, I understand this is a free choice and does not affect my participation in the study. ☐Required

About You - Employment Status

2. Which of the following categories best describes your current employment status? *Required*

- Permanently employed, working full-time
- Permanently employed, working part-time
- Employed, working full-time temporary/fixed term contract
- Employed, working part-time temporary/fixed term contract
- Unemployed
- Self-employed
- Volunteer/worker

About You – Work

3. Do you tend to work fixed or variable/flexible hours (e.g., 9-5 would be fixed, flexi-time would be variable)? *Required*

- Fixed
- Variable/flexible

4. Please specify how many full years you have been in your current job? *Required*

5. What industry does your employer belong to? *Required*

- Healthcare
- Technology
- Financial services and insurance
- Professional services
- Public sector/not for profit
- Transportation
- Education
- Manufacturing
- Materials
- Consumer
- Retail
- Other

5.a. If you selected Other, please specify:

5.b. How many people work at your company? □*Required*

- ○ Less than 50
- ○ Between 50 -249
- ○ Between 250 -500
- ○ Between 501 -1000
- ○ More than 1000

5.c. What is your highest education level? □*Required*

- ○ Degree or above
- ○ AS/A level or equivalent
- ○ GCSE or equivalent
- ○ None

5.d. What occupational group do you consider you belong to? □*Required*

- ○ Director/manager and senior officials e.g., marketing director, finance manager
- ○ Professional occupations e.g., solicitor, teacher
- ○ Associate professional and technical e.g., land agent, health and safety officer
- ○ Administrative and secretarial e.g., legal secretary
- ○ Skilled trade e.g., carpenter
- ○ Personal service e.g., nursery nurse, cabin crew
- ○ Sales and customer service e.g., sales rep, call centre

About You - General Health

We would like to know some general information about your health, behaviours and whether you have a medical diagnosis of a long-term health condition.

We would like to know about your general physical behaviour and activity.

6. Please tell us the type and amount of physical activity involved in your work. □*Required*

- ○ I am not in employment e.g. retired
- ○ I spend most of my time at work sitting (such as in an office)
- ○ I spend most of my time at work standing or walking but, work does not require much intense physical effort e.g. shop assistant, hairdresser
- ○ My work involves definite physical effort including handling of heavy objects and use of tools e.g. plumber, electrician
- ○ My work involves vigorous physical activity including handling of very heavy objects e.g. scaffolder, building worker

7. Do you have a long-term health condition that has been diagnosed by a medical doctor e.g., cancer, depression, anxiety, asthma etc? □*Required*

○ Yes ○ No

8. During the last week, how many hours did you spend on each of the following activities? Please answer whether you are in employment or not.

	Please mark one option only □*Required*			
	None	Some but less than 1 hour	1 hour but less than 3 hours	3 hours or more
Physical exercise such as swimming, jogging, aerobics etc	○	○	○	○
Cycling including cycling to work and during leisure time etc	○	○	○	○
Walking including walking to work, shopping etc	○	○	○	○
Housework/childcare	○	○	○	○
Gardening/DIY	○	○	○	○

8.a. How would you describe your usual walking pace? Please mark one option. □*Required*

○ Slow pace e.g. less than 3 mph ○ Steady average pace ○ Brisk pace
○ Fast pace e.g. over 4 mph ○ Unable to walk

9. Wellbeing is a state of being comfortable and healthy. We would like to ask your four questions about your feelings on aspects of your life. There are no right or wrong answers. We would like you to give an answer on a scale of 0 being 'not at all' to 10 being 'completely'.

Please don't select more than 1 answer(s) per row.

	0 not at all	1	2	3	4	5	6	7	8	9	10 completely
Overall, how satisfied are you with your life nowadays?	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Overall, to what extent do you feel that the things you do in your life are worthwhile?	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Overall, how happy did you feel yesterday?	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
On a scale where 0 is 'not at all anxious' and 10 is 'completely anxious' overall, how anxious did you feel yesterday?	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

10. Quality of life is the standard of health, comfort and happiness that you experience. How would you describe your overall quality of life? Please give an answer on the scale of 0 to 10, where 0 is ‘very poor quality’ and 10 is ‘excellent quality’.

Please don't select more than 1 answer(s) per row.

0 very poor quality	1	2	3	4	5	6	7	8	9	10 excellent quality
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

About You - Long-Term Health Conditions

We would like to know more about your health and in particular any formally diagnosed **long-term health conditions**. Long-term means a condition that is expected to require ongoing treatment and/or management over a period of years (including any conditions that you might have previously had but need to manage the long-term effects of).

11. Which of the following long-term health conditions affect you? Please tick all that apply. □*Required*

- ☐ Cancer
- ☐ Lung disorder incl. chronic obstructive pulmonary disease (COPD incl. bronchitis and emphysema) and asthma
- ☐ Hypertension and/or cardiovascular disease incl. stroke, heart disease and heart failure
- ☐ Mental health disorder incl. depression, anxiety and stress
- ☐ Diabetes type 1 or 2
- ☐ Musculoskeletal disorder incl. back, leg, shoulder and neck pain, arthritis and rheumatism
- ☐ None
- ☐ Other

11.a. If you selected Other, please specify:

About You - Main Long-Term Health Condition

You might have one or, more than one long-term health condition. We are interested in learning about your **'main'** long-term health condition which has been formally diagnosed by a medical doctor. This is the health condition which in your opinion has the **most impact** on your **working life**. If you have a condition that is not listed select 'Other'. If you do not have a long-term health condition, select 'None'.

12. Which **one** long-term health condition if any, do you consider affects you the most **at work** and requires the most management **at work**? □*Required*

- ○ Cancer
- ○ Lung disorder incl. chronic obstructive pulmonary disease (COPD incl. bronchitis and emphysema) and asthma
- ○ Hypertension and cardiovascular disease incl. stroke, heart disease, heart failure
- ○ Mental health disorder incl. depression, anxiety and stress
- ○ Diabetes type 1 or 2
- ○ Musculoskeletal disorder incl. back, leg, shoulder and neck pain and arthritis/rheumatism
- ○ None
- ○ Other

12.a. If you selected Other, please specify:

About You - Your Long-Term Health Condition and Self-activation

We know that for many people with long-term health conditions, they are looking after their health condition themselves much of the time.

Self-activation is concerned with the knowledge, skills and confidence you have in taking **action** to manage and look after your health condition e.g., taking medication, seeking support etc.

We would like to know about your general confidence in relation to aspects of your health.

13. Below are some statements that people sometimes make when they talk about their health. Please indicate how much you agree or disagree with each statement as it applies to you personally, by indicating your answer. There are no right or wrong answers, just what is true for you. If the statement does not apply to you select N/A.

	Required				
	Disagree strongly	Disagree	Agree	Agree strongly	N/A
I am the person who is responsible for taking care of my health					
Taking an active role in my own health care is the most important thing that affects my health					
I am confident I can help prevent or reduce problems associated with my health					
I know what each of my prescribed medications do					
I am confident that I can tell whether I need to go to the doctor or whether I can take care of my health problem myself					
I am confident that I can tell a doctor or nurse concerns I have even when he or she does not ask					
I am confident that I can carry out medical treatments I may need to do at home					
I understand my health problems and what causes them					
I know what treatments are available for my health problems					
I have been able to maintain lifestyle changes, like healthy eating or exercising					
I know how to prevent problems with my health					
I am confident I can work out solutions when new problems arise with my health					
I am confident I can maintain lifestyle changes, like healthy eating and exercising, even during times of stress					

We would like to know how activated you are about specific aspects of your health **at work**.

14. Please choose the number for each statement that corresponds with your confidence level in doing these things **at work** at the present time. *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 6 answer(s).

	1 Not at all confident	2	3	4	5	6	7	8	9	10 Totally confident
I can manage fatigue caused by my condition to ensure I can do the things I want to do at work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I can manage physical discomfort/pain caused by my condition, so it does not interfere with work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I can manage any emotional upset caused by my condition so that it does not interfere with work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I can manage any other symptoms so that they do not interfere with work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I can undertake self-management actions for my condition at work, to stop it interfering with my work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
I can do things to reduce how my condition effects work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15. Please tell us about any aspects of looking after your health **at work** that you do not feel confident about and which we have not mentioned.

16. Are there any aspects of your health that you might look after better **at work**?

Your Self-active Health Behaviour

TO BE COMPLETED BY ALL PARTICIPANTS

We are interested in understanding what actions you have taken over the **past month** when looking after your health condition.

17. Thinking about actions you have taken over the past **month,** when looking after your long-term health condition **at work**, which of the following areas have required you to take action and how often?

	Required				
	Not at all	Several days	More than half of the days	Nearly everyday	Every day
Managing fatigue/sleep					
Taking a break/resting					
Managing diet					
Taking exercise/physical activity					
Shortness of breath					
Nausea and vomiting					
Pain					
Infection					
Acute episode					
Emotional aspects					
Taking medication					
Side effects of treatment					
Mindfulness and meditation					
Self CBT/self-talk					
Monitoring symptoms e.g., taking blood pressure					

Disclosing a Health Condition to Others

We would like to know who **at work** you might have told about a health condition or not and the reason(s) behind that decision.

18. Who have you told about your health condition **at work**?

	Required		
	Yes	No	N/A
Line manager/supervisor			

Colleague/work representative	○	○	○
Occupational health	○	○	○
No-one	○	○	○

19. If applicable, for what reason(s) have you told people **at work** about your health condition? Please indicate all that apply. *Optional*

- ☐ To receive practical support e.g. workplace adjustments
- ☐ Use of medication of work
- ☐ Frequency of symptoms
- ☐ Because I needed time off
- ☐ To receive social support
- ☐ To be open and honest
- ☐ Because it was obvious something was different about me
- ☐ As part of return to work actions or employer processes e.g. absence process
- ☐ Effect of my health condition on work
- ☐ Time off to attend appointments
- ☐ Because I was required to
- ☐ Other

19.a. If you selected Other, please specify:

20. If applicable, for what reason(s) have you **not** told people **at work** about your health condition? *Optional*

- ☐ Practical support is not required
- ☐ Social support at work is not needed
- ☐ No effect of my condition on work
- ☐ Stigma and I feel unable to be honest
- ☐ Concern about my job security
- ☐ Because I am not required to
- ☐ Privacy
- ☐ Because I was on sick leave
- ☐ Other

20.a. If you selected Other, please specify:

About Your Work - Support and Working Conditions

TO BE COMPLETED BY ALL PARTICIPANTS

We know that work affects people in different ways. This section is concerned with understanding **workplace support**, demands on you **at work**, work stress and how aspects of your work might impact your behaviour, thinking, emotions and physical symptoms.

Support at Work

We would like to know about any activity that takes place to support you in looking after your health **at work**. This might include practical or emotional support. We are interested in finding out about the support you currently receive **at work** that helps you look after your health condition, what you think about it and how that is provided to you.

21. We would like to know who you turn to at work for support. Please indicate all that apply.

	Required			
	Colleague(s)	Line manager/supervisor	Occupational health	No-one
Who do you turn to at work if you need to talk about your health?	☐	☐	☐	☐
Who do you feel would help you at work if you were having a problem with your health that meant them going out of their way?	☐	☐	☐	☐
Who can you speak to openly and honestly about your health and any concerns you might have?	☐	☐	☐	☐
Who can you rely on to distract you from any health concerns and worries you might have?	☐	☐	☐	☐
Who can you really rely on to help you with any aspect of your health?	☐	☐	☐	☐
Who can you count on at work to listen openly and uncritically about how you feel about your health?	☐	☐	☐	☐
Who do you feel would help you if you had an acute health crisis at work?	☐	☐	☐	☐
Who can you count on to make you feel more relaxed when your health is putting you under pressure and making you tense?	☐	☐	☐	☐
Who accepts you totally when your health is at its best and worst?	☐	☐	☐	☐
Who can you rely on to tell you in a thoughtful way, when you might be managing your health better?	☐	☐	☐	☐
Who can you rely on to make you feel more positive when your health is making you feel down in the dumps at work?	☐	☐	☐	☐
Who can you rely on when aspects of your health are distracting you from doing your job?	☐	☐	☐	☐

Working Conditions

22. Working conditions can affect employee wellbeing. Your responses will help us determine your working conditions now and in the future. Please indicate in the **past six months** how often the following statements apply.

	Never	Seldom	Sometimes	Often	Always
I am clear what is expected of me at work					
I can decide when to take a break					
Different groups at work demand things from me that are hard to combine					
I know how to go about getting my job done					
I am subject to personal harassment in the form of unkind words or behaviour					
I have unachievable deadlines					
If work gets difficult my colleagues will help me					
I am given supportive feedback on the work I do					
I have to work very intensively					
I have a say in my own work speed					
I am clear what my duties and responsibilities are					
I have to neglect some tasks because I have too much to do					
I am clear about the goals and objectives for my department					
There is friction or anger between colleagues					
I have a choice in deciding how I do my work					
I am unable to take sufficient breaks					
I understand how my work fits in the overall aim of the organisation					
I am pressured to work long hours					
I have a choice in deciding what I do at work					
I have to work very fast					
I am subject to bullying at work					
I have realistic time pressures					
I can rely on my line manager to help me out with a work problem					

22.a. Please also indicate the extent to which you agree with the following statements when thinking about work over the **past six months**.

	□Required				
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I get help and support I need from colleagues	○	○	○	○	○
I have some say over the way I work	○	○	○	○	○
I have sufficient opportunities to question managers about change at work	○	○	○	○	○
I receive the respect at work I deserve from my colleagues	○	○	○	○	○
Staff are always consulted about change at work	○	○	○	○	○
I can talk to my line manager about something that has upset or annoyed me about work	○	○	○	○	○
My working time can be flexible	○	○	○	○	○
My colleagues are willing to listen to my work-related problems	○	○	○	○	○
When changes are made at work, I am clear how they will work out in practice	○	○	○	○	○
I am supported through emotionally demanding work	○	○	○	○	○
Relationships at work are strained	○	○	○	○	○
My line manager encourages me at work	○	○	○	○	○

22.b. If applicable, what **one** thing most needs to change **at work** for you to be more activated to look after your health condition **at work** and, continue to be productive? Please use this box to tell us.

About You - Workability

TO BE COMPLETED BY ALL PARTICIPANTS

'Workability' is a concept commonly used when we are looking at a person's ability to do their job. We are interested in understanding how you think about aspects of your work, health and your perception of your ability to do your job.

23. Are the demands of your job mainly: *Required

- Mental
- Physical
- Mental and physical

24. To what extent would you say that your health impacts on your overall ability to do your job?

	*Required		
	Does not impact my job	Impacts my job a little	Impacts my job to a great extent
Scale			

25. If you assume your current work ability at its best has a value of '10' points and at its worst '0'. How many points would you give your current workability? *Required

26. Thinking about your current health status and work do you think you will be able to do your job in **2 years' time**? *Required

Please don't select more than 1 answer(s) per row.

Please select at least 1 answer(s).

	Unlikely	Uncertain	Quite certain
Scale			

About You - General Information

27. What is your gender? *Required*

- Female
- Male
- Prefer not to say
- Other

28. What is your age? *Required*

Please enter a whole number (integer).

29. Ethnicity *Required*

- White British
- White Irish
- White - any other background
- Indian
- Pakistani
- Bangladeshi
- Asian - any other background
- Black British or Caribbean
- Black British or African
- Black - any other background
- Chinese
- Prefer not to say
- Other

29.a. If you selected Other, please specify:

30. What region do you live in? *Required*

- London
- South East
- South West
- East Midlands
- West Midlands
- North West
- North East
- Yorkshire & Lincolnshire
- East
- Isle of Man/Channel Islands
- Northern Ireland
- Wales
- Scotland
- Other

31. If you selected Other, please specify:

Contact Details

It is important that we are able to contact you again in the future to follow you and your health condition at work. The following information will be held separately from your survey responses.

32. What name would you like us to use when contacting you? □*Required*

33. What email address(es) would you like us to use to contact you? Please provide an address that will not change. □*Required*

Please enter a valid email address.

To enable us to match up your responses this time with your responses in the future, we would like to ask you to follow these instructions to create your **own unique code**.

34. Please indicate your birthday **day** (e.g., if you were born on the 7th your date is 07). □*Required*

Please enter a whole number (integer).

35. Please indicate your birthday **month** (e.g., if you were born in June then your birthday month is 06). □*Required*

Please enter a whole number (integer).

36. Please indicate the **first two letters** of your **town/city** of birth (e.g. if you were born in London it would be LO). □*Required*

Please enter a response that contains only upper case letters.

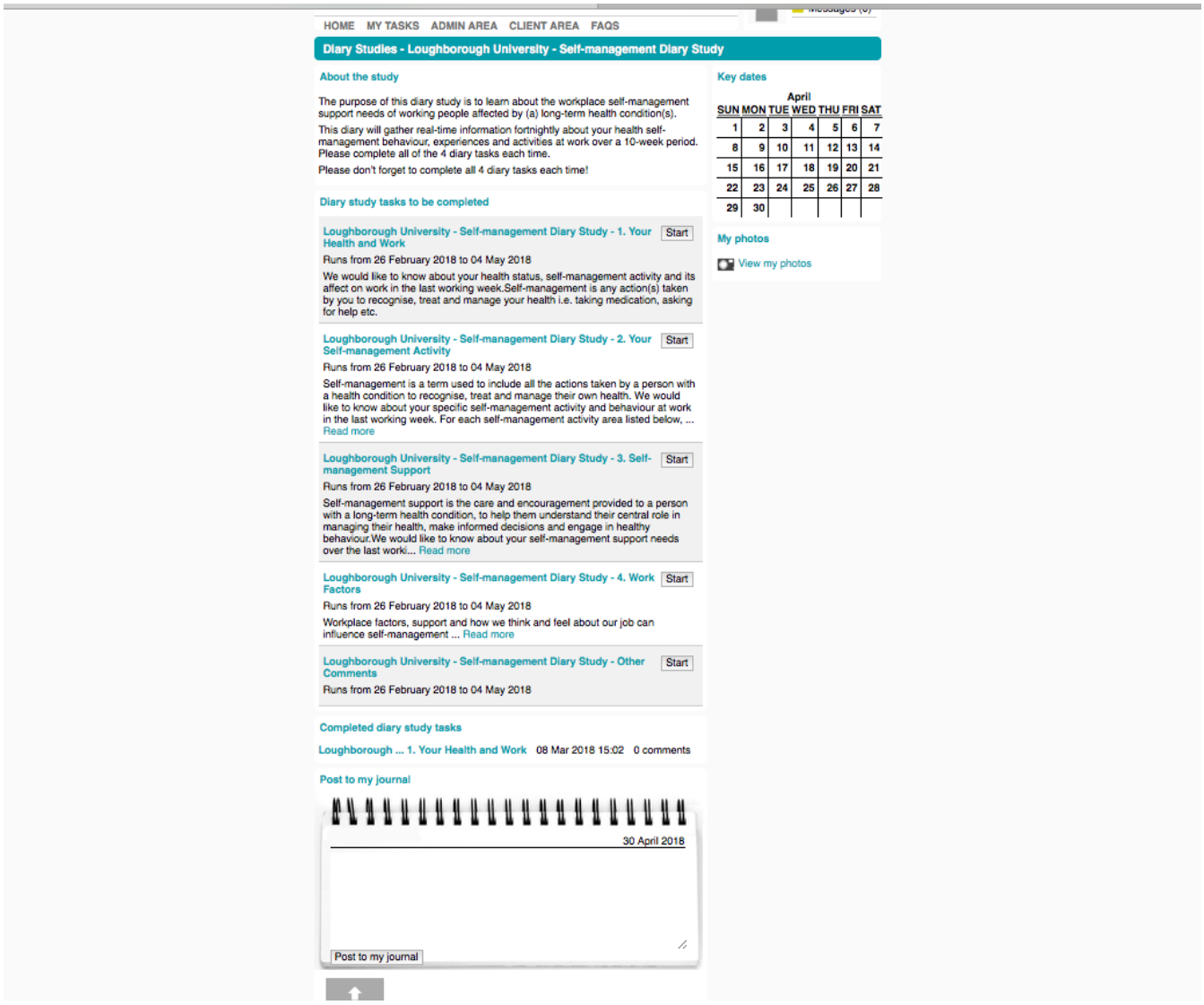
37. Please indicate how you would like to be involved with this project in the future. □*Required*

- Yes - interview
- Yes - online diary
- Yes - interview and online diary
- Yes - interview, online diary and survey
- No

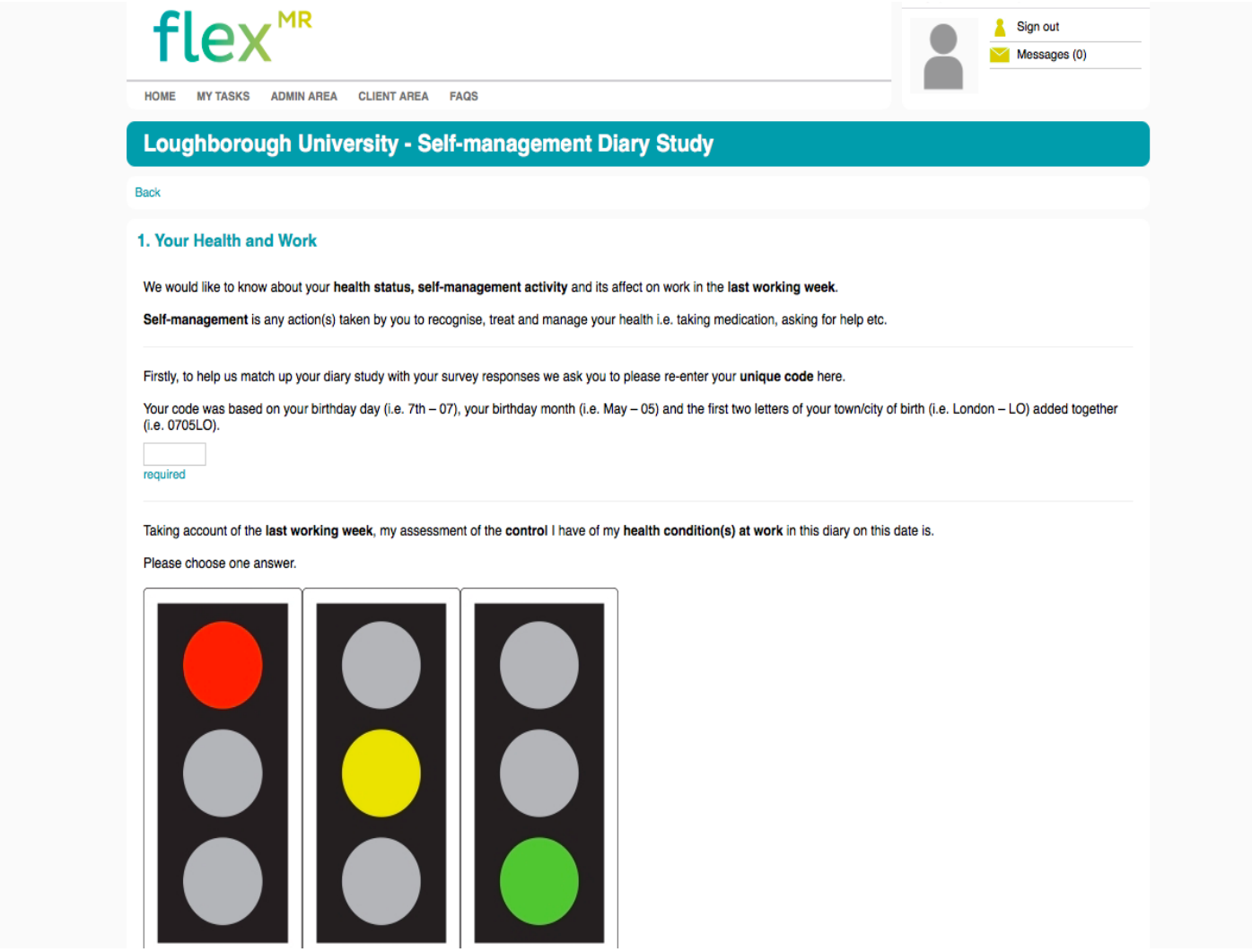
END

Thank you for taking the time to take part in this research by completing this survey.

Study 2 Screen Shot of the Online Diary's Tasks.



Study 2 Screen Shot of the Online Diary's Task 1.



Study 2 Diary Participant Information Sheet.

Self-management Support in the Workplace – Diary Study

Why is a diary study important in this research?

The purpose of the research study is to identify the workplace self-management support needs of working people, who are affected by (a) long-term health condition(s). These findings are intended to inform the design of workplace interventions that will support and enable (activate) working people to effectively self- manage their health condition in the workplace. To identify these support needs we need to accurately identify what they are from working people's experience. The work diary is intended to gather real-time information about workplace health behaviour, experiences, activities and thoughts over a period of time. An understanding of the contextual experiences of working people over-time is important in broadening our knowledge and understanding of health self-management activity and support needs in work.

How often do I take part in the diary study?

We would like you to complete the diary on 6 occasions over a 10-week period. Please complete the diary for the first time when the study opens on (or soon after) Monday 26th February 2018. From thereon we will prompt you (by email) to complete the diary on a fortnightly basis usually on a Friday (or, on your last/next working day in the week if you do not work a Friday). The study reporting period runs from 26th February to 4th May. The fortnightly diary entry dates are – Fridays: 9th and 23rd March 6th and 20th April, and 4th May.

How do I complete the weekly work diary?

The work diary is available via an online platform called FlexMR. On 26th February at the start of the study, you will receive an email from online@flexmr.email entitled 'Loughborough University Workplace Self-Management Diary'. You must click this link to set up your account, username and password and then you will be able to complete your first diary entry. You will then be prompted by email to complete the work diary each fortnight during the study period. You need to log in to do so. When you log in you will see a diary page showing the diary tasks you need to complete (it will also show tasks you have already completed). Four mandatory diary tasks need completing each time. This will take approximately 20 minutes and you should not think for too long before answering questions. If you have no comments to make in a free-text section, please mark 'none'. If you are

absent from work during the study reporting period meaning you are not able to complete the diary, it would be helpful if you could let the researcher know via email (you will not be asked to provide reasons)

Note: the calendar on the diary page will only show in bold the start and end dates of the study period.

What is the diary journal and do I need to use it?

The diary study has an additional journal function. This appears as a note-pad where you are able to make (optional) notes, comments and upload pictures at any time about any other aspect of your workplace self- management activity and support, that you think might be of use to this study. You are not required to use the journal, but we strongly encourage participants to do so to capture real-time information.

Is taking part compulsory?

It is voluntary to take part, but we value your time and participation to help inform the development of workplace interventions that will enhance health self-management behaviour.

What happens after the study ends?

At the end of the study period completed diaries are returned to the researcher Sally Hemming and Loughborough University. Your diary entries will be kept confidential. Diary entries will be analysed during the data analysis phase of the research and will inform the final study report.

Who do I contact if I have questions?

You are able to contact FlexMR with system questions via the FAQs tab on the site should you experience technical problems at any stage. For all questions relating to the study please contact the researcher Sally Hemming directly at Loughborough University via s.e.garton@lboro.ac.uk

Many thanks for your continuing support with this research study.

Study 3 Employer Semi-structured Interview Questions.

Broad Study Aims:

1. Examine how work impacts self-management behaviours;
2. Examine employers understanding of the workplace self-management support requirements of people with LHCs;

Overview

The semi-structured interview is intended to last 45-60 minutes and is concerned with finding out about employer thoughts and experience of employee health self-management support at work. Thirteen core questions that will be asked of all employer respondents.

8. To identify a base-line level of employer knowledge and understanding about employee self-management and support:
9. To explore employers' perspective on their role in the context of employee workplace health management;
10. To examine employers' views as to the reasons why employee(s) might undertake self-management activity in work, or not;
11. To understand employers' perceptions about workplace factors that might influence workplace self-management behaviour positively and/or negatively.

Broad Interview Questions

Category 1 - Roles and Responsibilities (approx. 15 minutes)

1. Do you know how many people in your organisation are affected by a long-term health condition?

Prompts:

- ¶ Roughly;
- ¶ Is this recorded anywhere
- ¶ What would you expect to see?

2. Tell me what you know about the LHC profile of your organisation or, what would you expect to see.

Prompts:

- ¶ What LHC is most prevalent;
- ¶ What does your MI tell you;
- ¶ Is there a health area that is of particular concern?

Read out: Self-management is a term used to include all the actions taken by a person with a health condition to recognise, treat and manage their own health.

3. Are you aware of employees (with LTCs) undertaking self-management activity at work i.e., taking medication, rest breaks etc?

Prompts:

- ¶ If so, what types of self-management activity are you aware of?

4. As an employer, what do you think your role is in supporting health self-management among your employees?

Prompts:

- ¶ Limited role as we are not clinicians;
- ¶ Make sure the job is not damaging.

Category 2 - Current Workplace Self-management Support (approx. 15 minutes)

5. Describe for me 'how' employee self-management at work is currently supported by the organisation.

Prompts:

- ¶ through health information;
- ¶ via online training etc.

6. 'What' types of self-management support are currently provided?
7. How is this information conveyed to employees. E.g., how do they know that adjustments can be made?

Prompts:

- workplace adjustments;
- health information etc.

8. 'Is there a dedicated individual who provides self-management support at work?

Prompts:

- Line manager, colleagues etc.

9. What do you think the self-management support needs are of people affected by LHCs in your organisation?

Prompts:

- Practical support i.e., time off to rest in the day;
- Emotional support i.e., more people to speak to;
- Job/vocational support: redistribution of tasks.

10. Do you think that your employees (with LHCs) need more, different or better self-management support at work?

Prompts:

- Please tell me about some of the reasons for that answer.

Category 3 - Workplace Psychosocial Factors (approx. 15 minutes)

Read out: Psychosocial factors are things that may affect people's psychological response to work and working conditions including things like working relationships for example, workload, control etc.

11. From your experience or observations, how have workplace factors influenced employees' self-management behaviours for a long-term health condition (positively and negatively)?

Prompts:

- How does this happen;
- What about culture;
- Working practices;
- Physical environment;
- Team working;

- Nature of the work.

12. What are some of the challenges within your organisation in providing workplace health self-management support?

Prompts:

- Costs;
- Organisation of work;
- Leadership style;
- Culture.

13. What workplace conditions in your view encourage health self-management at work?

Prompts:

- Office location and set-up;
- Working hours;
- Way work is organised.

14. What actions do you think your organisation could take (or, needs to take) to support and improve employee health self-management?

Prompts:

- Have a dialogue about it;
- Permission and support;
- Understand LHCs better.

Study 3 Employer Semi-structured Interview Information Sheet.

Do employees with long-term health conditions need self-management support in work?

15 million people in the UK are living with a long-term health condition (Department of Health 2012) and it is estimated that 21 million people of working age will have at least one long-term condition by 2030 (Vaughan-Jones and Barham 2010). Those with conditions or disabilities are more likely to be or become unemployed but there is good evidence that work is good for health (Black 2008). Long-term health is an important area of focus for employers and wellbeing strategies and just recently a government review specifically committed to reducing the proportion of people leaving the workforce who are experiencing long-term chronic mental health problems, enhancing employability and employer support (Stevenson & Farmer 2017).

We know employed people with long-term health conditions are 'self-managing' their health away from GPs and specialists much of the time and that disease management is an important part of workplace health programmes (Shaw et al 2014). Long-term health conditions are enduring, often incurable and self-management is concerned with the actions people take to manage their health condition themselves and, positively is linked with better health outcomes (Lorig et al 2001). Self-management does not take place in a vacuum but in the context of other people and influences (Gallant 2003) including work. For these reasons we would like to have a better understanding about self-management support needs in work and from an employer perspective.

If employer influence is important and if self-management is good for working people, then the employer could have a critical role to play in enabling positive health behaviours.

Study Aims

This interview study is part of a PhD research project examining the workplace self-management support needs of people with long-term health conditions. The aims of this employer interview study are:

- To examine employer understanding of employee health self-management and the support needs of those affected by long-term health conditions;

- To explore how work impacts health self-management behaviour at work.

Your Involvement

You are invited to participate in a semi-structured audio recorded interview lasting about one hour. Participation is voluntary and at any point during the study (up to one week after your interview has taken place) you are able to withdraw without giving a reason. If you decide to withdraw, your data collected up to that point will still be used unless you inform us you would not like any of your previously collected data used.

Why have I been invited to participate?

You have been invited to take part because in your organisation you have some responsibility and/or involvement with employee health and wellbeing.

What will happen if I decide to be interviewed?

If you agree to take part please complete the consent form (appendix 1) and return by email to Sally Hemming at s.e.garton@lboro.ac.uk. Sally will contact you to arrange a suitable date and time for your interview. Interviews are proposed to take place in March and April 2018.

The study interviewer is Sally Hemming. The interview structure is semi-structured with all participants being asked some core questions and with the researcher probing answers. The interviews are expected to last up to one hour and will be audio recorded. Recordings will be heard by the research team providing a richer insight into workplace health self-management than a survey might.

Ethics and Confidentiality

The study has been granted approval by Loughborough University Ethics Committee. Findings will be used to form part of a PhD thesis and will potentially be published. We aim to ensure anonymity at all times. The study and data processed will comply with Data Protection regulations. All information and data collected during the research will be kept confidential.

Data will be presented so as not to identify you (or your organisation) unless you specifically request otherwise. Any quotes made by you will be presented anonymously, quotes you make may be used in scientific publications, presentations or posters (no names or identifying details will be made available).

What will happen to the results of the study?

Data will be securely held on a personal computer or in a locked cupboard until the research is finalised. The research team at Loughborough University are the only people that will have access to data.

When the research has ended the principle researcher (Sally Hemming) will write up the results of the study and discuss the implications of the findings with Loughborough University Health Sciences department. A summary of the findings will be provided to you. The results from this research may also be presented at academic conferences and/or published in academic journals.

What if I am not happy?

If you are not happy with how the research was conducted, please contact Ms Jackie Green, the Secretary for the University's Ethics Approvals (Human Participants) Sub-Committee:

Ms J Green, Research Office, Hazlerigg Building, Loughborough University, Epinal Way, Loughborough, LE11 3TU. Tel: 01509 222423. Email: J.A.Green@lboro.ac.uk

The University also has a policy relating to Research Misconduct and Whistle Blowing which is available online at http://www.lboro.ac.uk/committees/ethics-approvals-human-participants/additionalinformation/codesofpractice/ .

If you have further questions:

If you require any further information please contact **Sally Hemming**, PhD Research Student and Principal Investigator:
School of Sport, Health and Exercise Sciences
Loughborough University
Loughborough LE11 3TU Email: **s.e.garton@lboro.ac.uk** Telephone: 07825 009163

Consent Form

Loughborough University

Do Employees with Long-term Health Conditions Need Self-management Support in Work?

Please Initial

The purpose & details of this study have been explained to me. I understand that this study is designed to further scientific knowledge & that all procedures have been approved by the Loughborough University Ethics Approvals (Human Participants) Sub-Committee. ☐

I have carefully read & understood the participant information sheet & this consent form. ☐

I have had an opportunity to ask any questions I have about my participation & I am satisfied with any answers I have received. ☐

I understand that I am under no obligation to take part in the study & that I have the right to withdraw (up to 1 week after my interview) for any reason, & will not be required to explain my reasons for withdrawing. ☐

I agree to take part in this study. Taking part will involve being interviewed and this will be audio recorded. ☐

I understand that all the personal information I provide will be treated in strictest confidence & will be kept anonymous & confidential to the researchers unless (under the statutory obligations of the agencies which the researchers are working with), it is judged that confidentiality will have to be breached for the safety of the participant or others or for audit by regulatory authorities. ☐

I understand that quotes I make might be anonymised & used in publications, reports, web pages, conferences, academic publications & other study outputs. ☐

I agree for the data I provide to be securely archived at the end of the project. ☐

I consent for my stored data to be used for future research. I understand this is a free choice and does not affect my participation in the study. ☐

I will provide my email address and mobile phone number, to allow the researcher to follow up with me as required during the project. ☐
Email: _____ Mobile: _____

I agree to take part in this study

_____ _____ _____ _____
Name of participant [PRINT] Signature Date Participant ID

_____ _____ _____
Researcher [PRINT] Signature Date

If you have any questions please contact: Sally Hemming, Principal Investigator Email: s.e.garton@lboro.ac.uk or Dr Fehmidah Munir (Chief Investigator) Email: f.munir@lboro.ac.uk

Study 4 Worker Narrative Interview Study Questions.

The narrative interview will be opened with a SQUIN (single question aimed at inducing narrative):

SQUIN Question for all interviews (read): I am interested in the self-management support needs of working people who are affected by a long-term health condition. I am seeking to understand this by collecting people's stories.

Tell me in your own words about your health self-management at work and support needs. I want you to tell me about any aspect of this including your self-management behaviour, your attitude and beliefs toward your ability to look after your health at work, and any events/experiences that form part of your story.

There are no set questions and I will not interrupt you. Take as much time as you like, please start when you are ready.

Interviewer Resources and Topic Guide.

Specific areas of interest to this interview study to be used as a reference for questioning:

Workplace context and work factors	Reason for self-management (in)activity
Motivating factors	Self-belief, attitude and confidence
Behaviour change	Health literacy
Perceived support needs	Sources of support

Semi-structured Interview Guide.

To understand support needs, these optional questions are designed to identify factors that are obstacles to self-management in the workplace. The questions are informed by the Flags framework which is useful in identifying problems in working with health problems.

Yellow Flags	*Blue Flags*	*Black Flags*
Tell me about your self-management behaviour at work?	What can be done at work to help you self-manage?	What policies, practices and/or procedures help you (or not) meet your health management needs at work?

Yellow Flags	*Blue Flags*	*Black Flags*
How does your work impact your health behaviour at work?	What do you think has caused you problems with managing your health at work?	In what ways do these features of work influence your self-management behaviour?
How do you think mgrs/colleagues perceive your health needs at work?	What response do you expect from mgrs/colleagues when you need self-management support?	

Probing Question Guide.

Useful probing questions for stage 3 semi-structured interviewing if required.

Can you tell me more about that?
What was that experience like for you?
What happened after that?
Why do you think that happened?
What did you think about that?
How did you cope?
What did others think about that?
Why did you want to happen?
What was that like?
Do you have an image of that?
What else was happening at the time?
Tell me about a time when x
Who was with you?
What might have changed things for you?
How would you like things to be?
Describe how you see the interaction of your health with work.

Study 4 Worker Narrative Interview Information Sheet.

Do employees with long-term health conditions need self-management support in work?

15 million people in the UK are living with a long-term health condition (Department of Health 2012) and it is estimated that 21 million people of working age will have at least one long-term condition by 2030 (Vaughan-Jones and Barham 2010).

We know employed people with long-term health conditions are 'self-managing' their health away from GPs and specialists much of the time and that disease management is an important part of workplace health programmes (Shaw et al 2014). Long-term health conditions are enduring, often incurable and self-management is concerned with the actions people take to manage their health condition themselves and, positively is linked with better health outcomes (Lorig et al 2001). Self-management does not take place in a vacuum but in the context of other people and influences (Gallant 2003) including work. For these reasons we would like to have a better understanding about self-management support needs in work from an employee perspective.

Study Aims

This interview study is part of a PhD research project examining the workplace self-management support needs of working people with long-term health conditions. The aim of the interview study is to collect stories of the real life self-management experiences of working people affected by health conditions.

We would like to know what is happening in the workplace with regards to self-management behaviour and support. A narrative approach allows the participant to tell their story in the way in which they choose, in their own words whilst a semi-structured interview guide will probe the broader areas of interest to the study.

The narrative interview study aims are to understand from a participant perspective:

- Workplace self-management support needs;
- Contextual work factors and their influence on employee self-management behaviour;
- Employee workplace self-management behaviour;

- How participants make sense of and assign meaning to their workplace self-management.

What is a Narrative Interview?

A narrative interview is a way of collecting people's experiences (stories) of health and illness. The interview will not follow a fixed structure and will start with one open question to you. You will control the direction of the interview.

The interviewer might also use a semi-structured interview guide to capture any broad areas of interest and might ask some probing questions as a result of listening to your narrative, at the end of the interview.

What can I expect in the Interview?

The following approach will be adopted for the interview study. No preparation ahead of the interview will be required.

The Interview

The interview will be informally structured as follows:

1. Introduction – you will be provided with an overview of the research, consent and an opportunity to ask any final questions;
2. Narrative – you will be asked a first open question and will then be telling your story of your experiences;
3. Questioning – there will be an opportunity for the interviewer to explore using questions any particular areas of interest, based on your narrative.
4. Close – the interview will be closed by the interviewer.

Your Involvement

You are invited to participate in a face to face, narrative and semi-structured (audio recorded) interview. There is no fixed duration for the interview, they can last 30 minutes or run for a few hours. Once you have given your consent to take part, you will be contacted directly by the researcher. The interview will take place at a venue that is agreed and mutually convenient in either May or June 2018.

Participation is voluntary and at any point during the study (up to one week after your interview has taken place) you are able to withdraw without giving a reason. If you decide to withdraw, your data collected up to that point will still be used unless you inform us you would not like any of your previously collected data used.

Why have I been invited to participate?

You have been invited to take part because you indicated in your survey response an interest in taking part in the interview study.

What will happen if I decide to be interviewed?

If you agree to take part please complete the consent form (appendix 1) and return by email to Sally Hemming at s.e.garton@lboro.ac.uk. Sally will contact you by telephone to discuss a suitable date and time for your interview. Interviews are proposed to take place in May and June 2018.

The study interviewer is Sally Hemming. Recordings will be heard by the research team providing a richer insight into workplace health self-management than a survey or structured interview might.

Ethics and Confidentiality

The study has been granted approval by Loughborough University Ethics Committee. Findings will be used to form part of a PhD thesis and will potentially be published. We aim to ensure anonymity at all times. The study and data processed will comply with Data Protection regulations. All information and data collected during the research will be kept confidential.

Data will be presented so as not to identify you (or your organisation) unless you specifically request otherwise. Any quotes made by you will be presented anonymously, quotes you make may be used in scientific publications, presentations or posters (no names or identifying details will be made available).

What will happen to the results of the study?

Data will be securely held on a personal computer or in a locked cupboard until the research is finalised. The research team at Loughborough University are the only people that will have access to results.

When the research has ended the principle researcher (Sally Hemming) will write up the results of the study and discuss the implications of the findings with Loughborough University Health Sciences department. The results from this research may also be presented at academic conferences and/or published in academic journals.

What if I am not happy?

If you are not happy with how the research was conducted, please contact Ms Jackie Green, the Secretary for the University's Ethics Approvals (Human Participants) Sub-Committee:

Ms J Green, Research Office, Hazlerigg Building, Loughborough University, Epinal Way, Loughborough, LE11 3TU. Tel: 01509 222423. Email: J.A.Green@lboro.ac.uk

The University also has a policy relating to Research Misconduct and Whistle Blowing which is available online at http://www.lboro.ac.uk/committees/ethics-approvals-human-participants/additionalinformation/codesofpractice/ .

If you have further questions:

If you require any further information please contact **Sally Hemming**, PhD Research Student and Principal Investigator:

School of Sport, Health and Exercise Sciences
Loughborough University
Loughborough LE11 3TU Email: **s.e.garton@lboro.ac.uk** Telephone: 07825 009163

Narrative Interview Study Consent Form.

Loughborough University

Please Initial

The purpose & details of this study have been explained to me. I understand that this study is designed to further scientific knowledge & that all procedures have been approved by the Loughborough University Ethics Approvals (Human Participants) Sub-Committee. ☐

I have carefully read & understood the participant information sheet & this consent form. ☐

I have had an opportunity to ask any questions I have about my participation & I am satisfied with any answers I have received. ☐

I understand that I am under no obligation to take part in the study & that I have the right to withdraw (up to 1 week after my interview) for any reason, & will not be required to explain my reasons for withdrawing. ☐

I agree to take part in this study. Taking part will involve being interviewed and this will be audio recorded. ☐

I understand that all the personal information I provide will be treated in strictest confidence & will be kept anonymous & confidential to the researchers unless (under the statutory obligations of the agencies which the researchers are working with), it is judged that confidentiality will have to be breached for the safety of the participant or others or for audit by regulatory authorities. ☐

I understand that quotes I make might be anonymised & used in publications, reports, web pages, conferences, academic publications & other study outputs. ☐

I agree for the data I provide to be securely archived at the end of the project. ☐

I consent for my stored data to be used for future research. I understand this is a free choice and does not affect my participation in the study. ☐

I will provide my email address and mobile phone number, to allow the researcher to follow up with me as required during the project. ☐

Email: _____ Mobile: _____

I agree to take part in this study

_____ _____ _____

Name of participant [PRINT] Signature Date Participant ID

_____ _____ _____

Researcher [PRINT] Signature Date

If you have any questions please contact: Sally Hemming, Principal Investigator Email: s.e.garton@lboro.ac.uk or Dr Fehmidah Munir (Chief Investigator) Email: f.munir@lboro.ac.uk