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**MEALTIMES IN THE CONTEXT OF EATING DISORDERS:
WORKING TOWARDS EVIDENCE-BASED PROTOCOL**

By

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Doctoral Thesis

Submitted in partial fulfilment of the requirements for the award of

Doctor of Philosophy of Loughborough University

2011

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ABSTRACT

Background: Mealtimes are understood to provoke anxiety for individuals with eating disorders. Despite these difficulties associated with eating and the key role weight restoration plays within in-patient treatment, little attention within the literature has focused on investigating the optimum eating environment to encourage greater food intake of those within in-patient care. Contrastingly, within non-clinical research, a vast number of studies have been conducted exploring the implications of the presence of different external stimuli within the eating environment, and their ability to both increase and decrease intake, and alter the mealtime experience. To date, the implementation of mealtimes on eating disorders wards is not evidence-based and there are no standardised guidelines from which to work. **Objectives:** The present thesis has four broad aims: (1) to gather data to inform of current mealtime practices implemented within eating disorders services; (2) to assess staff and service users' experiences of current mealtime practice; (3) to investigate environmental factors in relation to intake and eating psychopathology; and (4) to inform mealtime protocol regarding the possible impact of environmental factors. **Main findings:** A number of findings are presented within the current thesis. First, the variety between the mealtime practices currently implemented within in-patient eating disorders units is presented. Following this, qualitative studies highlight the difficulties associated with mealtimes from the perspective of staff and service users. Additionally, both staff and service user interviews identify the successful approaches used within mealtimes, and offer suggestions for the improvement of their implementation. Finally, the findings suggest that environmental distractions are seen to be capable of altering consumption in a laboratory setting and decreasing anxiety within several clinical case studies. **Implications:** The findings of this thesis provide evidence that environmental factors are capable of decreasing mealtime anxiety, thus increasing ease of intake, amongst those individuals receiving in-patient eating disorders treatment. Recommendations are made as to how units may consider these factors when designing

and implementing mealtime protocols. Further suggestions to clinical practice are made following qualitative findings within this thesis. Lastly, future research is proposed in order to increase the evidence-base of mealtime protocol.

"Doctors aren't supposed to act like you act..."

"It's seeing too much insulted tissue...young men and women in the flower of their youth...bleeding to death without a wound...I think the evil is in the food, in the noise, in the crowding, in the stress, in the water, in the air. I've seen too much of it, Seldom. And it's going to get worse, if we let them carry out their plans. That's why".

The Monkey Wrench Gang, Edward Abbey

ACKNOWLEDGEMENTS

My gratitude goes out to all the staff, service users and participants of the studies within this thesis. Thank you all for taking the time to participate. Thanks also to Dr Newman Leung, with whom I will be forever grateful. Without you I would never have made it here. Thank you for believing in me and for your friendship over many years.

I feel privileged to have worked within the LUCRED team. Thanks for all your support, especially during the last long nights! I am especially grateful for the support of my supervisors, Prof Caroline Meyer and Dr Debbie Wallis. Thank you for devoting so much care and attention to this work. I really appreciate your continued encouragement and excitement for this area of study.

There is no doubt that this thesis would not have been possible without the unconditional support and love from my family and friends. Thank you to everyone who encouraged me on and never forgot about me, even when I was consumed by my work.

Lastly, from the bottom of my heart, thank you to Rory. Your patience, kindness and love guided me through my darkest moments. Here's to the rest of our lives...!

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PUBLICATIONS AND CONFERENCE PRESENTATIONS

Chapters 3 & 4 have been accepted for publication as: Long, S., Wallis, D.J., Leung, N., Arcelus, J., & Meyer, C. (*in press*). Mealtimes on eating disorder wards: A two study investigation. *International Journal of Eating Disorders*, DOI: 10.1002/eat.20916.

Chapter 5 has been accepted as: Long, S., Wallis, D., Leung, N., & Meyer, C. (*in press*). “All eyes are on you”: anorexia nervosa patient perspectives on in-patient mealtimes. *Journal of Health Psychology*, DOI: 10.1177/1359105311419270.

Chapters 4 & 5 have been presented at the 9th London International Eating Disorders Conference, London. March, 2010.

Chapters 3 & 4 have been presented at the 10th London International Eating Disorders Conference, London. March, 2011.

Chapter 7 has been accepted for publication as: Long, S., Meyer, C., Leung, N., & Wallis, D.J. (2011). Effects of distraction and focused attention on actual and perceived food intake in females with non-clinical eating psychopathology. *Appetite*, 56(2), 350-356.

Chapter 1 : Literature review

Mealtimes on eating disorders units

Chapter 1 - Mealtimes on eating disorders units: A review of the associated literature

1.1 Aims of literature review

The following literature review had a number of aims. First, to provide a general introduction to anorexia nervosa, bulimia nervosa and eating disorders not otherwise specified (hereafter referred to as anorexia, bulimia and EDNOS). Following this, an overview of the importance of mealtimes for those with eating disorders is given, including a critical evaluation of published mealtime guidelines and in-patient mealtime interventions or initiatives for those with eating disorders. Second, relevant factors which have been found in non-clinical populations to influence meal intake and the mealtime experience will be outlined. Third, implications of the non-clinical mealtime literature will be considered in relation to those with eating disorders, with a focus on highlighting gaps within the eating disorders literature.

The overall purpose of the literature review was to provide the background for the research questions addressed within this thesis. There were three primary research questions. First, how are meals implemented on in-patient eating disorders units? Second, how do staff and service users experience such mealtimes? Finally, what is the effect of the environment, specifically distraction, on the eating behaviour and mealtime experience of those with high and low levels of eating psychopathology?

1.2 Search strategy

The search strategy for this present thesis was conducted in two parts. First, the search terms connected to the research questions of the current thesis were identified, including 'eating', 'anorexia', 'bulimia', 'meal', 'intake', 'prandial', 're-feeding', 'environment', 'distraction' and 'context'. These were then searched for within major journal databases, such as 'PsycINFO', 'ScienceDirect' and 'Web of Science' in order to locate relevant past research. In order to find all variations of a word during the database searches, asterisks ('wildcards') were used. For example, when 'meal*' was inputted, published studies containing the words 'meals' and 'mealtimes' were retrieved. In addition,

connectors and quotation marks were used to increase the relevance of searches (e.g., 'environment* AND "eating disorders" OR anorexia'). Second, all studies that had been retrieved through the searches were systematically searched for any studies, contained within their reference list or their citations, which had not been found during the initial database search. Searches of the above terms began during July 2008 and continued until February 2011.

1.3 Introduction to the eating disorders

The National Institute for Health and Clinical Excellence (NICE, 2004) define the possible symptoms of eating disorders to be physical, psychological and/or social. Likewise, Fairburn and Walsh (2002) described eating disorders to be, "*a persistent disturbance of eating behaviour or behaviour intended to control weight, which significantly impairs physical health or psychological functioning*" (p.171). Descriptions similar to what is now understood to be anorexia can be seen throughout history. The first medical description of anorexia is generally cited as having been provided by Richard Morton, an English physician who noted a woman to have symptoms of, what is now described as, anorexia in 1689 (Pearce, 2004). However, it was Sir William Gull who wrote of the key clinical characteristics of the condition in 1874. He coined the term 'anorexia' after the Greek for 'lack of desire to eat', although that is now generally accepted as a misguided description. In his writings, Gull (1874) drew attention to the conditions of a number of women who suffered from severe emaciation, amenorrhoea and an apparent refusal to co-operate with treatment, all factors now commonly associated with eating disorders (Bruch, 1977).

It was not until the twentieth century that bulimia, as it is now recognised, was first described (DSM-III: American Psychiatric Association, 1980), although, in 1979, the British psychiatrist Gerald Russell had noted the key clinical features of bulimia in a number of his patients. The last group of eating disorders to receive recognition encompass those individuals whose symptoms fail to reach the clinical level attributed to either anorexia or bulimia (Fairburn & Harrison, 2003). Although this group is considered

'atypical' and referred to as eating disorders not otherwise specified (EDNOS), Fairburn and Walsh (2002) proposed that in fact 30-60% of all those individuals receiving treatment for eating disorders could be described as being part of this group.

1.3.1 Diagnostic criteria

The most commonly referred to definitions of anorexia are those proposed by the Diagnostic and Statistical Manual of Mental Disorders, currently in its fourth edition (DSM-IV-TR: American Psychiatric Association, 2004). Although possible changes could be about to take place with the development of the next DSM edition (V) in 2013 (Fairburn, Cooper, Bohn, O'Connor, Doll & Palmer, 2007; Walsh & Sysko 2009), the classification system currently recognises three broad categories of eating disorders; anorexia, bulimia and EDNOS (DSM-IV-TR: American Psychiatric Association, 2004).

1.3.1.1 *Diagnostic criteria for anorexia (DSM-IV-TR: American Psychiatric Association, 2004)*

- A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected)
- B. Intense fear of gaining weight or becoming fat, even though underweight
- C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight
- D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles

The current diagnosis of anorexia is split into two subtypes: restricting type and binge-eating / purging type, with the exclusion and inclusion respectively of regular episodes of binge eating or purging behaviour, (including vomiting, laxative use, fasting or excessive exercise).

1.3.1.2 *Diagnostic criteria for bulimia (DSM-IV-TR: American Psychiatric Association, 2004)*

- A. Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following
 - Eating, in a fixed period of time, an amount of food that is definitely larger than most people would eat under similar circumstances. Mainly eating binge foods
 - A lack of control over eating during the episode: a feeling that one cannot stop eating or control what or how much one is eating
- B. Recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise
- C. The binge eating and inappropriate compensatory behaviours both occur, on average, at least twice a week for 3 months
- D. Self-evaluation is unduly influenced by body shape and weight
- E. The disturbance does not occur exclusively during episodes of anorexia

There are two current categories of bulimia. First, purging type bulimia wherein individuals self-induce vomiting, consume laxatives and/or diuretics, or self-administer enemas. Second, non-purging types who are characterised by exercise or fasting behaviours following a binge in an attempt to compensate for previous caloric intake.

1.3.1.3 *Diagnostic criteria for EDNOS (DSM-IV-TR: American Psychiatric Association, 2004)*

Lastly, eating disorders not otherwise specified (EDNOS) are described as disordered eating that does not meet the criteria for anorexia or bulimia. Commonly cited examples include when, for females, all of the criteria for anorexia are met except that the individual has regular menses and when an individual reports purging less than the required regularity to meet diagnosis of bulimia.

1.3.2 Incidence and prevalence

Currin, Schmidt, Treasure and Jick (2005) reported the incidence rates within primary care to be 4.7 for anorexia and 6.6 for bulimia per 100,000 cases. Additionally, the prevalence rate for anorexia has been quoted as 0.3% for anorexia and 1% for bulimia among young females (Hoek, 2006). Eating disorders are more prevalent in women, with women in the general population being 10 times more likely to be diagnosed with eating disorders than men (Zhang & Snowden, 1999), with the peak period of onset between the ages of fifteen to nineteen years old (Reijonen, Pratt, Patel & Greydanus, 2003). Younger adolescents are more likely to develop symptoms of anorexia and older adolescents (ages 17 to 21) are more likely to present with symptoms of bulimia, with early detection of symptoms often complicated by factors associated with the normal growth and development of this age range (Reijonen et al., 2003). In recent decades, the frequency of reported occurrences of eating disorders have greatly increased (e.g., Fassino, Pierò, Gramaglia, & Abbate-Daga, 2004; Keski-Rahkonen et al., 2007). Moreover, anorexia is associated with one of the highest mortality rates of all psychiatric illnesses (Papadopoulos, Ekblom, Brandt & Ekselius, 2009), with a range of reported mortality rates between 5 and 22% (Neiderman, 2000; Signorini et al., 2006).

1.3.3 Definitions and diagnostic issues

Eating disorders have traditionally been categorised within the framework of a medical model which considers them to be one of a range of psychiatric illness. Currently, as mentioned in the above section 1.3.1, those with clinical eating difficulties are categorised as having anorexia, bulimia, or EDNOS (DSM-IV-TR, American Psychiatric Association: APA, 2004). With the DSM-IV-TR (American Psychiatric Association: APA, 2004) soon to be republished, those in the field have begun discussions regarding alterations which could be made to improve classification of those with eating disorders. For example, Grave, Calugi and Marchesini (2008) have questioned the clinical necessity of including amenorrhea in the criteria for anorexia, whilst Becker, Thomas and Pike (2009) have asked whether there should be an inclusion of 'non-fat phobic' individuals in

the category of anorexia. Moreover, alternative classification systems have also been suggested, such as that by Walsh and Sysko (2009). They stated that, given the most commonly received clinical diagnostic is that of EDNOS, advances should be made to attempt to reduce the number of individuals given this diagnosis. Instead, the authors propose the Broad Categories for the Diagnosis of Eating Disorders, stating the other categories could be extended to include behaviourally similar disorders, whilst retaining the 'classic' categories. Similarly, Fairburn et al. (2003) have suggested that the categorisation of those with eating disorders changes to a transdiagnostic approach. Fairburn et al. (2003) offer this as an attempt to integrate the largest categorised group, eating disorders not otherwise specified, by looking at eating disorders as a single category whereby overlapping behavioural and psychological dimensions exist. Following this Waller (2008) goes a step further, stating that all eating disorders should be relocated into a broader 'anxiety disorders' category. The updated categorisation remains to be seen, with the revised version, the DSM-V, due to be released in May 2013.

Alongside the above medical model, anti- and critical psychiatric and psychological approaches have presented an alternative understanding of mental disturbances such as eating disorders. For example, Thomas Szasz argued, in 1960, that mental illnesses were 'myths' which were unhelpful in aiding our understanding of experience. Instead, Szasz (1960) stated that individuals only experience problems of living with either biological, economic, political or sociopsychological roots. More recently, this view has been promoted by individuals such as Moncrieff (2009), who have argued that psychiatric drug intervention only goes to dampen experience rather than, as popularly thought, alter a chemical imbalance. This view that mental health difficulties are on a continuum with 'normal' experience provides an interesting viewpoint. However, due to the clinical focus of this thesis and the prevailing medical approach of treatment, no further examination of these alternative views will be made within the following research chapters.

1.3.4 Treatment outcomes

The National Institute for Health and Clinical Excellence (NICE, 2004) advise that individuals with bulimia should generally be treated within out-patient services (unless potassium levels have fallen below a 3.0 mmol per litre: Mehler, 2003), whereas individuals with anorexia may benefit from receiving either in-, out-, or day-patient services. The level of treatment received is dependent on such considerations as level of risk, psychological factors and the preference of the individual.

For those with bulimia, Cognitive Behavioural Therapy (CBT) is reported to be the most effective treatment (Wilson, Fairburn & Agras, 1997), with relapse rates after CBT treatment reported as lower than those reported following medicated treatment (Agras et al., 2000). However, in regards to the treatment of anorexia, it has been noted that no one psychological therapy has been found to be superior to another (e.g., Bachar, Latzer, Kreitler & Berry, 1999; Dare, Eisler, Russell, Treasure & Dodge, 2001).

The percentage of individuals estimated to recover fully from their disordered eating after at least ten years has been reported to be around 75% for those previously diagnosed with bulimia and only 50% for those previously diagnosed with anorexia (Keel & Brown, 2010). Consequently, treatment outcomes (i.e., weight gain/number of people recovered) have been described as relatively poor compared to other psychiatric conditions (Steinhausen, 2002). In addition, evidence has shown that up to two thirds of those originally diagnosed with anorexia go on to later develop bulimia (e.g., Eddy et al., 2002).

Steinglass et al. (2011) have recently argued that the high relapse rates presented by those treated for anorexia signal that acute weight restoration is only a first step. Instead they argue that there is a need to increase understanding of the factors associated with the persistence of dysfunctional eating behaviour after the weight restoration. Likewise, although many psychological symptoms have been shown to improve with weight gain, often to within normal limits (Attia, Haiman, Walsh & Flater, 1998), significant problems with food choice, caloric intake and eating behaviour have

been shown to persist (Hatch et al., 2009; Nilsson, Gillberg, Gillberg & Råstam, 1999; Steinglass, 2010; Sysko, Walsh, Schebendach & Wilson, 2005). Due to a combination of the above factors, it has been noted that relapse prevention following discharge from eating disorders services presents a considerable challenge (e.g., Cockell, Zaitsoff & Geller, 2004).

1.4 Mealtimes on eating disorders units

Weight restoration and the normalisation of eating behaviour are considered key goals within the treatment of in-patients on eating disorders units (Geller, Williams & Srikaneswaran, 2001). Indeed such factors have been seen to predict clinical outcome in anorexia (e.g., Lund et al., 2009). However, for an individual with an eating disorder, the sight of food, and thus mealtimes in general, are likely to provoke high levels of negative emotion, including anxiety, fear and disgust (e.g., Breiner, 2003; Harvey, Troop, Treasure, & Murphy, 2002). Furthermore, anxieties associated with eating are also known to persist after the disorder has ceased (NICE, 2004; Steinglass et al., 2011).

In addition to anxiety, whilst eating, individuals with eating disorders are also prone to experience unpleasant physical sensations, such as abdominal pain and bloating due to the delayed gastric emptying that can accompany the malnutrition of anorexia (Sharp & Freeman, 1993). As a consequence of the combination of the above mentioned psychological and physical factors, along with the abnormal cognitions and beliefs typical of eating disorders, individuals with anorexia have been observed to exhibit abnormal eating behaviours, such as the manipulation and concealment of food (e.g., Tappe, Gerberg, Shide, Rolls & Andersen, 1998). In addition, differences between individuals with and without eating disorders have been observed in the duration of meals, the rate of eating, pauses during meals, and pre- and post-meal hunger and satiety levels (e.g., Rolls et al., 2002; Sunday & Halmi, 1996).

Despite the difficulties that mealtimes present, and the importance they are given within the treatment of those with eating disorders, no standardised guidelines exist for the implementation of in-patient mealtimes. The Hospital Caterers Association (2004)

recommend that all hospital wards (including general medical) implement a 'protected mealtime' policy, wherein interruptions are limited during mealtimes and dining rooms are kept clean and tidy. However the implementation of such a policy within the treatment of those with eating disorders has not been specifically considered. This lack of standardisation of mealtime care has been raised as a considerable concern (Prestwood, 2009). Indeed, to date, only one study has considered the range of mealtime treatments implemented on different eating disorders units. Gowers et al. (2002) gathered information as to the types of treatment offered across a range of European eating disorders units. The authors found there to be variations in adolescent in-patient mealtime treatment, acknowledging that "*in the absence of comprehensive treatment trials for adolescent AN, most rely on clinical judgement and experience*" (p. 280). Specifically, they found that 10 out of 11 units surveyed encouraged service users to eat together during meals. However mealtime practices also differed substantially; of the 11 units, only 6 reported that staff ate alongside service users, 6 reported using supplements, and just 4 of them allowed service users to be involved with meal preparation. Unfortunately, the published results of this study do not distinguish which practices are employed within each country.

The following sub-sections of this literature review go on to discuss the various guidelines and studies which have considered the implementation of mealtime care within eating disorders units. As mentioned above, it is possible that the anxieties and discomfort associated with eating and mealtimes that are experienced by those with eating disorders can occur before, during and/or after mealtimes (e.g., Harvey et al., 2002; Sharp & Freeman, 1993; Steinglass et al., 2011). The following literature review considers mealtime interventions and initiatives from these three time points.

1.4.1 Mealtime interventions and initiatives

A literature review of the area provided evidence of ten published studies which have attempted to evaluate different mealtime interventions administered during in-patient eating disorders care. These studies can be broadly categorised into three areas: those relating to the mealtime preparation, those implemented during the meal itself and those

administered after the meal. In addition to these published studies, three unpublished initiatives were identified via general searches on the internet (using the search engine Google), which have been reported as providing novel approaches to mealtimes for those with eating disorders. One involved occupational therapy-led cookery groups, a second describes individuals with eating disorders who worked at a restaurant catering especially for others with eating difficulties and another wherein individuals with eating disorders provided meals for users of a homeless shelter. These initiatives, together with the ten identified published intervention studies, will be explored in turn within the following sections.

1.4.1.1 Pre-meal interventions and initiatives

The one published study addressing the involvement of service users in the preparation of their meals was found to be that of Conkin, Whaley, Cangas and Mills (1998). They published results of a points-based menu system used within an in-patient eating disorders unit. With this novel intervention, different foods were assigned a number of points depending on their caloric content. Using these assigned points, service users were given the freedom to choose their meals. Unfortunately, a detailed and controlled evaluation of this clinical initiative was never conducted, therefore severely limiting the robustness of such an approach.

In addition to Conkin et al. (1998), three unpublished initiatives relevant to the preparation of meals by individuals with eating disorders have been reported. First, a clinical initiative was presented by Lock (2009), who developed the Eating and Meal Preparation Skills Assessment (EMPSA) tool for use during occupational therapy-led pre-meal sessions. As part of this, Lock (2009) promoted the involvement of service users at all levels of meal preparation, including meal planning, shopping and cooking. Although the aim of the EMPSA is to enable standardisation of cooking interventions and outcome evaluation, to date, details of such methods and results have not been published. Another initiative involving meal preparation is that of a restaurant in Berlin called Sehnsucht (German for 'longing') (see Elkins, 2004 for a review). This project was set up by an

individual who had previously been treated for anorexia and was staffed by people with a range of eating disorders. The aim of the restaurant was to appeal to those with disordered eating, in an attempt to make eating out a sociable and enjoyable experience. Although receiving international public interest (e.g., Elkins, 2004), as with Lock (2009), no formal analysis has been conducted to evaluate the success of Sehnsucht. Lastly, as before, without formal evaluation or even publication a 'Real Meals' project has been set up in America by Rago and Associates (unpublished). This initiative encouraged individuals receiving treatment for eating disorders to shop and cook meals for a local homeless shelter.

Although the importance of addressing pre-meal anxieties suffered by those with eating disorders has been recently acknowledged (Steinglass et al., 2011), as can be seen from the above section, few studies have addressed this area within research. Furthermore, regarding the lay and clinical initiatives which have been implemented, there appear to be severe limitations due to methodological shortfalls and the absence, or low standard of, formal evaluation.

1.4.1.2 Interventions implemented during meals

Studies have been conducted which have involved interventions during the mealtimes of people with eating disorders. A recent quasi-experimental research study by Vandereycken and Vansteenkiste (2009) found that there was a link between the amount of choice people were given over their care (e.g., whether or not to gain weight, eat or stay within the treatment program) and their likelihood of discharging themselves from treatment. They compared the drop-out rates of in-patients treated with a novel treatment initiative (wherein personal choice was maximised and focus was placed on giving responsibility to change on the individual), with those who had received the 'old style' traditional treatment (e.g., standardised meals, staff and family motivation used to encourage adherence to treatment program). As part of the 'new style' treatment, in-patients had the freedom to eat as much or as little of their meals as they liked, with no dissuasion against purging behaviour. Although favourable results were found for short

term drop-out rates, with fewer service users discharging themselves when treated with the 'new style' approach, no differences were seen for longer term outcome measures or weight gain. Moreover, it remains unclear as to whether the favourable results were due to the change in mealtime protocol or if it was a result of another aspect of the adapted program.

Another relevant study, which has also received criticism, is that of Bergh, Brodin, Lindberg and Södersten, (2002) who promoted the success of their Karolinska model of treatment. They conducted a randomised controlled study in which in-patients and out-patients were taught to eat in front of a 'Mandometer'. This was a piece of equipment which was able to monitor the weight of food as it was eaten, whilst recording participants' self-reported satiety ratings. The study encouraged individuals to eat at the rate being shown on the monitor, whilst showing them a hypothetical curve of normal satiety. By adapting the curve of the eating rate shown, the Mandometer was seen to be able to encourage service users with anorexia to eat progressively more each meal. Following this treatment, to restrict compensatory hyperactivity and limit anxiety, individuals were encouraged to spend one hour in a warm room. If individuals completed the intervention, they were given rewards, such as going out with friends. Eating disorders psychopathology was found to decrease, whilst levels of social involvement were reported to increase for those in the treatment group compared to a control group. Evaluation of the Karolinska model can, however, be subject to criticism. For example, the internal validity is reduced due to the manipulation of too great a number of variables, such as receiving one-to-one support from a member of staff, whilst using novel equipment and eating in an isolated room. As has been suggested (Schmidt, 2003), further scrutiny of the workings of the Mandometer for use within in-patient units is currently being undertaken (e.g., Ioakimidis, Zandian, Bergh & Södersten, 2009).

Although arguably limited in its evaluation of the findings, one particularly interesting study regarding mealtime management was published by Sandy, Chernecki and Leichner (2007). They altered their traditional hospital implementation of meals, within

a children's eating disorder program, to one more reminiscent of a cafeteria-style, by introducing self-service of food. Additionally, children receiving the in-patient treatment were encouraged to handle portioning and help with clearing up after meals. The authors postulated that service users would be more able to transfer necessary skills when discharged from the unit if they had been encouraged to build a sense of efficacy and competency from the effective interaction with their mealtime environment. Sandy et al. (2007) concluded that service users, once over their initial feelings of apprehension, fear, and nervousness towards a new style of mealtime, viewed the new mealtime style in a positive light and gained confidence managing their meals. Although the views of the service users were sought, no further empirical evaluation on the change in mealtime practices was undertaken.

Another recent study conducted by Couturier and Mahmood (2009) recorded the success of supportive mealtime therapy in reducing nasogastric feeding in patients with anorexia. Their mealtime protocol documented staff supervision with an emphasis on empathy and understanding of service users, alongside the setting of firm limits about what must be eaten within the given timeframe. Distraction was used in the form of conversation or by playing interactive games, whilst discussion of food, calories and dieting, including personal eating disordered thoughts was discouraged. After meals, service users were encouraged to sit together at one table with support provided by at least one staff member. However, Couturier and Mahmood (2009) admitted that it was not clear as to what degree each of the variables contributed to the success of the treatment. For example, a key component could have been service users eating their meals in close proximity to each other. Alternatively, success may have been dependent on the supportive comments made by staff members. It was concluded that the individual elements should be randomly assigned in future studies.

Another clinical approach has been that developed by Fairburn, Cooper and Shafran (2008). The authors developed an 'enhanced' approach to cognitive-behavioural therapy (CBT-E) to be used within in-patient settings. This involved an 'assisted eating'

phase, wherein guidelines were provided to staff on certain aspects of mealtime protocol. The program was overseen by a dietician, and a personalised plan was developed to tackle the areas in which the individual was considered to be struggling. Service users ate three meals and a snack a day whilst receiving CBT-E from the dietician who was also present with them in the dining room. Therapeutic techniques such as education, support, de-centering from automatic thoughts, discouragement from ritualistic behaviours, and distraction were also used, as was deemed appropriate for each individual. After each meal, individuals are encouraged to sit for an hour. Additionally, there is an emphasis on service users being part of their eating development, which involves setting their goal body mass index (BMI) and controlling certain aspects of their diet. After the assisted eating phase, service users plan their meals and are encouraged to eat independently of supervision and sitting time. This CBT-E approach has been shown to have a degree of successful application for individuals with bulimia and EDNOS (Fairburn et al., 2008). However, its use with individuals receiving in-patient treatment for anorexia remains to be fully evaluated (Karbasi, 2010).

Another type of treatment for use during eating is Exposure and Response Prevention therapy, advocated for use with individuals with anorexia by Steinglass et al. (2010). This treatment involves deliberate exposure to feared foods and feared eating situations whilst actively confronting associated anxiety experienced. The therapist's role is to educate the individual of how their fears maintain their eating disorder. Steinglass et al (2010) reported the use of techniques such as attending to physical sensations created by the anxiety and focusing on relaxing control by encouraging individuals to keep their eyes closed during eating. Although preliminary trials have been conducted with good results (Steinglass et al., 2007), Steinglass et al (2010) admits that further studies must be conducted in order to evaluate the efficacy of Exposure and Response Prevention therapy in maintaining food intake and avoiding relapse for those with eating disorders.

Lastly, Treasure, Macare, Mentxaka and Harrison (2010) recently conducted a pilot study trialling the use of an audio / visual 'vodcast'. This was an imagery-based

intervention designed to target eating-related psychopathology and to support intake (i.e., reduce mealtime anxiety and increase consumption and motivation). They offered four individuals with anorexia a 'vodcast' whilst drinking a smoothie. Treasure et al. (2010) found that participants in the vodcast condition drank more of a smoothie, at a quicker rate, compared with when in a control condition. As identified by the authors (Treasure et al., 2010), the study had only a small sample size (having focused on four case studies) and consequently can only be viewed as a pilot study of the vodcast intervention.

The above subsection of the current literature review demonstrates that, as with pre-meal initiatives, those studies which have focused on interventions during mealtimes can be viewed as limited. The studies that have been conducted can be criticised for their small sample size (e.g., Treasure et al., 2010), their lack of control conditions (e.g., Sandy et al., 2007) or their manipulation of too great a number of variables (e.g., Couturier & Mahmood, 2009). In light of the importance of mealtimes within the care of individuals with eating disorders, it is apparent that future work needs to consider this area.

1.4.1.3 *Post-meal interventions*

The two studies to have been published that focus on post-meal interventions on in-patient eating disorders units are grounded in the appreciation of sufferers' experience of postprandial anxiety. Firstly, a study by Breiner (2003) described the use of post-meal distraction techniques, such as bracelet making and various art projects, with young in-patients of an eating disorders unit. However, these distraction activities were implemented after service users were encouraged to sit and 'relax' following the completion of their meals, therefore they were not actually undertaken immediately after meals. Alongside this limitation, no formal evaluations of the techniques used were conducted other than briefly reporting positive feedback to have been received from service users and members of the eating disorder team.

As an alternative to the above distraction techniques, Shapiro et al. (2008) conducted a study wherein service users received post-meal relaxation training. They compared the effectiveness of progressive muscle relaxation, guided imagery, and self-

directed relaxation to a control condition. The authors found all relaxation interventions to produce positive results such as, reduced anxiety and decreased self-reported thoughts related to weight gain when comparing pre- to post-meal data from each session. However, the authors also found similarly positive outcomes for those receiving the control intervention (during which service users were encouraged to participate in an activity of their choice such as reading or art). This signifies an obvious limitation of this study, in that the control condition may not have actually constituted a valid control condition, as the activities chosen may have been similar to the relaxation exercises offered. In recognition of this limitation, future studies should consider relaxation techniques alongside control conditions wherein participants self-report their level of relaxation, so that direct comparisons can be made.

1.4.1.4 *Summary of mealtime intervention studies and initiatives*

The section above outlines a range of studies which have been conducted in relation to the mealtimes of those with eating disorders. It can be seen that significant results have been reported when adapting certain factors associated with mealtimes, such as increasing service users' involvement (e.g., Conkin et al., 1998) and offering post-meal activities (e.g., Breiner, 2003). However, the research addressing such mealtime interventions and clinical initiatives is scarce. Furthermore, the majority of studies conducted appear to suffer methodological limitations, namely, not conducting formal evaluations and failing to compare interventions with controls. With the lack of research that has been conducted within the area of mealtimes, the following section will address the guidelines that have been produced for those within the field.

1.4.2 Guidelines relating to mealtimes

The aim of this section is to give an overview of the various guidelines that have been produced and disseminated addressing (either directly or indirectly) the way in which meals are implemented for individuals with eating disorders. As is discussed in the following sub-sections, no evidence-based guidelines have been published which specifically deal with the implementation of in-patient eating disorders meals. It is

acknowledged by the author that within different eating disorders units, guidelines may be in use which are based on clinical expertise and experience. The following critique of this area of care is not meant to be dismissive of clinical experience, indeed the benefits of guidelines based on such have been observed (e.g., Cairns, Styles & Leichner, 2007). Nevertheless, the lack of standardisation and shared expert knowledge has been considered by practitioners within the field to be worthy of consideration (e.g., Prestwood, 2009).

The following sub-sections will be divided according to the audience to which the guidelines have been targeted. First, the *clinical* guidelines, developed for the in-patient care of individuals with eating disorders will be outlined. Although these are not mealtime guidelines per se, they do make reference to feeding. Second, a selection of the *non-clinical* guidelines, which have been developed for families and carers providing meals for individuals with eating disorders, will be discussed.

1.4.2.1 *In-patient mealtime guidelines*

Two sets of guidelines have been produced advising on the management of in-patients of eating disorders units, one from the National Institute of Health and Clinical Excellence (NICE, 2004), the other from the American Psychiatric Association (APA, 2006). Although neither provides detailed descriptions specifically of the implementation of mealtime care, they do present evidenced-based advice related to factors associated with mealtimes, such as necessary caloric intake and treatment goals related to eating. Both guidelines will be discussed in turn below.

The NICE guidelines (NICE, 2004) were written with input from a multidisciplinary group of healthcare professionals and individuals with personal experience of eating disorders in order to advise on the identification, treatment and management of the eating disorders. They acknowledged that, "*at the present time, there are wide variations in the provision of eating disorder services and models of service delivery throughout the UK....specialist eating disorders services...vary widely in staffing, service configuration and therapeutic interventions offered*" (p. 31). However, factors such as the lack of high

quality research and the need to provide unique individual treatment, led the NICE guidelines (NICE, 2004) to stress that professional knowledge and clinical judgment must be used alongside the guidance. In terms of general in-patient treatment, individual therapies, such as cognitive behaviour therapy, were reported to be the best researched, although these were more evidence based for bulimia than for anorexia (Treasure & Schmidt, 2002). Alongside this, other psychological therapies, such as supportive psychotherapy and interpersonal psychotherapy, cognitive analytic therapy and dialectical behaviour therapy were mentioned to be potentially useful in certain instances (Treasure & Schmidt, 2002). In relation to mealtimes, the guidelines state that the aims of any psychological treatment should be to encourage weight gain, healthy eating and reduce other symptoms related to an eating disorder, along with facilitating psychological and physical recovery. The NICE guidelines (NICE, 2004) recommend that most service users with anorexia should be physically monitored, with goals of an average weekly weight gain of 0.5 to 1 kg in in-patient settings, requiring about 3500 to 7000 extra calories a week. In some cases this may require extra oral multi-vitamin/multi-mineral supplements, however, for whom or when is left ambiguous. It is noted that feeding against the will of service users should only be undertaken as a last resort, as it is a highly specialised procedure with important legal and ethical considerations. For example, it may be deemed necessary to force feed an individual who is malnourished and considered unable to give their consent due to their reduced mental capacity. However, this is to be regularly reviewed and withdrawn as soon as the individual is deemed able to undertake regular feeding methods. However, specific recommendations for mealtime care are not made, apart from mentioning that rigid in-patient behaviour modification programmes should not be used, although this is rather vague. Despite the lack of specific guidance regarding the implementation of mealtime care, provided by the NICE guidelines (NICE, 2004), attention is drawn to possible complications brought about by eating disorders which need to be considered when meals are implemented. For example, the need to consider dietary imbalances, such as re-feeding syndrome (a metabolic disturbance which can occur as a

result of increased nutrition in those who are starved or severely malnourished which can result in cardiovascular collapse).

The second set of published clinical guidelines which can be seen to relate to the implementation of in-patient eating disorders mealtimes are those of the APA (APA, 2006). Although they have come up against some criticism (Wilson & Agras, 2001), these practice guidelines, similarly to the NICE guidelines (NICE, 2004), state that in general a variety of eating disorders management models are used, with little data existing as to their comparative efficacies. In relation to mealtimes, however, aims of treatment are said to include restoration of the service user to a healthy weight, increased service user motivation to engage in healthy eating patterns, the provision of nutritional advice, along with addressing the dysfunctional cognitions and attitudes of the service user. Suggested weight gain is set slightly higher than the UK guidelines (NICE, 2004), at between 0.9-1.4 kg a week for in-patients. In terms of specific guidance on mealtime care provisions, as with the guidelines from NICE (2004), the detail given by the APA guidelines (APA, 2006) is limited. The extent of mealtime protocol advice provided is that dietitians should work with service users to choose their meals, within the framework of a nutritionally balanced structured meal plan, possibly requiring extra supplementation. A wide-ranging menu is advised in order to avoid the commonly seen severely restricted food choices. Plus, it is advised that intake should usually start at 7,000 - 11,200 total calories per week, although this has to be tailored to the individual, as factors such as delayed gastric emptying may initially impair service users' ability to tolerate such intake. In the case of feeding against the will of service users, nasogastric feeding is considered preferable to intravenous feedings. As is highlighted by NICE (NICE, 2004), the APA guidelines (APA, 2006) stress the importance of nutritional factors within meals, with recommendations informed by evidence (e.g., Imbierowicz et al., 2002). Specifically, it is acknowledged that close monitoring of individuals is necessary during the re-feeding of in-patients with eating disorders (Winston, 2005).

It appears clear that both the NICE guidelines (NICE, 2004) and those from the APA (APA, 2006) are limited in their guidance directly relating to the implementation of mealtime care on in-patient units. This lack of advice to aid staff in their care for individuals during mealtimes highlights the dearth of evidence-based rationale that exists for this area of care.

1.4.2.2 *Guidelines developed for families and carers*

In contrast to the lack of detailed advice available for staff of in-patient units noted above, within the last decade, there has been an increased focus on the dissemination of mealtime-specific guidelines from clinical practice to the families and carers of eating disorders sufferers (e.g., Jaffa, Honig, Farmer & Dilley, 2002; Leichner, Hall & Calderon, 2005). This increase in the dissemination of guidelines appear to have mainly come about due to studies voicing the opinions of the families and carers of those with eating disorders requesting help in commonly difficult areas such as mealtimes (e.g., Haigh & Treasure, 2003; Perkins, Winn, Murray, Murphy & Schmidt, 2004). Additionally, guidelines have been produced following acknowledgement of the hardship individuals with eating disorders can face when providing food for others, i.e. mothers with eating disorders cooking for their children (Bryant-Waugh, Turner, East & Gamble, 2007). Four examples of different mealtime guidelines that have been developed and published are described below.

Rhodes (2003) published an article based upon the Maudsley model of family therapy, wherein it is claimed that families could benefit from being involved in their child's mealtime whilst they are receiving treatment. These guidelines suggest that parents with children suffering from eating disorders could take part in 'picnics', during which parents are encouraged to speak in a "*monotonous voice insisting that their daughter eats*" (p. 193). Although advice is given, there is an emphasis on leaving detail of structure and implementation to the parents' best judgment. Whilst the Maudsley model has been empirically supported (e.g., Lock, le Grange, Agras & Dare, 2001), the specific guidelines

for the support given during mealtimes appear not to have been derived from an empirical evidence-base.

Another mealtime support package has been offered by Leichner et al., (2005). This one included a DVD/video, concerning the implementation of mealtimes by friends and families of individuals with eating disorders. The package advised such things as parents or carers should not eat 'diet food' (i.e., food labelled as diet or low fat) or display either negative attitudes towards food or their own body image. The authors also stressed the importance of involving the child in setting their own goals of normalising their eating behaviour, and avoiding unhelpful strategies like forcing eating and using guilt. This mealtime support training DVD/video was later evaluated by Cairns et al. (2007). Using a questionnaire containing both open and closed questions, the authors concluded that the section of the DVD/video reported to be the most informative was when a service user was observed talking about their experience of mealtimes, such as feelings lasting beyond the end of the meal. Although the training package has been evaluated (Cairns et al., 2007), the original paper (Leichner et al., 2005) fails to specify how the content of the package was developed, other than to state that it was written in collaboration with service users and their parents.

The McMasters Children's Hospital guidelines (unpublished) suggested to parents that they should divert the attention of their child during mealtimes, using such things as conversation or puzzles. They discourage parents from engaging in discussion related to food or weight whilst offering firm and empathetic encouragement. They also highlight the importance of creating a positive, structured environment with music and attempting to limit the rushing to complete a meal. As in the DVD/video produced by Leichner et al. (2005), the McMasters Children's Hospital guidelines (unpublished) acknowledged the post-meal period to be particularly anxiety provoking, therefore again distractions are encouraged. Also similarly to the above mentioned guidelines, the McMasters Children's Hospital guidelines (unpublished) appear to be based on clinical experience alone.

Parents are also advised by Great Ormond Street Hospital guidelines (unpublished) to agree a meal-plan prior to eating. Similarly to those guidelines presented by the McMasters Children's Hospital guidelines (unpublished), information advises the use of distraction and limiting conversation around the topic of food and dieting. They acknowledge that for some it is preferable to eat alone, and for others a family mealtime setting is more beneficial. Gentle, clear prompting is advised when the young person is starting their meal, and should continue during eating. In addition to these guidelines, recommendations are given for those present to act as role models by eating balanced meals and being aware of one's eating behaviours. The guidelines outline possible anorexic behaviours during a meal, and suggest that set times for meals should be used to combat these.

The above four examples demonstrate the differing mealtime advice which is offered to parents and carers of those with eating disorders, as identified by individual units. It is true that, in some cases, such guidelines have been suggested to aid the implementation of mealtimes (e.g., by increasing the confidence of carers: Cairns et al., 2007). However, their reliance on clinical expertise over empirical evidenced-based knowledge could be seen to overshadow the need to scrutinise such advice as has been deemed necessary in other areas (e.g., Bhadoria, Webb & Morgan, 2010).

1.4.2.3 Summary of mealtime guidelines

The aforementioned section outlines the published clinical mealtime guidelines that exist for use by staff of in-patient units. Additionally to these, examples are also given of mealtime support guidelines produced for families and carers of individuals with eating disorders. Despite the importance of mealtimes within the treatment of those with eating disorders, a variety of guidelines have been produced which vary in content and, although are based within clinical expertise, have a lack of empirical support. Indeed, Fairburn (2005) recognised that treatment is hampered by a lack of empirical support, noting that variation currently exists between the treatments received on in-patient units. He commented that, whilst this was intriguing, the variation between treatments is far from

purposeful. In addition, it would appear that the majority of published guidelines refer to giving advice and support to families of children with anorexia. However a scarcity of advice appears to be available for those caring for older individuals, or indeed guidelines for individuals with eating disorders to use themselves.

1.4.3 Summary of mealtimes within eating disorders units

In summary, three important points regarding mealtimes for those with eating disorders are presented within this section of the current thesis. First, it is acknowledged that mealtimes are of particular importance to the care and recovery of individuals with eating disorders (e.g., Geller et al., 2001; Lund et al., 2009). It therefore follows that research within this area is required. The line of reason being that if treatment outcome for anorexia is poor (Schebendach et al., 2008; Steinhausen, 2002) and links have been suggested between outcome and care received at mealtimes (Lund et al., 2009), then attention should be directed towards the evidence-based implementation of in-patient mealtime interventions. This premise can be seen to be supported by others within the field such as Sysko et al., (2005) who argued that the nutritional restoration undertaken during in-patient treatment does not necessarily change core eating difficulties for individuals, leaving weight recovered individuals vulnerable to relapse.

The second point presented by this section is that, again despite the importance of mealtime care, few studies have so far been conducted evaluating the implementation of mealtime provisions. Furthermore, those that have can be seen to be lacking in their validity due to methodological issues such as a failure to include a control condition or limitations associated with analysis of an outcome measure.

Third, this section demonstrates the lack of clinical empirical evidence-based guidance that is currently available regarding the implementation of in-patient eating disorders mealtime care. Concerns related to this have been voiced elsewhere, for example, Couturier and Mahmood (2009) stated, *“although versions of meal support therapy are commonly practised in many eating disorder treatment centers...[there is a] lack of resources and lack of clarity on how best to provide support during meals”* (p. 328).

Contrastingly, guidance on giving mealtime support has been identified as an area which is deserving of attention amongst those families and carers providing meals to those with eating difficulties outside of specialist units, with published studies existing to evaluation the usefulness of such support (e.g., Cairns et al., 2007).

In conclusion, there is a scarcity of research which has been conducted investigating the optimum provision of mealtime care on in-patient eating disorders units. This lends itself to a discussion of those possible factors which affect behaviour and experience of mealtimes which have, to date, been overlooked within the eating disorders field. In order to begin investigation into this area, the following section explores those factors identified from non-eating-disordered research as being capable of influencing mealtime behaviour, general intake or consumer eating experience. The aim of the following section is to consider such findings and the application of mealtime factors in relation to the mealtimes of those with eating disorders.

1.5 Manipulation of environmental factors within general hospital mealtimes

In contrast to the scarcity of research which has been undertaken within clinical eating disorders settings, within other general hospital settings, close inspection has been undertaken to evaluate factors associated with in-patient mealtimes (e.g., Kelly et al., 2000; Mathey, Vanneste, de Graaf, de Groot, & van Staveren, 2001; Yen, 2003). This greater number of published studies conducted within the general hospital setting can be attributed to the recognised high number of incidents of poor nutrition amongst hospital in-patients, and the need to indentify causality (Carr & Mitchell, 1991; Kelly et al., 2000). Moreover, Mathey et al. (2001) argued that due to the long term stays and physical limitations of older adult in-patients, nurses are ultimately responsible for these issues, and their provision of the optimum environment for promoting food intake is of paramount concern for the quality of care they provide. In line with this, educational programs for nurses working with older adults have been produced in order to specifically aid care during mealtimes (Bonnel, 1995).

In terms of general medical mealtime eating environments, a number of studies have adapted aspects of the mealtime environment within nursing homes. For example, Desai, Winter, Young and Greenwood (2007) found that changing the food delivery (i.e., whether service users were able to choose their meals, cafeteria-style compared to a more traditional pre-plated service method) and appearance of the environment (traditional institutional compared to a more 'homely' atmosphere) increased the body mass index of those most at risk. Additionally, Mathey et al. (2001) also saw benefits for older adults by adjusting the environment (e.g., changing the seating plans), atmosphere, food service and nursing organisation. More specifically, music has been found to enhance intake over control conditions for in-patients with dementia (Ragneskog, Kihlgren, Karlsson & Norberg, 1996). Likewise, Murray (1997) also showed that a pleasant environment can increase intake and satisfaction on older adult wards, concluding that meals should be tailored to the needs of the service users.

Moreover, Edwards and Hartwell (2004) found the presence of people during the mealtimes of general hospital wards to be beneficial for female in-patients. The authors documented mealtime intake to be higher amongst those in-patients who consumed their meals with others as opposed to on their own. However, it should be noted that the places in-patients ate were determined by their own choice, and not manipulated by the researchers, therefore, results should be interpreted with caution. For example, it is highly possible that the greater intake was seen amongst those eating within a group because these individuals were less ill and therefore more sociable.

Additionally, there has also been an increase in qualitative studies which consult service users directly in order to explore their personal experience of eating in hospital (e.g., Naithani, Whelan, Thomas, Gulliford & Morgan, 2008). Recently, Johns, Hartwell and Morgan (2010) concluded from a survey of in-patients within a general hospital ward, that although hospital food was felt to be of poor quality, the experience of this could be lessened if the meals were served by cheerful and polite staff. Similarly, Dickinson, Welch and Ager (2008) approached in-patients of older adult wards to gain their views of meal

provision. The authors used a variety of methodologies to build a picture of the views expressed, including focus groups, interviews and observations. They found not only the quality of the food and service to be important, but the environment within which it was served was reported to be influential to their satisfaction of the mealtimes. The data informed the development of a model which was used to change nursing practices during mealtimes for the benefit of the in-patients.

The above studies give examples of when researchers have focused on the implementation of mealtimes on both older adult and general medical hospital wards. Many of these studies have resulted in aspects of the mealtime delivery changing to increase patient-centred care (e.g., Dickinson et al., 2008). The existence of such studies only goes to highlight the dearth of research that has been conducted which aims to address the needs of those receiving in-patient eating disorders care.

1.6 Factors associated with mealtime behaviour and experience

As previously stated, the current thesis acknowledges the need to investigate the provision of meals on eating disorders units. Due to the lack of research which has been undertaken addressing mealtimes of in-patients with eating disorders, it is proposed that insight can be gained from the numerous studies which have occurred in the field of intake within the non-clinical population. Although meals are primarily engaged in due to our biological need for energy intake (Woods, 2005), and internal signals from the digestive tract and the endocrine system leading to satiation and termination of meals (Hellström et al., 2004), there is a wealth of research to suggest that food intake also involves many other factors and is consequentially not something which can be solely explained by internal, biological factors alone (Gibson, 2006; Hellström et al., 2004).

Within the following sub-sections, a literature review, to investigate the most commonly cited factors capable of altering intake and satisfaction of meals, is presented. The majority of these studies have been conducted with non-clinical samples; however, attention is drawn to where studies have considered levels of eating psychopathology. These are categorised into three sub-sections: 'the characteristics of food', 'factors related

to the eating environment', and 'consumer expectations, mood and emotions whilst eating'. Due to the focus of the current thesis being mealtimes of those with eating disorders, physiological factors at play during eating were deemed to be outside the remit of this literature review.

1.6.1 Characteristics of food

Previous research has identified two main areas associated with the characteristics of food consumed which are influential to the amount eaten. First, the general acceptability and taste of the food is known to increase intake (de Graaf et al., 2005). Specifically, if an individual enjoys the taste of the food, they are likely to eat more than if they consider it to be unpleasant. Additionally, previous studies have considered the role of taste within the eating practices of those with eating disorders, mainly to show how dietary restrictions were able to override taste responsiveness. For example, individuals with anorexia have been seen to report liking of sweet solutions, as long as the possibility of ingestion was excluded (Drewnowski, Halmi, Pierce, Gibbs & Smith, 1987). Along with taste, the enjoyment of food itself has been suggested to be connected to certain sensory aspects of the food such as its colour (Levitan, Zampini & Spence, 2008), texture (Szczesniak, 2002) and temperature (Lester & Kramer, 1991).

The second area, associated with the characteristics of food, which appears to be influential to the amount of food consumed within a set time period relates to the variety of the food. Studies looking at the influence of food variety have observed that, during a period of eating, an individual will experience a decrease in pleasantness following the consumption of a food (thus leading to the termination of eating), whilst uneaten/tasted but not eaten foods remain high on pleasantness (e.g., Brondel, Romer, Van Wymelbeke, 2009). This process has become known as sensory-specific satiation (previously referred to as sensory-specific satiety: Rolls, 1986). Support for this theory has come from studies which show individuals to rate the pleasantness of foods less favourably following the continued intake of that food item, compared to food types not eaten (Brunstrom & Mitchell, 2006; Hetherington, Foster, Newman, Anderson & Norton, 2006). The variety of

food may also affect intake by influencing an individual's ability to maintain their levels of restriction (Wallis & Hetherington, 2009). They (Wallis & Hetherington, 2009) found that the presence of a low fat food may serve as a dietary reminder to those with high levels of dietary restriction, when individuals may otherwise be susceptible to overconsumption during a stressful condition (see section 1.6.2 below).

In summary, previous literature is able to demonstrate how the sensory characteristics of food, such as temperature and texture, are able to influence intake in non-clinical individuals (e.g., Szczesniak, 2002). Alongside this, the process of sensory-specific satiation suggests there will be a decrease in pleasantness experienced relating to consumed food, whilst uneaten food continues to be rated highly in pleasantness. Together this evidence suggests that the type of, and variety of foods offered within a meal can be influential to the amount eaten and ratings of pleasantness given by a non-clinical consumer. Although the intake behaviour of those with eating disorders has been suggested to be less influenced by such factors (Drewnowski et al., 1987), literature on the influence of eating psychopathology on sensory-specific satiation is currently limited.

1.6.2 Consumer expectations, mood and emotions

As well as the actual characteristics of food, the cognitions and moods experienced by consumers, prior to and during eating, have been previously suggested to be capable of influencing intake during meals. For example, in relation to expectations of the meal, Cardello, Schutz, Snow and Leshner (2000) conducted a set of studies wherein participants were offered food either appropriate or inappropriate to a particular setting. The authors found that expected food liking or disliking was a predictor of intake satisfaction, concluding that preconceptions held about a meal are likely to affect the course of the meal itself.

Alongside preconceptions held, the emotions and mood of an individual have also been suggested to influence a range of potential factors related to eating, such as the food that is chosen (e.g., Gibson, 2006). In individuals of normal weight, underconsumption during negative emotions has been suggested to have been able to prepare

our ancestors to deal with a potentially threatening situation, during which eating would likely be a hindrance (Evers, Stok & Ridder, 2010). However, despite certain studies showing evidence for a decreased intake during stressful conditions (e.g., Dallman, 2009; Epel, Lapidus, McEwen & Brownell, 2001), studies conducted regarding the effects of stress have proved inconclusive (see Macht, 2008 for a review). Therefore, alongside such a physiological stress response explanation, evidence has also appeared from psychological and individual difference theories, such as the masking hypothesis (Herman & Polivy, 1988), the escape theory (Heatherton & Baumeister, 1999), and the limited cognitive capacity hypothesis (Boon, Stroebe, Schut & Ijntema, 2002).

The masking hypothesis suggests that individuals eat when they experience negative mood in order to mask the real cause of the distress, and instead blame their mood on their over-consumption. This proposition is supported by research such as that by Baumeister, Bratslavsky, Finkenauer and Vohs (2001) who found that when participants were told their negative mood was not able to be changed, distress-induced eating was seen to stop. Likewise Macht, Haupt and Ellgring (2005) found that individuals reported eating prior to sitting examinations in order to distract themselves from associated negative behaviours. Alternatively, the escape theory (Heatherton & Baumeister, 1999) suggests that over-consumption of food occurs during events which are perceived as being threatening to an individual's self-image. In the presence of a stressor, individuals are seen to attempt to shift their attention from the ego-threatening stimuli to food consumption in order focus to distraction themselves. One study where the results were consistent of this theory was conducted by Wallis and Hetherington (2004), who found that intake was disinhibited when they ate during a task designed to induce an ego-threat. Furthermore, Wallis and Hetherington (2004) found that the increase in intake observed was associated with dietary restraint (the process of consciously limiting intake in an attempt to control body weight: Herman & Mack, 1975). This, they concluded, may have been due to the ego-threat stimuli requiring attention, and thus individuals with high restraint being no longer able to control their intake as they would normally have done.

This theory is in line with that of Boon, Stroebe, Schut and Ijntema (2002), who proposed the Limited Cognitive Capacity Model. This assumes that, cognitively, humans are limited by how much information they are able to attend to. Therefore if a stressor requires attention, there is a decrease in an individual's ability to monitor how much they are eating, thus resulting in increased intake. Importantly, this theory does not only relate to emotive stimuli, but also states that attention may be given to other stimuli, such as a distraction within the environment, which also may lead to overconsumption occurring. Such an outcome has been observed in a number of studies (e.g., Zellner et al., 2006). Alongside restraint, researchers have also considered disinhibition (the degree to which an individual is likely to overeat due to a disruption of their cognitive effort to restrict). For example, Rutters, Nieuwenhuizen, Lemmens, Born and Westerterp-Plantenga (2008) found there to be an increased likelihood that intake would increase under stress conditions (irrespective of hunger) amongst individuals with high levels of disinhibition compared to low levels of disinhibition.

The above studies would suggest that the expectations held by individuals and their moods when eating have been shown to be influential to intake. Furthermore, individuals appear to have differing responses depending on their levels of dietary restraint and disinhibition (e.g., Wallis & Hetherington, 2004), although conflicting findings have been reported (e.g., Yeomans & Coughlan, 2009). It appears apparent that such links between eating psychopathology, intake and mood are valuable to research considering in-patient eating disorders meals.

1.6.3 The eating environment

1.6.3.1 *General ambience*

Aside from the food itself, and the expectations and mood of the consumer, the immediate environment (i.e., the ambience of the eating location) has been shown to be influential to the amount consumed during a meal (e.g., Wansink, 2004), the self-reported ratings of meal satisfaction (Bell, Meiselman, Pierson & Reeve, 1994), and ratings given for food pleasantness (Edwards, Meiselman, Edwards & Leshner, 2003; King, Meiselman,

Hottenstein, Work & Cronk, 2007). This awareness of the importance of the eating environment is further evident from the attention paid to the design of restaurant interiors (Stroebele & de Castro, 2004b). A specific example would be the lighting and noise within an eating environment, which have been suggested to be capable of influencing the comfort felt by individuals (Wansink, 2004) and their rate of eating (Lyman, 1989), both factors linked to volume of consumption. Another example of the importance of environmental surroundings was provided by Bell et al. (1994). They demonstrated that presenting food in a restaurant decorated with an Italian theme increased the selection of pasta and desserts compared to the same food presented in a British themed restaurant.

The above research demonstrates that the food that is chosen, the amount that is eaten and how much it is enjoyed, can be influenced by the surroundings in which it is presented. Although many studies have focused on such influences, none have considered such factors within clinical eating disorders settings or even in relation to levels of eating psychopathology.

1.6.3.2 *People present*

In addition to the general ambiance, the influence of the presence of others whilst eating is now a common focus of research; however, this potentially influential factor was, until fairly recently, overlooked within the literature due to study designs wherein people were tested alone in order to control, as far as possible, for confounding influences (de Castro, 1994a). There have been robust findings within the literature of the 'social facilitation' effect, which is the observation that people eat more when in the presence of others compared with when they are on their own (e.g., Stroebele & de Castro, 2006). The influence of those present on consumption has also been highlighted with a qualitative study by Kristensen, Holm, Raben and Astrup (2002). The authors carried out in-depth interviews in order to explore individuals' understanding of their own experience of satiety. As part of the conclusion of the authors, it was found that interviewees considered the presence of others to be influential when eating, such as avoiding eating to satiety when unfamiliar people were present.

One explanation that has been given for the ability of the presence of others to increase intake is that of 'time expansion theory' - the more people there are involved in the meal the longer the meal takes; therefore, increased intake results from the increase in time available to consume (de Castro, 1990). The findings of Pliner, Bell, Hirsch and Kinchla (2006) supported this, however the number of people present was found not to be significant on its own. Pairs of individuals actually ate more and spent longer on their meals than groups of four. Alternatively, Hetherington, Anderson, Norton and Newson (2006) tested whether the effects of social facilitation were due to distraction, in that the more people present the less able an individual becomes at monitoring their own intake. They found that, as when eating with someone familiar to them, when eating with a stranger participants' attention was diverted away from the food; however, no increase in intake was observed. From this, the authors concluded that the mechanisms behind social facilitation must be more than distraction alone.

Others have also found the characteristics of those individuals present to moderate intake. Specifically, individuals' intake has been found to vary according to the degree of familiarity and the sex of those present (e.g., Bell & Pliner, 2003; Bellisle, Dalix, Airinei, Hercberg & Péneau, 2009; Salvy, Jarrin, Paluch, Irfan, & Pliner, 2007; Salvy, Vartanian, Coelho, Jarrin & Pliner, 2008; Young, Mizzau, Mai, Sirisegaram & Wilson, 2009). For instance, Salvy, Howard, Read and Mele (2009) found that youths eating together ate more if in the presence of friends rather than unfamiliar peers. Similarly, this effect has also been seen within clinical samples taken from general hospital wards (e.g., Edwards & Hartwell, 2004; Locher, Robinson, Roth, Ritchie & Burgio, 2005).

Furthermore, the behaviour of an eating companion has also been found to be influential on amount consumed. Hermans, Engels, Larsen and Herman (2009) found that women consumed more when in the company of a individual who ate a large amount compared to when eating with someone who ate a small amount. Interestingly, this relationship was stronger when the confederate was unsociable. They suggested this may be due to the unsocial environment creating feelings of uncertainty which increased

modelling (due to participant feeling more uncertain as to how much to eat and thus externally basing intake levels on the confederate's behaviour). Alternatively, this could have resulted from participants attempting to integrate with the confederate, eating similar amounts due to the desire to be liked. In addition, McFerran, Dahl, Fitzsimons and Morales (2010) added that it is possible that an individual's eating may be influenced by the body size of another individual who is present. These studies provide support for the theory of modelling that has attempted to explain the observed effect of increases and decreases of intake in relation to others, wherein individuals consume more when those around them eat a larger amount, and less when they eat a smaller amount (see Herman, Roth & Polivy, 2003 for a review of the literature).

However, in certain instances, the presence of others within the eating environment has been found to significantly suppress intake, which is known as impression management (e.g., Roth, Herman, Polivy, & Pliner, 2001). Herman et al. (2003) suggest that the presence of people within the eating environment is capable of inhibiting an individual's intake due to it becoming a 'public spectacle'. Specifically, they comment that in situations when people eat with a non-eating observer, self-consciousness on the part of the observed can result in limiting intake. Péneau et al., (2009), also found a 'social inhibition' effect rather than that of 'social facilitation', whereby the intake of teenagers was seen to decrease as more people were present during meals. The authors stated this effect may have been produced due to those present not being familiar enough to produce a social facilitation effect. Furthermore, this effect of an observer inhibiting intake can also be seen in the case of binge eating (i.e., bulimia nervosa). Episodes of binge eating have been found to be more likely to occur when eaters consume alone than when they are with others (e.g., Waters, Hill, & Waller, 2000).

Considering the above research, it would appear that the people present can have an influential effect on the amount eaten by an individual during a meal. Whether eating is facilitated or inhibited appears to depend on a number of factors, such as, the number of people along with the sex, familiarity, behaviour and appearance of those present. The

potential that the presence of people within the eating environment could inhibit or facilitate eating may have important implications for the meals of those with eating disorders, thus suggesting the need for research to consider such factors in relation to eating psychopathology.

1.6.3.3 *Audio and visual distractions*

Alongside the people present within, and the general ambience of, the eating environment, various other factors within the mealtime setting have been found to influence amount consumed during, and enjoyment, of meals (e.g., Thomson, Spence, Raine & Laing, 2008). The sub-sections below give an overview of the literature which exists regarding the four most commonly cited distracters within the eating environment: television, audio stories, interactive media and music.

1.6.3.3.1. Television

Due to the epidemic rise in obesity (Rolls, 2003), much research has focused on those aspects of lifestyle and environment which might facilitate increased intake. One area which has received attention is that of the influence of television viewing on amount of food consumed. Bowman (2006) found that a period of over two hours a day watching television was associated with overweight and obesity for both men and women. Likewise, Williams, Raynor and Ciccolo (2008) have concluded that there is a consistent link between obesity and television viewing within research. This relationship between watching television and intake has also been explored within naturalistic studies (Foster, Gore & West, 2006). For example, Thomson et al., (2008) found television viewing to be associated with snacking behaviour and body weight status. Stroebele & de Castro (2004a) found television viewing to be associated with an increase in meal frequency in humans. However, the difficulties of measuring such behaviour within a naturalistic setting has previously been acknowledged (Tomiya, Mann & Comer, 2009).

It is acknowledged that there is likely to be a complex relationship between food intake and television watching (Cleland, Schmidt, Dwyer & Venn, 2008). A number of factors have been suggested to be involved such as, associated increased sedentary time

thus providing the opportunity to eat more and decreasing the opportunity for physical activity and exposure to advertisement of food (e.g., Crawford, Jeffery & French, 1999; Dixon, Scully, Wakefield, White & Crawford, 2007; Giammattei, Blix, Marshak, Wollitzer & Pettitt, 2003; Temple, Giacomelli, Kent, Roemmich & Epstein, 2007). Additionally, one theory which has received much attention within the literature is that of television acting to disrupt the habituation to food which would naturally occur. Specifically, Higgs and Woodward (2009) concluded this in a recent study wherein participants ate their lunch either with or without a television, then recorded how many cookies they ate in a following tasting test. They stated that during the television viewing condition a distraction affect was apparent, wherein attentional resources which would normally have been directed towards satiety cues were instead diverted by the distracting stimuli. A result of this is that attention is taken away from the physiological signals associated with becoming full, leading to an over consumption. Further detail is provided by Blass et al. (2006) who reported that participants' eating behaviour was different in conditions when a television was present than when listening to music. Using a within-participant design, Blass et al. (2006) found that participants in the pizza condition allowed less time in between eating each slice of pizza when watching television compared to when listening to music. Individuals eating macaroni and cheese also ate faster when in the television condition compared to the music condition.

The effect of television on intake also appears to extend beyond the initial eating period of television viewing. For example, Stroebele and de Castro (2004a) found that eating in front of the television increased overall meal frequency. As mentioned above, Higgs and Woodward (2009) also found that individuals who ate their lunch whilst watching the television consumed more cookies in a later snack condition than participants who had eaten their lunch without the television. They concluded that the television was able to decrease an individuals' capability to remember their lunch, thus affecting consumption later the same day. This finding is supported by research wherein individuals with amnesia are seen to eat multiple meals due to a lack of memory of

previous eating (Rozin, Dow, Moscovitch & Rajaram, 1998), and individuals are recorded to be less accurate in estimating intake after having watched television (Moray, Fu, Brill & Mayoral, 2007).

1.6.3.3.2. Audio stories

Similarly to viewing television whilst eating, listening to audio stories has been reported to have a distraction effect within a handful of studies (e.g., Bellisle et al., 2009). For example, Bellisle and Dalix (2001) found that an increase in intake can be seen when audio distraction stimuli are present in the environment. Furthermore, they found that this distraction effect was positively correlated with dietary restraint scores, in that those with high levels of dietary restraint were at an increased risk of consuming more in the distraction conditions than they were in the baseline condition. They concluded that this paradoxical effect was due to the ability of audio distractions to offset the influence of restraint, resulting in individuals losing their ability to restrict and instead increase their intake. However, later studies have been unable to replicate these findings (Bellisle et al., 2009; Boon et al., 2002; Bellisle, Dalix & Slama, 2004).

1.6.3.3.3. Interactive media

Alongside exploring the influence of television and audio stories, the rise in use of the internet and gaming activities has promoted recognition of the need to explore the area of interactive media during eating (Schneider, Dunton & Cooper, 2007). Amongst children, time spent surfing the internet or playing computer games has been found to be related to intake, BMI, body fat percentage and obesity, even after controlling for physical activity (e.g., Mellecker, Lanningham-Foster, Levine & McManus, 2010; Schneider et al., 2007; Stettler, Signer & Suter, 2004). For example, Brunstrom and Mitchell (2006) found that participants experienced both less of a reduction in their desire to eat and in their reported fullness when they ate in the presence of a computer game. Reported gender differences have also been found within this area by Cessna, Raudenbush, Reed and Hunker (2007). They found that male participants ate an increased amount whilst playing a fighting-based computer game, whilst females ate more during a control condition. The

authors also recognised that participants' ability to adequately estimate how much they had eaten was reduced after playing games compared to when they were not distracted. Thus, they concluded that video games may result in individuals underestimating their food consumption, and as a consequence increase the risk of weight gain.

1.6.3.3.4. Audio sounds

Lastly, another potentially influential factor within the eating environment has been music. For example, Chaput, Klingenberg, Astrup and Sjödin, (2010) recognised the importance of understanding intake whilst listening to music in light of the increase in popularity of such items as portable MP3 players. Indeed, there has been a growing interest in this area, not only due to concerns over obesity but due to the realisation that background noise can play an important part in meal satisfaction (see Spence & Shankar, 2010 for a review). For example, individuals who listen to sounds associated with the beach, record increased enjoyment of seafood than those who do not (Blumenthal, 2007). Although music has been seen to increase intake, and alter time spent on the meal (Stroebele & de Castro, 2006; Sullivan, 2002), others have highlighted that the relationship between intake and music is more complex and should be considered alongside individual musical preferences (Caldwell & Hibbert, 2002).

1.6.3.3.5. Overview of audio and visual distractions

The above research studies demonstrate the ability of different aspects of the eating environment to influence intake and mealtime experience. For many of the aforementioned factors, distraction has been proposed as the mechanism behind such influences, exacerbated by individual differences such as dietary restraint. For example, Ward and Mann (2000) found that individuals with high restrained eating ate more when asked to do highly cognitively engaging tasks, whereas the opposite was found for participants with low levels of restrained eating. This appears to support the theory that cognitive tasks caused distraction, and thus required attention to be drawn away from the individuals normal monitoring of their intake.

As mentioned previously, a number of processes have been proposed to explain the effects of distraction and food intake in relation to the overconsumption which has been seen with restrained eaters. The limited capacity hypothesis (Boon et al., 2002) proposed that overeating in restrained eaters results from cognitive capacity not being infinite. Therefore, disinhibited eating occurs amongst those who restrict their eating because they are not able to attend to their dietary restriction due to cognitively demanding environmental distractions occupying capacity within their limited cognitive capacity. This means that those who try to reduce their consumption actually end up undermining this aim due to their susceptibility to certain environmental factors, such as cognitively demanding tasks, which act to distract their normally highly monitored eating. This theory of limited capacity is further supported by findings such as those of Vreugdenburg, Bryan, and Kemps (2003) who found dieters to report having more pre-occupying cognitions than individuals who were not currently dieting.

Alternatively, Herman and Polivy (1975) suggested the boundary theory of hunger. This states that all individuals have upper and lower limits to their hunger and satiety which are determined biologically. The space between those two boundaries is determined cognitively and determines how much people think they should eat, although in some cases people set artificial satiety boundaries such as when dieting. As a result of this, the body tries to compensate food intake to meet the original biologically determined boundary level, triggering a hunger response (Herman, & Polivy, 1975). It is suggested that if an individual who is attempting to control their intake consumes more than they believe they should do to keep within their self-imposed boundaries, there follows a 'what-the-hell-effect', wherein the individual feels their diet has been broken, and therefore they may as well consume more. The range of theories presented above, together with the dearth of research which has considered factors within the eating environment in relation to those with eating disorders, lends this thesis to suggest that future studies need to address such gaps within this area of knowledge.

1.6.4 Summary of factors associated with mealtimes

The literature described above suggests various factors, including characteristics of food, the cognitions and mood of the consumer and aspects of the eating environment, to be influential to the amount consumed during, and the overall experience of a meal. A vast range of naturalistic and laboratory based studies have been conducted to explore these relationships within non-clinical populations. However, whilst a number of studies have considered these areas in relation to individual differences such as restraint (e.g., Bellisle & Dalix, 2001; Boon et al., 2002), a limited number have explored them in relation to eating psychopathologies. Likewise, to date, despite the importance of mealtimes within eating disorders treatment, no studies have considered this range of potentially influential factors for those with clinical levels of eating disorders.

1.7 General summary of literature review

Individuals with eating disorders are known to experience anxiety during mealtimes (e.g., Harvey et al., 2002). Therefore, a number of individual services have developed guidelines which advise families and carers regarding the mealtime support of their children with eating disorders (e.g., Leichner et al., 2005). However there appear to be limited evidence-based recommendations directly related to mealtimes implemented by staff of in-patient units (e.g., NICE, 2004). Indeed, only a handful of studies have considered manipulation of the in-patient dining room to improve service user satisfaction (compared to that done within the general medical older adult field, wherein numerous positive results have been obtained - e.g., Kelly et al., 2000; Mathey, et al., 2001; Sandy et al., 2007; Yen, 2003). Furthermore, a scarcity of research has resulted in a lack of understanding of the different mealtime practices being implemented within eating disorders services, and a lack of shared and evidence-based knowledge to support auditing of interventions, daily practise, or to drive new mealtime interventions (Prestwood, 2009).

Alongside this, previous research has generally suggested that environmental distraction can increase intake whereas focused attention can reduce consumption (e.g.,

Stroebele & de Castro, 2004). This effect appears to be especially relevant to those individuals who are deliberately trying to limit their intake for the purpose of weight loss (restrained eaters), although the results are equivocal for a variety of methodological reasons (Bellisle & Dalix, 2001; Bellisle et al., 2004). The relationship between food intake and restraint is particularly relevant within the scope of this thesis as it has been suggested that dietary restriction is likely to precede the development of eating disorders (e.g., Delinsky & Wilson, 2008; Neumark-Sztainer et al., 2006; Patton, Selzer, Coffey, Carlin & Wolfe, 1999). It is of clinical importance for those with eating disorders that research is conducted specifically investigating the relationship between food intake, distraction and eating disorder psychopathology. Therefore, in light of the known importance of evidence-based interventions (Wilson & Shafran, 2005) studies which consider these factors amongst the eating disorders population must be conducted. This is especially salient if the reasons behind increased intake relate to increased relaxation and decreased anxiety, thus opening the discussion for the importance of evidence-driven mealtime interventions to provide less stressful experiences for those with eating difficulties.

In order to begin research into the field of mealtimes on eating disorders units it is imperative that we build a picture of the practices that are currently being implemented. Therefore, firstly there is a need to assess the mealtime protocols being implemented in order to inform our understanding of the range of practices used. Research should then consider the range of factors within the in-patient dining room environment which could be capable of influencing intake and mealtime experience. Knowledge in this area could inform the development of evidence-based mealtime protocols.

1.8 Aims of present thesis

The present thesis has four broad aims. First, to assess current mealtime practices implemented within eating disorders services. Second, to explore the perception of mealtimes from the perspective of in-patient unit staff. Third, to investigate the perspectives of service users of their experiences of mealtimes on the in-patient units.

Finally, to experimentally consider the impact of environmental factors upon the eating behaviour and mealtime experiences of those with high levels of eating psychopathology. The specific aims for each chapter of this thesis are detailed below.

Chapter three:

In light of the paucity of literature which exists concerning the specifics of eating disorders mealtime care, the aim of Chapter three was to explore how meals are currently implemented on in-patient eating disorders units. Specifically, the study investigated which mealtime practices are currently implemented, and how practices vary across and within units.

Chapter four:

The aim of Chapter four was to investigate the opinions of staff towards the provision of mealtimes on inpatient units. The study was especially concerned with those techniques and strategies which staff consider to be useful, along with any specific difficulties they may encounter during mealtimes.

Chapter five:

The aim of Chapter five was to investigate the mealtime experiences of service users of eating disorders units. This study sought to explore what service users found helpful and unhelpful regarding the practices that were implemented.

Chapter six:

The aim of Chapter six was to investigate potential differences between the intake and anxiety of non-clinical individuals with high and low eating psychopathology during mealtimes with and without environmental distractions.

Chapter seven:

Chapter seven aimed to explore mealtime experience and behaviour within different environmental contexts. Specially, the aims were to compare intake, accuracy of perceived intake and mood of a non-clinical sample during meals eaten with and without environmental distractions. The study also considered the relationships between eating psychopathology scores and outcome variables in all conditions.

Chapter eight:

The research aim of the last study was to investigate the influence of distracting stimuli within in-patient mealtimes. Specifically, this study explored potential relationships between the durations of meals and objective and subjective mealtime anxiety during meals eaten when listening to audio distractions compared to without.

Chapter 2 : Methodology

2.1 Introduction to mixed methods

Within the eating disorders literature, although much of the research conducted is predominantly quantitative, various studies have employed qualitative methods, such as interviews and focus groups. For example, Perkins et al. (2004) interviewed carers of those with eating disorders to develop an evidence-base for the support that they required, whilst Bakker et al. (2011) used interviews alongside focus groups to explore nurses' beliefs regarding effective techniques to use with in-patients. A less commonly utilised qualitative method was used by Serpell and Treasure (2002), who asked individuals to write letters to their eating disorders to get a detailed insight into the associated positives and negatives they experienced. Alongside this, others, such as Arkell and Robinson (2008), have used a combination of both qualitative and quantitative methods to provide a holistic view of a particular area of interest.

In terms of assessing treatment provisions for the eating disorders, it has been argued that quantitative methods alone are limited in their ability to assess factors associated with success of treatment (Le Grange & Gelman, 1998). Whereas, Sale, Lohfeld and Brazil (2002) suggested that the use of qualitative and quantitative methods can be complementary when used together when conducting health care research. They argued that the different methods could, when used together, enable the researcher to consider the same phenomena from a variety of complementary perspectives.

Likewise, within the study of mealtimes of non-clinical populations, de Castro (2000) reminds researchers to look further than simply traditional quantitative research designs, *"the real-world environment contains a vast array of variables that influence intake...The real world can reveal what is important"* (p. 807). Additionally, previous studies have used both qualitative and quantitative methods to investigate the factors that influence mealtime experiences and satisfaction for those receiving treatment in general hospital care and non-clinical samples (e.g., Naithani et al., 2008; Stroebele & de Castro, 2006).

De Castro (1990) argued that when studying meals, failure to use qualitative alongside quantitative methods within the appetite literature overlooked the influence of certain factors such as social facilitation, due to social factors being removed or controlled for. In an attempt not to recreate such oversights within the under-researched area of eating disorder mealtimes, the decision was reached to use both qualitative and quantitative methods within this collection of studies. First an initial survey is undertaken containing both qualitative and quantitative items, giving an overview of current mealtime protocol. Following this, qualitative interviews are used to gain insight into individual perspectives of such mealtime protocol. After variables of interest have been identified following these interviews, quantitative studies further explore these in non-clinical and clinical settings.

2.2 Ethics

All studies conducted were approved by Loughborough University Ethical Advisory Committee. In cases where research was conducted on eating disorders units, prior to 1st April 2009, NHS ethical approval was gained through application to the National Research Ethics Service (NRES). After 1st April 2009, all NHS applications were made to the Integrated Research Application System (IRAS). NRES and IRAS applications were made to Coventry Health Care NHS Trust and South Staffordshire Healthcare NHS Trust. Where multiple sites were used, site specific amendments were made to extend the ethical application. Alongside this, the individual Research and Development (R&D) departments of each site were contacted for R&D ethical site approval. Written consent from participants was required prior to conducting all studies. The protocol for each study included informing participants of their rights to withdraw or remove their data at a later stage, plus ensuring the confidentiality and anonymity of their data in line with the Data Protection Act (1998).

2.3 Recruitment

2.3.1 Non-clinical participants

For those studies utilising non-clinical samples (Chapters 6 & 7), participants were recruited from a university campus. In the majority of cases, participants were invited to participate through Loughborough University's Research Participation scheme, wherein students volunteer to take part in studies in return for course credits. All participants were given information sheets before commencing the study, and written informed consent was required in advance (example can be seen in Appendix A). It is known that the overwhelming majority of those with eating disorders are women (Kjelsås, Bjørnstrøm & Götestam, 2004). Therefore, when recruiting non-clinical participants, studies were limited to female participants.

In the case of service providers (Chapters 3 & 4), the proposed research was discussed during service research meetings and/or ward meetings. Staff interested in participating were given information sheets and completed consent forms before taking part in any study.

2.3.2 Clinical participants

In the case of studies which recruited clinical participants (Chapters 5 & 8), hospitals were contacted via clinical members of the eating disorders staff multidisciplinary team. For all studies, members of staff were briefed on the nature of the work prior to commencing the studies. Information sheets were provided to staff members who disseminated these to suitable participants. Criteria for inclusion included that individuals were over sixteen years old and regarded by the ward team as suitable to take part in the research. Written informed consent was obtained from all participants.

2.4 Measures of eating psychopathology

Considering the limitations of quantitative methods (as has been noted in the above sub-section 2.1), it is generally acknowledged that assessment of specific eating disordered psychopathology is most effectively done via the administration of a structured

or semi-structured interview by either a clinician or a trained interviewer (Garner, 2002). However, due to factors such as time constraints or limits to resources, self-report measures are commonly employed and seen as being useful tools by those within the field (Fairburn & Beglin, 1994).

There have been a number of measures developed in order to assess the attitudes, behaviours and cognitions associated with eating disorders. Following is a brief description of the most commonly administered tools which are used as general eating disorders measures, in order of the year first developed.

2.4.1 The Eating Attitudes Test-26 (EAT-26) (Garner, Olmsted, Bohr & Garfinkel, 1982)

The original EAT-40 (Garner & Garfinkel, 1979) was developed as a measure of anorexic behaviours and attitudes, consisting of forty items in a self-report style. This was later replaced by a reduced length 26-item version, the EAT-26 (Garner, Olmsted, Bohr & Garfinkel, 1982). The EAT-26 consists of three sub-scales; Dieting, Bulimia and Food Preoccupation and Oral Control and is scored using a 6 point self-report scale from 'always' to 'never'. This most recent version has been shown to be a reliable and valid tool for providing objective measures of the symptoms of anorexia (Garner et al., 1982). However concerns have been raised in regards to its use, specifically, whether it is sufficiently sensitive to be used as a screening tool (Mintz, O'Halloran, Mulholland & Schneider, 1997).

2.4.2 Eating Disorders Inventory-3 (EDI-3) (Garner, 2004)

The most recent version of the Eating Disorder Inventory was developed in 2004 (EDI-3: Garner, 2004) to assess behavioural and psychological traits of anorexia and bulimia. Developed from the previous EDI (Garner, Olmstead & Polivy, 1983) and EDI-2 (Garner, 1991), this latest version contains 91 items made up of twelve sub-scales which are rated on a 0-4 point scoring system. The factors measured are currently; Drive for Thinness, Bulimia, Body Dissatisfaction, Eating Disorder Risk Composite, Low Self-esteem, Personal Alienation, Interpersonal Insecurity, Interpersonal Alienation, Interoceptive Deficits, Emotional Dysregulation, Perfectionism, Asceticism, Maturity Fears,

Ineffectiveness, Interpersonal Problems, Affective Problems, Overcontrol, and General Psychological Maladjustment. The sub-scale scores can be used separately or summed together to produce an overall score.

The EDI has been seen to be able to distinguish those with clinical levels of eating disorders from controls or non-clinical groups (Kashubeck-West, Mintz & Saunders, 2001). Additionally, the most recent version of the EDI (EDI-3) has been quoted as being widely used and easy to administer (Túry, Güleça & Kohlsa, 2009) and suitable for use with clinical and non-clinical individuals (Clausen, Rosenvinge, Friborg & Rokkedal, 2010). Moreover, it has also been shown to have good validity (Garner, 2004), internal consistency (Clausen et al., 2010) and test-retest reliability (Garner, Olmsted & Polivy, 2008).

2.4.3 Mizes Anorectic Cognitions Questionnaire-Revised (MAC-R) (Mizes, Christiano, Madison, Post, Seime & Varnado, 2000)

In its original form, the MAC consisted of three subscales: weight regulation, approval and self-control (Mizes & Klesges, 1989). Since its development, the MAC has been updated to the Mizes Anorectic Cognitions Questionnaire-Revised (MAC-R) (Mizes et al., 2000). This newer version made the (previously unequally balanced) sub-scales equal, strengthened its ability to differentiate between anorectic and bulimic individuals, whilst shortening its application. Furthermore, the consistency has been improved and this version demonstrates good internal consistency and reliability (Mizes et al., 2000).

2.4.4 The Eating Disorders Examination – Questionnaire (EDE-Q) (Fairburn & Beglin, 1994)

The EDE-Q (Fairburn & Beglin, 1994) is the self-report version of the structured interview, the EDE (Fairburn & Cooper, 1993). It is composed of 36-items, derived from the preceding interview schedule. It provides an assessment of the specific psychopathology of eating-disordered behaviour, as does the EDE. It is scored on a 7-point forced choice scale divided into four sub-scales: Restraint, Eating Concern, Weight Concern and Shape Concern.

Its validity against the EDE has been demonstrated to be at a high level of agreement for assessing core eating disorder psychopathology features in a non-clinical population (Fairburn & Beglin, 1994). Although the validity of the EDE-Q in a general population sample has been favourable reported (Fairburn & Beglin, 1994), the validity of the EDE-Q in assessing specific eating disorder behaviours is less clear. For instance, the EDE-Q and the EDE have been shown to differ in their ability to assess binge eating behaviour in both non-clinical and clinical samples (Black & Wilson, 1996; Carter, Aime, & Mills, 2001; Fairburn & Beglin, 1994; Wilfley, Schwartz, Spurrell & Fairburn, 1997). It is likely this may be due to inherent difficulty related to assessing bingeing behaviours by self-report rather than an inability of the EDE-Q (Meadows, Palmer, Newball & Kendrick, 2009). Additionally, the use of the EDE-Q within younger non-clinical populations has been questioned (Wade, Byrne & Bryant-Waugh, 2008).

2.4.5 The Stirling Eating Disorder Scales (SEDS) (Williams et al., 1994)

The Stirling Eating Disorder Scales (SEDS; Williams, et al., 1994) is an 80-item questionnaire with 8 sub-scales, designed for use with individuals with eating disorders. The scales within the SEDS (Williams et al., 1994) measure anorexic dietary behaviour, anorexic dietary cognitions, bulimic dietary behaviour, bulimic dietary cognitions, perceived external control, assertiveness, self-esteem, and self-directed hostility. Williams et al. (1994) recorded the SEDS to be a reliable and valid measure of emotive/cognitive and behavioural aspects of anorexia and bulimia.

2.4.6 The Eating Disorder Belief Questionnaire (EDBQ) (Cooper, Cohen-Tovée, Todd, Wells & Tovée, 1997)

The EDBQ contains four factors: Negative Self-Beliefs, Weight and Shape as a Means to Acceptance by Others, Weight and Shape as a Means to Self-acceptance, and Control over Eating. It is scored from 0 ('I do not usually believe this at all') to 100 ('I am usually completely convinced that this is true'). The EDBQ has been reported to have good validation, reliability and construct validity (Cooper et al., 1997).

2.4.7 Summary of measures of eating psychopathology

The scales described above have been developed in order to measure eating disordered behaviours, attitudes and cognitions. Each has unique uses and drawbacks which allow them to be more or less suitable for certain research aims. From those available, the EDI-2 was chosen as the suitable measure throughout this thesis (Appendix B). This was for a number of reasons. First, unlike some of the aforementioned measures (e.g., MAC-R), the sub-scales of the EDI are able to measure both eating disordered behaviour and a range of food, weight and shape related cognitions, beliefs, attitudes and emotions which are associated with the presentation of eating psychopathology. Furthermore, the EDI has been praised for its clearly defined behavioural and cognitive measures (Williams et al., 1994). Additionally, as was necessary for this present thesis, the eight eating-related sub-scales (as measured by the EDI-2) have been reported to be suitable for use in clinical (Eberenz & Gleaves, 1994) and non-clinical populations (Phelps & Wilczenski, 1993).

2.5 Subjective measures of mood

Temporary emotional states that are known to fluctuate depending upon circumstances have been defined as mood states (Murray, 1998). Below, a summary of the more commonly used self-report measures of temporary mood is provided. These are presented in order of development.

2.5.1 The State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch & Edward, 1970)

The STAI is used to measure adult anxiety, the current edition being Form Y (STAI Form Y). It is composed of 40 items, split equally into the S-Anxiety scale (state anxiety) and the T-Anxiety scale (trait anxiety). State anxiety is the measure of situation-related anxiety. This is known to change depending on the stress of the particular moment, i.e. increasing in response to physical danger and decreasing as a result of relaxation training. Central to the STAI-S-Anxiety scale are feelings of apprehension, tension, nervousness, and worry. This scale is able to assess how individuals feel during a particular moment along with how they think they will feel within a given hypothetical

situation. Items on the STAI-S scale prompted individuals to record how they feel at particular moments in time (e.g., calm, tense) on a 4-point Likert scale ranging from 'not at all' to 'very much so'. It has been shown to have good validity and test re-test reliability (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983).

2.5.2 The Profile of Mood States (POMS) (McNair, Loo, & Droppleman, 1981)

The POMS is a widely used measure of transient mood states (Stirling & Kerr, 2006). As well as being designed to assess current mood states it can be used to identify changes in mood. It consists of 65 items, measuring six sub-scales: Tension, Depression, Anger, Fatigue, Confusion and Vigour, although the scoring of the sub-scales separately has been suggested to be done with caution, with some of the sub-scales being likely to correlate and merge with each other (e.g., Norcross, Guadagnoli & Prochaska, 1984).

2.5.3 The Positive and Negative Affect Schedule (PANAS) (Watson, Clark & Tellegen, 1988)

The PANAS is a 20-item self-report measure of Positive Affect (PA) and Negative Affect (NA). PA measures levels of enthusiasm, activity and alertness, i.e. a high score would be indicative of high energy, full concentration and of pleasurable engagement. Low PA on the other hand measures feelings of sadness and low energy. It is commonly thought that negative Affect (NA) is simply the opposite of PA, however this has been argued not to be a correct interpretation (Watson, Wiese, Vaidya & Tellegen, 1999). For example, Watson et al. (1999) reiterated that a high score on NA is in fact evidence of distress which can potentially lead to anger, disgust, fear and nervousness (unlike the high energy of high PA), whereas low levels of NA are thought to equate to calmness (as opposed to the sadness of low PA).

The PANAS requires individuals to rate the extent to which they have experienced several emotions within a specified time period. This is recorded on a 5-point scale, from 1 'very, slightly or not at all', 2 'a little', 3 'moderately', 4 'quite a bit' and 5 'very much'. The internal consistency, reliability and validity of the PANAS have been measured favourably (Watson et al. 1988).

2.5.4 The Depression Anxiety and Stress Scales (DASS) (Lovibond & Lovibond, 1995)

The DASS consists of three 14-item self-report sub-scales measuring Depression, Anxiety and Stress. Items are rated on a 4-point scale using a time-frame of 'over the past week'. It has been found to be reliable and valid with non-clinical (Crawford & Henry, 2003) and clinical samples (Nieuwenhuijsen, de Boer, Verbeek, Blonk & Van Dijk, 2003).

2.5.5 Summary of subjective measures of mood

The scales described above have been developed in order to subjectively measure individuals' mood. Each has unique qualities which lend them to different research designs. From those mentioned above, the PANAS was chosen for use in Chapter seven to ascertain possible fluctuations in PA and NA (Appendix C). The use of this particular measure allows for insight to be gained in the energy levels and calmness of the participants. Importantly for the current thesis, the PANAS has been seen to be suitable for use in a non-clinical sample (e.g., Crawford & Henry, 2004), as was necessary in Chapter seven.

During the clinical distraction study (Chapter 8) the State-Trait Anxiety Inventory-S-Anxiety scale was used to provide a single measure of anxiety which could be compared across two time-points (Appendix D). This measure was chosen in order to provide a shorter and thus quicker to administer measure than the previously used PANAS. Importantly it has previously been seen to provide a suitable measure of anxiety within clinical eating disorders samples (e.g., Rieger et al., 1998).

2.6 Objective measures of anxiety

Obtaining the heart rate of individuals has commonly been used as an objective measure of anxiety (e.g., Kantor, Endler, Heslegrave, & Kocovski, 2001). In the recent decades there have been significant advances to the development of heart rate measurements, for example with many researchers now measuring the autonomic control of the heart by measuring heart rate variability (the variation in beat-to-beat interval) (e.g., Achten & Jeukendrup, 2003). However, simpler records of heart rate (beats per minute) are still employed to assess anxiety levels (e.g., Liu et al., 2007). The equipment

necessary for obtaining 'beats per minute' measurements has the advantage of being relatively cheap and simple to administer. Whereas the majority of 'heart rate variability' measurements involve comparatively more expensive apparatus which is not easily accessible in clinical practice and can be more invasive, such as those involving chest straps and/or electrodes. Although similarly complex equipment has been previously used during studies involving individuals with eating disorders (e.g., Dec, Biederman & Hougent, 1987; Winston & Stafford, 2000), this more invasive equipment was not felt suitable for the investigation of physiological responses during mealtime experimentation of this present thesis. Such equipment was seen as potentially heightening the anxiety of an already stressful experience (mealtimes). Instead, Chapter eight pilots the methodology of using wrist-worn heart rate monitors.

The importance of gaining an objective measure of anxiety alongside the subjective one is recognised by those who have suggested there to be limitations with the self-report of those with eating disorders. Previous literature has suggested that when using subjective measures of anxiety, self-reported by individuals with eating disorders, the data should be treated with caution. For instance, Zonneville-Bender et al., (2005) demonstrated that individuals with eating disorders lack "interoceptive awareness". Specifically they found discrepancies between subjective and objective responses to experimentally induced stressors. One of the reasons offered as to why this should occur was the higher likelihood of those with eating disorders to experience alexithymia (the characteristic disturbances in emotional processing, and identifying or describing one's feelings), as noted by others within the field (e.g., Bourke, Taylor, Parker & Bagby, 1992).

2.7 Mealtime diaries

Within the present thesis, a diary method was employed (Chapter 6) to assess the eating environment of a non-clinical sample within a naturalistic setting. The inclusion of this method of study was seen to be beneficial due to its ability to capture behaviour without such drawbacks of other study designs such as experimental or observer effects. Indeed, de Castro (1994a) promoted the use of diet diaries in order to investigate eating

behaviour in the natural environment. He stated that, with this method, data from natural behaviour can be collected without needing to pre-plan which factors to manipulate or control as would be necessary in laboratory studies. Instead, diaries are able to collect information relating to what people eat, their eating environment and their feelings throughout an eating episode. A potential importance of this method of data collection is highlighted by such studies as Tomiyama et al. (2009), who found evidence which contradicted laboratory findings relating to restrained eaters. Using electronic diaries, which prompted people to record data every hour for two days, they observed no significant associations between the intake of restrained eaters in response to positive compared to negative mood, whereas this finding has been seen within laboratory settings (see Greeno & Wing, 1994 for a summary). The authors concluded that the use of diary studies can be a valuable addition to the findings of studies which use laboratory-based methods.

De Castro (1994a) stated that the optimum period of time to collect data for studies looking at intake is between 3-7 days; however this depends on the participants' levels of motivation. For the studies in this thesis (Chapter 6), data was collected over 7 days, as this is thought to provide adequate information for stable, interpretable data (Basiotis, Welsh, Cronin, Kelsay & Mertz, 1987). By prompting participants to enter data into a diary at time of eating, it has been suggested that individuals are less likely to recall distorted memories and more likely to give detailed information (de Castro, 1994a). However, some have reported that intake is under-reported within diary studies (e.g., Mertz et al., 1991), a limitation taken into consideration during the analyses within this current thesis.

2.8 Interviews

The interview methods used in this thesis (Chapters 4 & 5) are similar to those used by Dickinson et al., (2005) during their assessment of the mealtime needs and experiences of older adults receiving hospital treatment. Likewise to methods used within this current thesis, Dickinson et al. (2005) explored the nature of mealtimes for hospital residents through focus groups and interviews. Dickerson et al. (2005) strove to

implement *“patient-centred mealtimes for older patient by changing the focus from institutional convenience to one that focuses on the requirements of the patient”* (p. 1). Similarly, this thesis aims to identify those factors which influence mealtime experiences for those eating meals, or providing meals for those in, in-patient eating disorders care. First, interviews were conducted with service providers to gain their opinion of providing mealtime care (Chapter 4). Second, data was collected from service users, allowing exploration of the experiences of the individuals who eat meals on eating disorder units (Chapter 5).

2.9 Case studies

Within the field of eating disorders research, a number of previous studies have focused on case studies from single individuals, or small groups of individuals, to provide them with an in-depth insight into a particular area (e.g., Bauer, 2010; Freizinger, Franko, Dacey, Okun & Domar, 2010). The limitations of such methods have been acknowledged, primarily the lack of ability to generalise findings (e.g., Ballauff et al., 1999). However, such methodology has often been employed when the subject matter occurs infrequently within a population. For example Morgan and Lacey (2000) used a case study approach in their investigation into bloodletting by an individual with anorexia. Additionally, others have used individual case studies to pilot inventions, such as a recent study by Treasure et al. (2010) who followed four service users to gain understanding of a ‘vodcast’ eating intervention. Similarly, Chapter eight of this current thesis utilised case studies to pilot the use of MP3 players during in-patient mealtimes.

2.10 Qualitative analysis

The qualitative data in Chapters four and five were analysed using thematic analyses. Although historically thematic analysis has been poorly defined (Boyatzis, 1998), Braun and Clark (2006) argue that not only should be considered a method in its own right, but it is ideal for the first time qualitative researcher. They claim it has the advantage of being flexible but when applied rigorously, is capable of providing a, *“rich and detailed, yet complex, account of data”*, (p. 78). Indeed a number of studies within the

field of eating disorders have used a thematic analysis approach (e.g., Kyriacou, Easter & Tchanturia, 2009; Tierney & Fox, 2010). The author of this thesis considered herself to be a first time user of qualitative research methods. Therefore, the decision to employ thematic analysis within this thesis was made and all work was aided by the comprehensive guidelines provided by Braun and Clark (2006).

The method of thematic analysis used within the following studies (Chapters 4 & 5) involved rigorous and structured analysis as described by Braun and Clark (2006). A bottom up approach was maintained, drawing themes from the explicit meanings of the data, without trying to fit themes into any preconceived coding frame. As for all qualitative analysis of this kind, analysis was a recursive process, allowing movement back and forth through the phases described below.

Firstly the interviews were transcribed verbatim and then read and checked against original recordings. The scripts were then read and re-read to search for meaning within the data items. During this early stage notes were made regarding ideas for coding, which were refined at a later phase. The next phase involved the production of initial codes. These referred to features of the data which meaningfully described, in the most basic way, something of the topic. This began the process of organising the data into meaningful groups, from which the themes later followed. The list of codes was then sorted into potential themes, collecting all the potential data extracts into their themed headings. Following from this, themes were refined through combining, refining and separating where appropriate, until the data extracts within the themes sat together in a meaningful way whilst appearing clearly distinct from other themes. This process was conducted using NVivo (QSR International Pty. Ltd., 2002). For both the staff and service user studies, a second rater conducted an identical process for an extract (roughly 10%) of the data set. The two sets of analysis were then examined alongside each other for inter-rater reliability. At this stage discussions were held between the two researchers, wherein themes were renamed, split or extended. This process continued until both were satisfied that the themes suitability represented the data.

2.10.1 Reflective practice

Reflexivity involves openness to the discussion of the dynamic relationship between research and researcher. Reflective practice can be seen to be commonly practised and encouraged within healthcare-related qualitative research (e.g., Malterud, 2001; Ryan & Golden, 2006). Johnson, Crown, Martin, Dormuth and Siebert, (2009) suggest that it is considered good practice for quantitative researchers to address the limitations to their studies within the discussion section of their writing. However, it has been argued that, there is less emphasis on reflectivity within a quantitative methodological approach (e.g., Mauthner & Doucet, 2003; Millen, 1997). For example, Ryan and Golden (2006) state that, *“while many qualitative researchers have bared their souls about the difficulties of doing social research, most quantitative researchers continue to avoid explicit forms of reflexivity”* (p. 1193).

Within the current thesis, reflexive practice will be undertaken via the discussion sections of each study chapter, wherein limitations to study design and conduct will be acknowledged. Additionally, the personal reflections of the author towards both the qualitative and quantitative aspects of this thesis can be found in the appendices (Appendix E), following trends of reflexivity as seen as essential amongst other recent studies (e.g., Ryan & Golden, 2006).

2.11 Quantitative analysis

Normality tests for all data were run in order to assess appropriateness of parametric or non-parametric testing. In studies where cases were compared against each other (Chapters 6, 7) suitable one way or two way repeated measure ANOVAs were employed. Within Chapter 7, where relationships between two variables were examined, tests of correlation were employed. All tests were two-tailed with α set at .05.

Chapter 3 : Study 1

Survey of mealtime protocols

Chapter 3 - Study 1: Survey of mealtime protocols

The literature review conducted in Chapter one concluded that there is a scarcity of research regarding the implementation of mealtime care on in-patient eating disorders units. This is significant in light of the reported importance of mealtimes in terms of treatment provision (Geller et al., 2001) and alongside evidence from non-clinical and general medical wards which have found elements within the dining environment to be influential to intake (e.g., Desai et al., 2007) and mealtime experience (e.g., King et al., 2007).

Study one of this thesis was conducted to collate information regarding the current implementation of mealtime care on UK in-patient eating disorders wards. A survey method was developed, containing both qualitative and quantitative items. Responses were received from twenty two units, with results highlighting the variation within and between units regarding the mealtime care provided.

Chapter three forms study 1 in the following article: Long, S., Wallis, D. J., Leung, N., Arcelus, J., Meyer, C. (*in press*). Mealtimes on eating disorders wards: a two study investigation. *International Journal of Eating Disorders*. DOI: 10.1002/eat.2091.

3.1 Introduction

It is recognised that there are a range of treatments and styles of care implemented across eating disorders services, indeed the NICE guidelines (NICE, 2004) state, *“there are wide variations in the provision of eating disorder services and models of service delivery throughout the UK”* (31). This is argued to be partially due to the need to allow for professional knowledge and clinical judgement within treatment approaches (Wilson & Shafran, 2005), along with the individual nature of care necessary required by service users (Kordy, Haug & Percevic, 2006). However, concerns have also been raised by experts within the field regarding the lack of standardisation of care along with the scarcity of research to support evidence-based practice (e.g., Couturier & Mahmood, 2009; Fairburn, 2005; Prestwood, 2009). Furthermore, Richard (2005) commented that not only are different practices used within eating disorders services, but our knowledge of the detail as to what is actually being implemented is severely limited, stating that, *“...disappointingly little is known about what actually happens in everyday clinical practice”* (p. 160).

The literature review presented in Chapter one highlights that these treatment uncertainties extend to the provision of mealtimes on specialist units. Specifically, there are a lack of recommendations concerning the implementation of mealtime care and, due to the lack of research within this area, the consistency of mealtime practices being implemented within eating disorders units remain unknown. With this lack of knowledge concerning mealtime treatment, coupled with the recognised need for clarity, and the concern regarding the limited effectiveness of treatment in general (Button & Warren, 2001; Fairburn & Harrison, 2003; Grilo & Mitchell, 2010; Löwe et al., 2001), it would appear essential that empirical studies are conducted to build a vision of those practices currently used. Only from this starting point, can recommendations be made towards evidence-based practice.

The aim of Study one was to determine the current mealtime practices being implemented across a sample of specialist eating disorders units within the United

Kingdom, via a web-based survey. Previous studies investigating health based practice have utilised this method to collect information directly from units regarding the practices that are implemented. For example, a recent study by Moor, Patterson, Kelly and Paleri (2010) sent email invites to appropriate members of a National Health Service (NHS) multidisciplinary team in order to build an understanding of current practices used within the care of head and neck cancer. Likewise, DiGiorgio, Glass and Arnkoff (2010) conducted a study using an online survey to identify under which circumstances therapists implemented Dialectical Behaviour Therapy. Based on the acknowledged scarcity of literature within this area and the paucity of clinical recommendation, it was hypothesised there would be variation both between and within currently administered eating disorders mealtime protocols.

3.2 Method

3.2.1 Participants

Sixty UK units providing care for all ages of individuals with eating disorders (NHS and independent) were contacted via email and invited to complete a survey. One month after the initial invitation, an email reminder was sent. The inclusion criteria included all those specialist units (both child and adolescent focussed and adult focussed) who provided meals on the unit for individuals with eating disorders. The survey was designed to be completed by any member of the team who regularly provided supervision during mealtimes. Twenty two units completed the survey, a response rate of 37%. Of the units that replied, 14 (63.6%) were NHS services, and the other 7 (31.8%) were independent units (one unit did not provide this information). Of the twenty two units, five (22.7%) provided care for those under eighteen years of age, ten (45.5%) for those over eighteen, and seven (31.8%) for all ages. The survey was returned from units providing care for the range of eating disorders (anorexia-restrictive and binge-purge, bulimia-purging and non-purging, binge eating disorder and EDNOS).

3.2.2 Procedure

The survey (Appendix F) was developed specifically for this study using a web application framework. It consisted of twenty six items which were derived following a thorough literature review of those factors capable of influencing meal intake, and after informal interviews with several academics and service providers. The survey was divided into four main sub-sections: service user characteristics, staff involvement, mealtime activities, and mealtime protocol. Survey questions were subjected to pilot evaluation by several eating disorders professionals, external to the study, for clarity and relevance of questions.

The majority of items required participants to select predetermined categorical responses, i.e. 'yes' or 'no', or 'always', 'often', 'sometimes', 'never'. Fourteen of the items asked participants to further explain their response by providing the rationale for why their unit provided care in that way. For example, if an answer of 'always', 'often' or 'sometimes' was provided to the question 'How often would any member of staff be present at a table but not eat?', participants were asked to explain the rationale behind this.

The survey was uploaded to a website where the survey could be completed either on-line via a link provided in the email or printed out and returned via post. All data generated were exported to the lead researcher via email, as no participants chose the latter alternative. Full ethical clearance was gained for this study.

3.2.3 Data analysis

Sixty eating disorder units were approached to take part, and a total of twenty two units responded to the survey (37%). Percentages, means and standard errors are reported where appropriate. Responses from the open-ended, qualitative items were used to provide examples and give further detail to quantitative categorical responses.

3.3 **Results**

In some cases, respondents did not respond to an item. When there are missing data, percentages refer to complete responses received.

3.3.1 Staff involvement with mealtime supervision

During mealtimes, ratios of staff to service users ranged from 1:1 to 1:10. Thirteen services (59%) reported that ward staff would at least sometimes sit with patients without themselves eating a meal. Further qualitative items provided reasons for this, including it being unit policy not to eat with patients, and due to personal choice (such as having plans to eat following their shift).

The majority of units (n = 20, 90.9%) reported at least sometimes having non-nursing members of staff eating with patients, 43% (n = 9) of those units said the non-nursing staff may at least sometimes serve the food. 'Non-nursing staff' mentioned as sometimes being present during meals included; researchers, social workers, doctors, psychotherapists, psychologists, physiotherapists, occupational therapists, service managers, other medical staff, dietician, in house cooks and care workers. Reasons for the variability of staffing involvement ranged from forming part of the treatment program (i.e., deliberately involving other members of the multidisciplinary team in meals) to lack of availability of nurses.

3.3.2 Pre and post meal-related activities

Out of the twenty two units that responded, three (13.6%) always offered an activity before a meal, these ranged from education based activities, exercise classes, relaxation and one to one sessions. Almost half of units (n = 10, 45.5%) always offered activities following meals. Some of the after-meal activities reported were; individual supervision, community meetings, support groups and specific meal-related reflection.

3.3.3 Mealtime practices

There were wide variations between units with regard to the timings associated with mealtimes; nine (40.9%) units reported asking patients to choose their meals on the day they were to be eaten, twelve (55.5%) stated that choices were made between one day and seven days in advance, and one (4.5%) said meals were chosen more than a week in advance. Differences also existed for time limits given to mealtimes. Eighteen (81.8%) units reported imposing a time limit, these ranged from thirty to sixty minutes

(mean = 42.6 minutes \pm 9.4). Nineteen (86.4%) units employed a designated rest period after meals, however this ranged from fifteen to sixty minutes (mean = 42.5 minutes \pm 15.4).

Qualitative responses indicated that there were differences between logistical arrangements of the dining rooms, such as variation in the number of tables. One commonality between units was the use of distraction; for example, nineteen (86.4%) units reported using either the radio and/or conversations during mealtimes.

Table 3.1: Findings from mealtime survey: Main differences in mealtime implementation between units

Summary of key variations in mealtime implementation across units
<ul style="list-style-type: none"> • Staff / service user ratios • Involvement of staff (i.e., whether nursing staff eat alongside service users, or if non-nursing staff are involved with meals) • Consistency of service users self-serving meals • Provision of activities prior to and post-meals • Timing of service user meal choice • Time allocated for meal completion and post-meal rest period • Arrangements of dining room (e.g., number of tables)

3.4 Discussion

The aim of the present study was to assess the implementation of mealtime protocols in UK eating disorders in-patient units. The results suggest that there are variations in the mealtime practices, both between and within, specialist eating disorders provisions. The key between-service differences were the staff to service user ratio, involvement of nursing staff in the meal (e.g., whether they ate with service users), timing (i.e., menu choice, meal completion and post meal resting time) and arrangement of the dining room (e.g., number of tables). Key within-service variations were the involvement of nursing staff in the meal (e.g., how often they ate with service users), involvement of non-nursing staff, and how often service users were able to self-serve their meals. The findings suggest that there is wide variation regarding how mealtimes are currently being

conducted across UK eating disorders units. It is acknowledged that the needs of the different specialities and age groups would require some level of variation in the treatment administered. However, it is suggested that the lack of consistency between and within responses represents variation beyond this assumed level, and instead is evidence of the lack of standardised practice currently being administered.

Furthermore, findings from non-clinical research into eating and mealtimes would appear to suggest that many of the areas of inconsistency within current eating disorders units' mealtime practices would be worthy of further investigation. First, the variation in staff members present in the dining rooms could be influential. For example, the number of people present within an eating environment has previously been noted to be associated with amount eaten amongst non-clinical individuals (Stroebele & de Castro, 2006) and subjective levels of enjoyment (Kristensen et al., 2002). This brings into question whether the number of staff and other service users present may influence the intake of service users. Additionally, the finding that different members of staff can be present during meals might also warrant future investigation, as previous research has identified the familiarity of those present to be capable of influencing intake during meals (e.g., Bellisle et al., 2009; Salvy et al., 2007; Salvy et al., 2008). Also, the impact that the presence or absence of staff has on in-patient eating requires investigation given that other studies conducted have found women to eat differing amounts depending on the intake of others present during meals (e.g., Hermans et al., 2009).

Alongside those present, it is possible that the way in which the meal is conducted may influence the intake of the service users. For example, studies which have previously identified the ambience of the eating environment as capable of influencing intake (Bell et al., 1994; Wansink, 2004) and meal satisfaction (Edwards et al., 2003; King et al., 2007) suggest that research may be necessary into factors such as the layout of the dining room (e.g., the use of a single versus multiple tables). Furthermore, studies have previously found distracting stimuli within the eating environment to influence the amount eaten (e.g., Bellisle & Dalix, 2001; Stroebele & de Castro, 2006; Sullivan, 2002), speed of

consumption (Blass et al., 2006) and enjoyment of the meal (Blumenthal, 2007). Therefore, considering the survey responses which mentioned the use of distractions in this study, research is warranted into the investigation of different types of distractions within clinical samples.

Other discrepancies found between units' responses, wherein there has been less relevant previous non-clinical research conducted, may also warrant future research in order to inform an optimum mealtime protocol within this context. For example, time allocated to finish meals and time allotted after meals to remain inactive ('sitting time') were seen to vary amongst responses, and could potentially have an influential impact upon service users' meal intake.

There are a number of methodological limitations of this present study which are worthy of consideration. First, information was not gathered as to who took part in this study. Due to this, this study was unable to take into consideration the work experience or job role of the individuals who completed the surveys. Moreover, there is a possibility that due to the different practices used by those individuals, the questions could have been interpreted differently by different people. For example, if it was a therapist answering the questions, they may have brought to mind different post-meal activities (e.g., one-to-one sessions) compared to a bank nursing staff member who may join service users watching television after meals. In relation to this, it may have been helpful to probe further into the types of activities offered. For instance, the responses given such as 'group sessions' and 'free time' cover a wide range of possibilities and explain little as to what service users do during this time. The questions asked and the detail given by the responses, were also insufficient to allow information to be gained as to whether routines were likely to change or if they varied significantly between service users, depending on their individual differences.

It would be of value to conduct a similar study wherein an adapted survey was implemented which considered the above limitations. Rewording of specific questions and probing for a higher level of detail could provide more detailed and useful responses.

Furthermore, it is possible that the distribution of the survey could be improved. In the present study, surveys were emailed to units. Often this meant that emails were sent to generic addresses, rather than a specific person. This may have led to the survey being overlooked, for example if members of staff perceived another to have already completed it. Future studies of this kind may benefit from contacting each unit prior to administering the survey in order to develop contacts. It is proposed that by sending the surveys to known individuals, a higher response rate might be gained.

Despite these limitations, a number of implications arise from this study. First, whilst variations seen between survey responses may, to some degree, be due to the flexibility needed to treat a range of service user needs (i.e. according to weight status or treatment stage), these responses are also likely to reflect differing opinions between units regarding best care practice. It is essential that there is recognition of the variation between units and subsequent implementation of systems by which eating disorders teams can learn from each other, such as visits between units, along with future research to inform evidence-based care. Second, within-unit differences could be addressed by increasing communication amongst staff members regarding practices implemented, for example, through staff discussions within interactive training sessions.

Chapter 4 : Study 2

Staff perspective of the implementation of meals
on in-patient eating disorders units

Chapter 4 - Study 2: Staff perspective of the implementation of meals on in-patient eating disorders units

The results of the survey in Chapter three highlight both within and between unit variations in the mealtime care given to eating disordered service users during mealtimes. Practices were seen to differ in many ways including the arrangement of the dining room, the familiarity and number of people present and their involvement in the service of the meal, the independence of the service users (in terms of the self-service of their meals), pre and post-meal activities and time limits given to the meals and rest periods after meals. A commonality between units was the use of some form of distraction (mainly conversation and radio) within the eating environment.

It was proposed that the variations described within Chapter three could be examined in more detail by consulting staff as to their views regarding the implemented practices. Exploring the personal accounts of eating disorders staff has previously provided useful insights into areas of treatment provision (e.g., Snell, Crowe & Jordan, 2010). Within Chapter four (Study 2) the perspectives of staff were sought to qualitatively explore the personal experience of providing mealtimes on eating disorders units. Three themes were identified from the interviews: Preparation, Role During Mealtime and Personal Barriers. The first of these themes reflected preparation required for successful implementation of meals. This included both the appreciation of specific mealtime training and the required preparation prior to each meal. The second theme reflected the role of the staff during the meals, including the strategies they used to aid service users in completing their meals. Lastly, the third theme revealed the potential barriers, connected to mealtimes, which were experienced by staff. Taken together these three themes are able to present a holistic view of the successes and difficulties of implementing meals from the personal perspectives of staff present during in-patient treatment.

Chapter four forms study 2 in the following article: Long, S., Wallis, D. J., Leung, N., Arcelus, J., Meyer, C. (*in press*). Mealtimes on eating disorders wards: a two study investigation. *International Journal of Eating Disorders*. DOI: 10.1002/eat.20916.

4.1 Introduction

Chapter three identified variations within the implementation of mealtime care on eating disorders units, both between different services and within the practices of single units. In order to explore the variation which existed within units, it was suggested that direct consultation with staff was necessary. The reasoning behind this was twofold. First, this could aid understanding of those practices currently in use, building on the currently limited knowledge of mealtime provisions. Second, it has been recognised that when developing new interventions and protocols, staff adherence is more effective when they have been consulted prior to its development (e.g., Micevski & McCann, 2005). This is of clinical relevance seeing that this lack of guidance has been identified as an important omission within the day to day management of eating disorders units (Couturier & Mahmood, 2009; Prestwood, 2009).

Although the important contribution made by ward staff to the provision of treatment has been recognised (Mehler & Crews, 2001; Newell, 2004) and studies exploring issues associated with eating disorders treatment provision from the perspective of staff have been conducted by some (e.g., Snell, Crowe & Jordan, 2010; Ramjan, 2004; Warren, Crowley, Olivardia & Schoen, 2009), overall a lack of empirical research into the experience of providing care has been noted (Ryan, Malson, Clarke, Anderson & Kohn, 2006). Nevertheless, of those studies that have been conducted, mealtimes care has been acknowledged to be a unique and demanding part of the role of the nurse on eating disordered units (Newell, 2004). For instance, Ryan and Golden (2006) inferred that hardships were experienced by staff when implementing the necessary observation and support during mealtimes. Participants described having to watch each mouthful in order to check service users' completion of meals. They found nurses to perceive themselves to be disciplinarians, acting authoritatively over service users. This strict persona has been linked to control issues, wherein nurses actively try to retain control over service users, a process which Ramjan (2004) reported could lead to an atmosphere of 'mutual distrust', which they commented was specifically prevalent during the provision of food. Likewise,

King and Turner (2000) found the behaviour of service users during mealtimes could result in staff holding negative judgements towards them.

Despite studies which have identified mealtimes as potentially difficult times for staff of eating disorders units (e.g., King & Turner, 2000), and the call for the development of specific mealtime protocols (Prestwood, 2009), no studies have specifically focused on staff perspectives of the practices they use, and the difficulties they perceive, in relation to mealtimes. It is proposed that by developing our understanding of the specific hardships faced, these areas can be addressed during the development of new mealtime interventions and protocols. Therefore, it is the aim of this study to investigate the opinions of staff towards the care they implement during mealtimes. The goals are to highlight techniques and strategies which are found to be useful, along with the structures necessary in order to deliver care and address any difficulties they are faced with.

4.2 Method

4.2.1 Participants

Three of the units originally recruited in Study one were approached to participate in the service provider interviews. Two were specialist NHS eating disorders units and one was an independent specialist eating disorders unit. The units catered for a range of ages, from under eighteen (beginning at eleven years old) through to adult services.

Individual interviews were conducted with sixteen service providers (two males and fourteen females) who had varying lengths of experience in providing in-patient care. The survey conducted in Study one found that staff from a variety of different disciplines undertook mealtime supervision. Therefore, all members of the multidisciplinary team present during mealtimes on the ward were invited to participate. The inclusion criterion was that interviews were conducted with only those who offered support and were present in mealtimes. Participants included nurses, psychologists, nursing assistants, student nurses, housekeepers, dieticians, and ward managers. Due to confidentiality and anonymity, no further reference to participants' roles will be made within this study report.

4.2.2 Procedure

Following full NHS ethical clearance, the ward managers of each participating unit were approached regarding the study, and the nature of the research was explained. Copies of a detailed information sheet were left with the ward managers to distribute to ward staff, and volunteers subsequently contacted the researcher.

Prior to each interview, a verbal explanation of the study was provided alongside a written consent sheet. Assurance of individual confidentiality and anonymity was given and participants were reassured that the data were part of a research study (not part of a clinical audit) and that their units would not be individually identified.

The semi-structured interview schedule (Appendix G) was developed to investigate staff perceptions of mealtimes. Some initial broad areas were identified as a result of the previous survey and the research literature. However, these allowed sufficient flexibility to capture issues that might be unique to units, and also enabled the expression of individual opinions of staff. Clear and open-ended questions were used as described by Kvale and Brinkmann (2008). When participants referred to other service users by name, or commented on features of the unit which could be used to identify individuals or the ward, these details were made anonymous. Interviews lasted no longer than sixty minutes, were recorded via an audio recording device and stored securely.

4.2.3 Data analysis

Audio recordings of the interviews were transcribed verbatim. When it transpired that no significant new themes were being identified from the data, a decision was made to cease data collection at sixteen interviews, as advised by Braun and Clarke (2006). The data were analysed using thematic analysis as also described by Braun and Clarke (2006), using the qualitative data analysis software program NVivo (QSR International Pty. Ltd., 2002). As is commonly reported (Colton & Pistrang, 2004), the validity of the analysis was checked by an independent rater, who reviewed a sub-set of the transcripts (roughly 10%) and allocated themes independently. Subsequently, the themes were

modified to reach a consensus between the independent rater and the lead researcher, as to the 'best fit' of suitable characteristics of each theme and theme names.

4.3 Results

Overall, three main themes were identified; Preparation, Role During Mealtimes and Personal Barriers. The first two themes explored the strategies which are used, and found helpful during mealtimes. The third theme identified the difficulties which staff face when implementing mealtimes. A number of subthemes made up the umbrella terms of the themes; these can be seen in Table 4.1. Each is explored in turn below and illustrated through quotes from interviewees.

Table 4.1: Themes and sub-themes of staff interviews

Theme	Sub-theme
Preparation	Mealtime training Pre-meal preparation
Role during mealtime	Teamwork Successful strategies implemented
Personal barriers	Feelings of unease towards observation Feeling of anxiety regarding conflict Feelings of inadequacy Feelings of distrust Feelings of frustration

4.3.1 Preparation

The first theme identified those factors perceived as necessary for successful provision of mealtimes. There was a distinction made between the importance of mealtime training in general and the need for careful forethought before each individual meal.

4.3.1.1 *Mealtime training*

Staff advocated the importance of good mealtime-specific training, in order to manage mealtimes effectively. Individuals who had received this type of training reported finding it helpful, such as Participant 2 who commented they were not *“expected to jump right in and help people.”* A useful tool, which was mentioned to be utilised during training, was that of role play. Interestingly, Participant 12 described the use of role play as being *“naughty”*, giving insight into the informal way in which role play was used as a technique.

Regardless of this acknowledgement of the positive function of specific mealtime training, a lack of formal training packages was highlighted by a number of staff. Instead a more informal style was mentioned, Participant 8 expressed:

“Before I started, the girls [other staff members] all told me what to expect. I felt quite anxious. I was sort of prepped but I was still kind of very anxious.”

Specifically, opportunities to organise training (due to time pressures and high staff turnover), were said to be scarce. This lack of opportunity was seen to create difficulties relating to consistencies of practice.

Participant 2: *“...we’ve got quite a high staff turnover. So you feel like you’re constantly starting over again. You know the new staff are letting the patients get away with more.”*

4.3.1.2 *Pre-meal preparation*

Being able to forward-plan meals was seen as a necessity for many staff interviewed. They stressed how vital it was to ensure meals were set up correctly beforehand, in order for the meal to run smoothly. Participant 11 explained that:

“...if you walk in there and you have forgotten something, like if the salt’s missing, there could be a bit of a trauma on top of what is already a very stressful event.”

Alongside this, it was deemed important that preparation of the meals should include knowing in advance which service user(s) each member of staff was meant to supervise, and any particular goals that individual may have to work towards. Additionally, care plans were often cited as being helpful in order to clarify to service users what they were required to do during mealtimes and why.

Participant 1: *“...on admission the care plan is produced so that the patient knows exactly what is expected of them in the dining room.”*

4.3.2 Role During Mealtimes

The second theme captured those elements involved in the role of staff whilst implementing support during mealtimes. Interviewees described their role both as individuals and as members of a team. Both descriptions were seen to be underpinned by knowledge of, and empathy towards those with eating disorders.

4.3.2.1 *Teamwork*

Staff explained that working as a team was essential in ensuring that staff felt supported and service users received the correct level of care. Many interviews emphasised that different staff, of the same level (nurses and nursing assistants), should have clear roles and responsibilities during the mealtimes. For example, Participant 2 recognised the role of another team member in allowing them to focus on offering mealtime support:

“There’s always like a charge nurse as well, who will oversee everything in the dining room...So we just basically sit at a table and offer a supportive role.”

Moreover, general support from existing staff was seen as essential to new staff.

Participant 1: *"I mean there's always trained staff in there...They [new staff] are not ever left to just be on a table."*

There were mixed views regarding the encouragement of individuals from a range of disciplines, and different staffing levels to be part of the mealtimes. Those in favour for this commented on it being able to build team cohesiveness in the eyes of the service users, so that the negative experience of meals are not always associated with nurses, along with enabling other staff members (such as dieticians and doctors) to gain firsthand *"the reality of their patients' struggle"* (Participant 13). However, the same staff member also explained an example wherein a psychologist's presence was believed, by some, to cross therapeutic boundaries resulting in concern regarding the effect this would have on their relationship with the service users.

4.3.2.2 Successful strategies implemented

Individually, staff saw their role primarily to provide support to service users, to *"encourage them on"* (Participant 2). As part of being supportive, interviewees recognised the need to comfort service users, and try to calm them when anxieties were high.

Participant 15: *"I think it's sometimes quite helpful just to remind people to concentrate on their breathing, lower their shoulders...."*

Being supportive was seen to be a balance between trying to rationalise with an individual's anxieties whilst not focusing on the food:

Participant 9: *"Sometimes they'll say...I'm not going to be able to complete this. Then we will remind them that they can't rely on that feeling of being full...and remind them that a dietician has looked at the food."*

Some staff claimed that the best way to provide support was to attempt to use distraction to make it easier for service users to eat. This appeared to originate from that feeling that individuals with eating disorders were unable to cope with dealing with the anxieties associated with food.

Participant 13: *"Talking about your feelings is...they're there, but take them away from mealtimes. Trying to eat and dealing with them at the same time is too much."*

A key part of the role was being able to teach new skills related to eating meals. This was likened to a mother teaching her child to eat for the first time, a powerful image of the dynamics within the dining room:

Participant 7: *"You have to watch them closely, it's very important. It's like teaching a child to eat again. They are like children"*.

Interviewees acknowledged that part of teaching skills to service users included the need to be firm and challenge service users when they displayed behaviours which were unhelpful to their recovery, such as attempting to hide or destroy their food. This role was seen to require an element of firmness, which Participant 11 commented was a skill they had to learn, as they had not used it previously within their nursing career, it did not *"come that naturally."*

4.3.3 Personal Barriers

A number of sub-themes within the umbrella term of Personal Barriers were identified, all potentially creating difficulties for mealtime provision in some respect. Each is explored in turn below and illustrated through quotes from interviewees.

4.3.3.1 *Feelings of unease towards observation*

The need to observe service users' eating, and correct them when behaviour was seen to hinder their progress, was often experienced as having to be 'harsh' on patients, and 'punishing' of them.

Participant 11: *"When I first started, you do supervision...it feels very much like you are a prison officer. You're sitting there guarding them. Which isn't what I came into nursing to do."*

As seen above, for some, this created conflict. On one hand interviewees stated that they had chosen to work within a hospital setting in order to care for people and aid their recovery. Whereas the situation within the dining room could feel as though they were at odds with service users by making their situation worse and causing them distress.

4.3.3.2 *Feelings of anxiety regarding conflict*

Staff reported experiencing anxiety towards the possible conflicts and arguments which could result from the highly stressful mealtime environment. Participant 11 when describing the dining room explained:

"The stress is so high in there. You could cut the tension, it's that bad."

Some staff highlighted how when service users were distressed, this meant it was more of an unpleasant atmosphere for staff. As a result, interviewees saw their role as trying to 'keep the peace', not just to calm the atmosphere for service users but to lessen the impact of the negative environment on themselves.

Participant 15: *"It's stressful when people are stressed."*

Participant 3: *"You don't want to upset them."*

This fear of conflict and the desire to reduce confrontation prompted certain staff to attempt to avoid contentious issues or adapt their actions in order to avoid arguments. For example when handing out fruit, Participant 9 commented that giving bananas (rather than another fruit) to the service users caused distress (due to them being perceived to be of higher fat content). Therefore, they commented:

"You can mix the fruit. But...because of all the anxiety it causes, staff are trying to put out the same fruit."

4.3.3.3 Feelings of inadequacy

For a number of staff members there was a lack of belief in their ability to provide care during meals. Often, although not exclusively, these feelings of inadequacies were associated with being new on the ward.

Participant 3; *"I was very stressed when I first started. Your anxieties are about not knowing what to say to the patients."*

Participants highlighted a number of particular areas wherein they felt under-skilled. For example, Participant 8 admitted not having the knowledge of how best to distract individuals whilst eating, even though they had been instructed to do this:

"I was told to distract them by talking...I didn't really know what to say."

An additional key issue that staff contended with was whether they should eat during the mealtimes. Although many staff members recognised eating alongside service users as important in providing role models to facilitate the normalisation of the situation, staff often commented they felt uncomfortable doing so.

Participant 8; *"I don't like to eat with them. I feel like they are all watching me. But sometimes I know it is good for them...I don't eat with them."*

Another uncertainty was whether staff were adequately addressing service users' mealtime distress. An example of this was given by Participant 14 who explained that they felt individuals' distress could not be directly dealt with by staff because efforts were made *not* to talk about difficulties experienced during meals, leaving them feeling unsure about how the service users were feeling:

"...it [service user distress] doesn't seem to be spoken about, it seems quite contained. I don't know where the distress is."

Staff also described feeling anxious about the reaction of other staff towards the care they implemented. For example, they were worried that other staff members in the dining room could judge their care to be wrong, and thus 'discredit them'.

Participant 3: *"I think it's quite anxiety provoking for staff, especially if it's quiet...I suppose they are probably worried about what the other staff will think of what they are saying to the patients."*

4.3.3.4 Feelings of distrust

Occasionally, staff admitted holding a more negative view towards service users during mealtimes than they would do at other times of the day. Service users were viewed with caution as it was perceived that they would attempt to split the team and pitch one member of staff against another. For example, Participant 4 used the terms *"rebellious"* and *"dominating"* to describe patients. Likewise, Participant 1 stated:

"...if they think they can get away with it, they will."

It was acknowledged that many service users had been in treatment previously and thus there was a belief by staff that they now knew how to 'play the system'. Participant 1 described them as "*experienced patients*" who were capable of making the job of the staff more difficult. Similarly Participant 4 described the culture as one of 'us' and 'them'. A striking example of this was seen in the aggressive language chosen by one interviewee when describing the process of challenging eating disordered behaviour. They refer to the altering balance resulting from staff taking control away from the service users:

Participant 7: "*...some we crack within a week.*"

4.3.3.5 *Feelings of frustration*

Another personal barrier which was mentioned within many of the interviews was the feelings of frustration which resulted from the lack of consistency within the care provided. Participant 10 acknowledged that staff would often do things differently, and furthermore that service users often used these inconsistencies to their own advantage to undermine individuals:

"I think one of the hardest things is you do get staff doing different things in the dining room...you will say [to service users] things like, can you not do that please?...Then they may go, but so and so let me."

Moreover, frustration was also seen to result from the lack of impact staff felt they were able to make within the mealtime protocols. Staff commented that they could recognise changes which could be made (such as offering more activities and asking service users to have more responsibilities). However, these suggestions were often followed by feelings of disempowerment in the interviews, as though the changes would not be possible. This is shown in a quote by Participant 8 who, although recognised the

potential for pre-meal activities to reduce service users' anxieties, concluded it may not be practically possible to offer such activities before a meal.

"I guess it might be something that can't really be changed."

4.3.4 Summary

In summary, the three themes revealed within this current Chapter highlight first, the preparation required and second, the roles staff take in order for mealtime care to be implemented successfully. Lastly, the third theme highlights the different barriers that staff face during the implementation of mealtimes. In terms of preparation, the interviews drew attention to the importance of specific mealtime training to teach staff to recognise, and gain confidence addressing, behaviours which are commonly observed in service users. Despite this, training was believed by some to be provided ineffectively. Additionally, staff reported needing to individually prepare for meals beforehand, both by identifying which service user(s) they were to supervise and by ensuring the dining room was set up correctly. The second theme related to the roles of staff, included recognition of how staff as individuals implemented care during mealtimes, along with emphasising the need to work cohesively with others as a team. Alongside this, staff recognised the difficulties they faced, from coming to terms with their role within the dining room, to feeling unsure about the care they were implementing, to the frustrations of recognising the need, but being unable to implement, change within the mealtime protocol.

4.4 Discussion

The current study was conducted to provide detailed qualitative exploration of the implementation of mealtimes from the perspectives of staff. Although previous research has suggested that staff dislike having to adhere to strict protocol (e.g., King & Turner 2000), the current study highlights the value put upon specific mealtime-related training and guidance for both new and existing staff. This supports Prestwood's (2009) call for mealtime-specific formal training. Although other studies have highlighted the need for sufficient resources and training to be provided to staff of eating disorders units (Ryan et

al., 2006; Warren et al., 2009), to date this is the first empirical study to draw attention to the need for specific mealtime provisions.

It was notable that many of those interviewed drew attention to the importance of working within, and gaining the support from, the wider team, as has previously been noted by others (de la Rie, Noordenbos, Donker & van Furth, 2008; Micevski & McCann, 2005). Additionally, interviewees explained their individual roles within the team. The consideration given to meals was seen to begin prior to the actual meals being served. For instance, many of the interviewees recognised the value of attending to details within the dining room (e.g., having the correct condiments), before service users entered to begin a meal. What was not clear from the current interviews was to what degree this was due to a belief that structure and correct routine benefited the recovery of the service users, as opposed to being preferred by staff for other reasons, such as playing into service users' desire for routine (i.e., not wanting to "*upset them*" - Participant 3). Alongside this, for some it was recognised that there were also benefits to acknowledging, prior to the start of meals, which service user(s) they were to observe. This came from the understanding that, during mealtimes, service users demanded individually tailored approaches, as has been noted by others when commenting on eating disorders interventions in general (Reid, William, Burr & Hammersley, 2008).

Staff mentioned utilising a wide variety of strategies to encourage service users to eat during meals. Primarily, staff viewed their role, within the dining room, to be one of giving support, and providing encouragement. This encouragement was often seen to take the form of practical advice, such as encouraging service users to engage in reasoning, reflective thinking or relaxation, as other studies have previously noted (e.g., Heinicke, Paxton, McLean & Wertheim, 2007). Alongside this, staff mentioned having to teach service users skills related to eating. Within the interviews this aspect of the role appeared to be associated with maternal feelings towards service users, also identified in other qualitative studies (e.g., Gremillion, 2003). For example, Ryan et al. (2006) recorded staff to use a 'firm but fair' approach reminiscent of that of a mother and child,

whilst Wright (2010) commented that the feeding and nurturing role that is required of staff lends itself to a degree of 'maternalism'.

This study also replicated the findings of Ryan and Golden (2006) who found that the required surveillance during mealtimes resulted in feelings of awkwardness and discomfort, as though staff were acting against service users. Along with this unease, during this study, staff were seen to direct negativity towards those receiving care. Struggles between staff and service users were seen to be characteristic of mealtimes. Likewise, the experience of an 'us' and 'them' culture, and the struggle for control within the general eating disorders care environment has been reported previously (King & Turner, 2000; Ramjan, 2004). It seems possible that frustrations of the staff resulting from having to care for those who are seemingly impervious to treatment, are transferred into negativity towards the service users. For staff, mealtimes were also seen to represent situations which were incongruent to their initial ideals of providing care. It is possible their beliefs and desires to nurture and support as carers, and their apparent failure to do so, internalise and become personal failure.

The difficulties expressed by staff appear capable of interfering with the care provided. For example, in order to side-step potentially distressing conversation, sensitive issues are seen to be avoided. There was a perception that mealtimes represented times of unavoidable upset, therefore to exacerbate this by asking service users directly about their difficulties, would only make a difficult situation worse. Frustrations also existed between staff members due to inconsistent practices implemented. Whilst it was acknowledged that flexibility was necessary in order to provide person-centred care, staff complained of having their care undermined by others who implemented mealtime care differently. Possibly underlying these problems, there were obvious uncertainties amongst staff as to the best practice to implement. Staff admitted not having all the answers, and feeling underprepared. On occasions, examples were given wherein, on reflection, staff commented they would have acted differently. This general lack of confidence regarding provisions of care has been noted elsewhere (e.g., King & Turner, 2000; Ramjan, 2004,

Ryan & Golden, 2006). Specifically, Vandereycken (2003) acknowledged that in-patient eating disorders treatment delivery lacks suitable consideration of best practice. Similarly to that described by King and Turner (2000), staff expressed feeling disempowered in regards to implementing change in mealtime practice, despite holding expertise which could be drawn upon, and recognising areas which could benefit from alteration. Service providers desired platforms from which they would explore these areas, a freedom to feedback and to be constructively critical of theirs and others' practices.

It is true that these findings, as with any qualitative research, need to be approached with caution. The length and breadth of staff experience was not recorded. Whilst qualitative methods such as these are not meant to form a representative view of the topic, as one would expect from quantitative work, it may have been helpful to view individuals' responses against their length of experience. Despite generalisation not being possible, the themes generated are useful in suggesting clinical implications and further investigation in the area.

Clinical implications of this study would seem to point towards addressing these barriers within specific regular mealtime implementation training for all staff, along with ensuring clear instructions were available for new and non-permanent staff to access prior to each meal.

Alongside group training, it is a recommendation of this study that time is invested in encouraging staff to internally evaluate their own strategies used and the feelings that are aroused during mealtimes. It appears important that staff recognise any possible negative feelings which they harbour, and reflect on how these may be affecting the care provided to service users. Providing space within group situations and individual supervisions wherein any concerns can be shared may help to dissipate existing anxieties.

Continued research is necessary in order to further evaluate current practices used by staff of in-patient eating disorders units during mealtimes. For example, additional exploration is required to assess variations within care provisions, such as the

involvement of non-nursing staff and variations within the arrangement of the dining room. For example, during these interviews, as was found within the survey of Chapter three, staff reported using distraction during mealtimes as a strategy to aid service users to eat. However, as mentioned previously within the current thesis, there has been little research conducted to investigate such practices. Therefore, it is recommended that distraction, as a practice which appears to be commonly used, becomes the focus of future investigation.

In summary, valuable insight has been gained regarding the mealtime practices implemented by staff. This Chapter concludes that there is a need for the development of evidence-based structured mealtime training for staff of eating disorders in-patient units. Introducing formal mealtime training would aid the sharing of expertise, along with overcoming some of the barriers that staff appear to experience.

Chapter 5 : Study 3

Service users' perspectives of mealtimes on eating disorders units

Chapter 5 - Study 3: Service users' perspectives of mealtimes on eating disorders units

Chapters three and four gave insight into the s used within eating disorders units, and the personal difficulties which staff described as being associated with the implementation of mealtime care. Staff were seen to use a range of different techniques to encourage those with eating disorders to complete their meals. Although it is clear that staff hold expertise within this area, a number of the staff interviewed stated that, at times, they could be unsure how and when to implement certain techniques. Alongside this, staff encountered resistance from service users which could either be directed internally and experienced as personal failure or externalised, resulting in staff holding a negative view of service users.

The present Chapter describes a study wherein similar individual semi-structured interviews were conducted with service users of eating disorders units. Previous studies have utilised similar qualitative methods to explore aspects of care from the perspective of those receiving treatment (e.g., Reid et al., 2008). The aim of this study was to further explore in-patient mealtimes, in order to gain the personal perspective of current service users.

Chapter five has been accepted as: Long, S., Wallis, D., Leung, N., & Meyer, C. (*in press*). "All eyes are on you": anorexia nervosa patient perspectives on in-patient mealtimes. *Journal of Health Psychology*. DOI: 10.1177/1359105311419270.

5.1 Introduction

The staff interviews in the previous Chapter demonstrated both the skills used and difficulties experienced by staff when implementing mealtimes on eating disorders units. The interviewees acknowledged that, at times, they could be unsure how to encourage service users to eat during meals. Individuals questioned the use and effectiveness of certain techniques and admitted lacking in confidence administering care as a result. In light of the current limitations of treatment approaches (Ben-Tovim et al., 2003), Chapter four along with this current study, used a triangulation approach in order to gain a comprehensive picture of in-patient mealtimes. This method has been suggested previously when considering the effectiveness of other areas of eating disorders treatment (Ryan et al., 2006). By attempting to capture the perspectives of staff and service users, it should be possible to view each alongside the other. This approach is similar to that used by de la Rie et al. (2008), who administered questionnaires to both therapists and service users in order to gather information on the quality of treatment from the perspective of both parties. As part of their conclusion de la Rie et al. (2008) argued that optimal treatment of individuals with eating disorders will only be facilitated when evidence from the service providers' and users' perspectives are explored together and integrated.

Obtaining the views of service users regarding their treatment has been identified as important for optimising clinical outcome (Clinton, Bjorck, Sohlberg & Norring, 2004; de la Rie et al., 2008). In line with this, a number of studies have been conducted to investigate the opinions of service users regarding the care they receive on eating disorders units. Reid et al., (2008) interviewed out-patients and found that they desired treatment which provides practical support to empower them to change their own behaviour, rather than one which imposes change upon their behaviour. A similar finding related to motivation was reported by Colton and Pistrang (2004), who conducted interviews with service users regarding their experience of in-patient treatment. They concluded that the stages of change model could be used as a framework within which the experience of treatment could be understood from the perspective of service users.

Interviewees also voiced conflict regarding whether they were ready to 'give up' their eating disorders. Semi-structured interviews were also utilised by Eivors, Button, Warner and Turner (2003) to examine reasons behind service user drop out from treatment. Similarly, studies have been conducted to explore personal accounts of recovery from anorexia (e.g., Tozzi, Sullivan, Fear, McKenzie & Bulik, 2003).

The previous Chapters of this thesis have discussed the care received at mealtimes to be an essential part of in-patient treatment. Additionally, mealtimes are acknowledged to be times of high anxiety for individuals with eating disorders. Therefore, as has been noted elsewhere (Guarda, 2008), it is a primary goal of treatment to overcome such difficulties related to eating whilst undergoing weight restoration. Studies that have investigated treatment as a whole have concluded that the support received at mealtimes is a significant predictor of service user treatment satisfaction (Clinton et al., 2004; Federici & Kaplan, 2008; Offord, Turner & Cooper, 2006). However, few studies have looked specifically at mealtime support, with the aim of understanding such practices from the perspective of service users. This is of concern, not least because it has been argued that the nutritional restoration undertaken during in-patient treatment does not necessarily change core eating difficulties, and leaves weight recovered individuals vulnerable to relapse (Sysko et al., 2005).

Within the literature, it can be seen that consultation with service users regarding their opinions of mealtime care is evident only after there has been some form of manipulation to the implementation of the mealtimes. Sandy et al. (2007) found that a self-service cafeteria-style mealtime protocol provided service users with a greater sense of responsibility and enabled them to learn transferable skills applicable after discharge. Similarly, Lock (2009) demonstrated that patient-involved meal preparation significantly increased the motivation of in-patients to eat meals. With regard to post-meal anxieties, Breiner (2003) devised distraction activities for use after meals, which in-patients found to be helpful, and Shapiro et al. (2008) found that in-patients experienced less self-reported

postprandial anxiety and increased relaxation after engaging in post-meal relaxation training.

In summary, despite the importance of mealtimes within the treatment of those with eating disorders, there is a scarcity of research eliciting service users' views of in-patient mealtimes. Of those studies which have gained personal views of mealtimes, evaluation has been limited to that of the specific aspects of the meal that have been altered. In contrast to previous literature which has evaluated individuals' perspectives after some form of change to mealtime protocol (e.g., Sandy et al. 2007), the aim of this current study was to gain a general view of currently implemented mealtimes.

5.2 Method

5.2.1 Participants

Following ethical clearance and informed consent, current in-patient service users were recruited from three NHS and one independent eating disorders service. Five participants were recruited from the independent unit, 6 were from the three NHS units. All units provided in-patient care that included meals as part of the daily treatment. Across the four units, a total of twelve service users volunteered to be interviewed. All participants were female, with a mean age of twenty two years one month (s.d.= 3.74, range = 17.4-29.5 years) and all had received a diagnosis of anorexia nervosa, restricting sub-type. The inclusion criterion was that service users should have been receiving treatment that included participation in group meals in the dining room for a period longer than two weeks (generally thought of as the admission period). The advice of ward staff was sought in order to identify any volunteers who were unsuitable for recruitment to the study due to either medical reasons or other reasons associated with their treatment.

5.2.2 Procedure

Ward managers of each participating unit were contacted and the nature of the study was explained. Copies of the information sheet were distributed to suitable individuals by the relevant ward managers. Interviews were held one-to-one in private

rooms within the eating disorders units. Prior to each interview, the lead researcher provided a further verbal explanation of the interview, along with a written informed consent sheet. Assurance of individual confidentiality and anonymity was given and participants were reassured that responses would not affect their treatment in any way. Interviewees were informed that they could end the interview at any point if they deemed it necessary. It was also made clear that participants would be able to speak to a member of their therapy team if, during or after the interview, any issues emerged that they wished to discuss in more depth.

As has been used in previous studies (e.g., Jones, Evans, Bamford & Ford, 2008), individual semi-structured interviews were conducted, each lasting up to sixty minutes. A schedule was developed with the broad purpose of investigating mealtimes (Appendix H). This was designed in a way that permitted the flexibility to follow up interesting responses and unplanned issues, whilst also keeping participants focussed on the topic. The researcher began the interview with the open question, *“tell me about your experiences of mealtimes as an in-patient”*, and then continued to develop this topic further through clear, open questions as described by Kvale and Brinkmann (2008). Participants were encouraged to think about factors they felt influenced their experience of meals on the unit and were prompted to think about how they perceived meals when they first arrived compared to how they perceived meals at a later stage in their treatment. If participants named people, or commented on features of the unit which could be used to identify individuals or wards, these details were made anonymous. Interviews were recorded via an audio recording device and stored securely in accordance with the Data Protection Act 1998.

5.2.3 Data analysis

The audio recordings of the interviews were transcribed verbatim and transferred to the qualitative data analysis software program NVivo (QSR International Pty. Ltd., 2002). Thematic analysis was conducted, following the steps described by Braun and Clarke (2006): transcribing the raw data, generating initial codes, searching for themes

across codes, reviewing themes in light of extracted codes and main data set, and identifying suitable names for themes. Interviews were brought to a close when it was noted that no significant new themes were emerging, as is common practice (Colton & Pistrang, 2004). In order to check the validity of the analysis, a second independent rater reviewed a selection of the transcripts (two and a half transcripts, roughly 20%) and the themes allocated. Following discussions, the themes were modified until a consensus was reached regarding the 'best fit' of suitable characteristics of each theme and theme names.

5.3 Results

The analysis revealed three main themes: Mealtime Delivery, Individual Outcomes, and Mealtime Characteristics. All three themes contain sub-themes (Table 5.1), which are described below. Individual participant quotations are used to illustrate each theme.

Table 5.1: Themes and sub-themes of service user interviews

Theme	Sub-theme
Mealtime delivery	Diner room organisation Timing Environmental distraction Conduct of staff Food provision
Individual outcomes	Physical Cognitive Emotional

Mealtime characteristics

Battleground

Disengagement

Ideas for improvement

5.3.1 Mealtime Delivery

The interviews revealed a number of externally implemented factors that could alter the mealtime experience for service users. These included the following: dining room organisation, meal timings, distractions, conduct of staff, and food provision. Details for each individual sub-theme are described below.

5.3.1.1 *Dining room organisation*

The physical layout of the dining room was identified as important, with factors such as configuration of tables, their size, shape and distance from one another creating different dining experiences. For example Participant 2 reported:

“...it does feel like a slightly different thing, to be on the small table compared to the big table.”

5.3.1.2 *Timing*

Service users commented that their meals were often constrained by the time frame given to them; they often felt rushed and had to clock watch to keep to time. Furthermore, when time schedules were not adhered to (e.g., a delayed start to the meal) anxieties could easily become heightened, especially when the explanation for any delay was considered to be insufficient. In relation to such situations Participant 9 said:

“[If there is a delay] everyone can get a bit anxious, asking what's happening.”

5.3.1.3 Environmental distraction

As part of the delivery of treatment, staff were reported to use a number of distractions in order to ease the anxiety surrounding mealtimes, including deliberate engagement in conversation and having a radio on. Participant 4 reported:

“...it [the radio] does help to stop things seeming so scary. With the radio on it feels a bit more normal and it’s not just about the eating then.”

However, distraction was not always viewed as helpful. Participant 1 commented that at times distractions held them back:

“There are conversations as I’ve said. But that wouldn’t have been helpful today, it would have slowed me down.”

5.3.1.4 Conduct of staff

Interviewees commented that the behaviour of staff during the meal had a significant impact on their mealtime experience. Most of those interviewed made reference to staff eating alongside service users, and how this could be beneficial, although this was something not consistently practised within treatment. Participant 11 claimed:

“...to see someone eating what I’ve got in a normal manner is very beneficial...It doesn’t often happen, but some people do eat with us.”

Whilst many interviewees recognised that staff provided support during meals, they also drew attention to the variation which existed regarding the care given. Within units, staff were described as having different approaches, which patients said could cause difficulties for them. For example, Participant 7 explained:

“If you run out of time, you get given a supplement...well it depends on which nurses are on. Some give a little bit of extra leeway.”

5.3.1.5 Food provision

A number of responses made reference to the limited menu choice, such as there being only one vegetarian option, no vegan options and frequent repetition of meals. Furthermore, the quality of food was discussed as being, in many cases, of poor quality. The use of processed foods, unsatisfactory temperatures and unappetising presentation of meals were all reported. Participant 1 felt that mealtimes would be more enjoyable if the food was more flavoursome. They stated:

“...it would help a lot if it was nice. If it stimulated your taste buds it would be ok.”

Likewise, strange combinations of food were found to make meal completion more difficult. For example, Participant 11 drew attention to what they felt was a combination of food which was not reflective of meals outside of the unit by asking the interviewer:

“...if you were to have pasta, you wouldn't have a portion of rice with it would you?”

5.3.2 Individual Outcomes

The second theme identified the emotions, cognitions, behaviours and physical sensations experienced by the individuals during meals. These four elements are described within the sub-themes below.

5.3.2.1 Physical

Individuals commented on feeling very physically uncomfortable during mealtimes; many stated that they felt full and fat during meals. Participant 11 claimed that fullness was their *“main problem.”* They went on to say it sometimes feels like they cannot, *“fit any more in.”* The quote below by Participant 1 demonstrates the sickness and pain caused by

eating, and furthermore, how this participant felt that staff members were unable to truly understand their discomfort:

“They say it’s psychological, you know, all in the mind...The fact that you feel sick with it...I’ve tried to explain a couple of times, and it’s a waste of time, because clearly it’s not something they can do anything about.”

5.3.2.2 Cognitive

Individuals commonly identified their thought processes as being problematic during mealtimes. Participant 11 explained how, when faced with a meal, they would instinctively break it down:

“...take a sponge [cake], my brain automatically separates that sponge out to the eggs, the butter, the sugar...”

This service user explained that this made the item harder to eat as they were focusing on the fats and sugars within the food. General preoccupations with food were also described. Participant 5 stated that food was:

“...the only thing you think of in here.”

Service users expressed concern that staff did not provide sufficient support to help them through these difficulties and there was a general feeling that although staff may want to assist, they were ultimately incapable of truly understanding the patients’ *“bad thoughts”*. This is illustrated by a statement from Participant 5:

“They probably know from reading about it, but they don’t know from experience. So it’s not like they know how we deal with it.”

One particularly striking example of a negative cognition was given by Participant 11 who stated that forcing oneself to think about a meal after eating was a form of “*self harm*” in which they participated.

5.3.2.3 *Emotional*

Most service users, to some degree, reported anxiety during the mealtimes, especially when new on the ward. For example Participant 4 said they:

“...just remember thinking how scary it all was.”

Alongside the anxiety, other negative emotions such as panic, guilt and embarrassment were expressed. For example, Participant 10 described feeling guilty and confused:

“...guilty, like they’ve forced me...well not forced me...while they are there encouraging me to eat it feels ok. But then they go...and I don’t feel as strong anymore...I just get confused about what I’ve done.”

Additionally, the reporting of emotional confusion at mealtimes was commonplace, for example, Participant 3 stated:

“I don’t understand how I am meant to be feeling.”

Although the same interviewee did display anger towards others, they confessed they had wanted to:

“...throw the[ir] plate at them [the staff].”

5.3.2.4 Behavioural

Service users described a range of rituals and eating behaviours, for example pushing food around the plate and dissecting food. Participant 4 described having to eat foods in a certain order:

“I’d eat the vegetables first, then the potatoes then the meat or fish.”

The same participant reported having to take small mouthfuls in order to make the food last *“as long as possible”* (Participant 4). They also recognised that some of these behaviours had been learnt as a result of eating with others with eating disorders due to feeling *“sucked into the way people are eating”*. Likewise, Participant 11 explained that when watching how others eat they often made a comparison between the behaviour of the observed individual and that of their own:

“You might see someone doing something, and think, God if I don’t do that, surely I’m not anorexic!”

5.3.3 Mealtime Characteristics

The theme of Mealtime Characteristics was broken down into three sub-themes. The first and the second sub-theme (battlegrounds and disengagement) related to current characteristics of mealtimes, whilst the third sub-theme detailed service users’ ideas for improvement of mealtimes. Although there was a small amount of overlap, experience of meals as either disengaging or as battlegrounds were mainly distinct from each other. Each is explained individually below.

5.3.3.1 Battleground

Service users reported three facets within this sub-theme: battles with staff, other service users and internally within themselves.

Service users felt that staff tried to control the mealtime situation. This became distressing for service users who admitted wanting to retain their sense of control. Participant 10 explains below how this approach made her more resistant against eating:

"I'm feeling more and more anxious...like I shouldn't do it because I was being told to."

The feeling of being watched due to the constant supervision appeared to be part of these battlegrounds. Participant 4 commented, *"...all eyes are on you."* Furthermore, there was a feeling that staff did not sympathise with this feeling of discomfort. For example, Participant 3 commented that, when they expressed their dislike of being watched to a member of staff, the staff response was to say they *"...would say that."* It was the view of Participant 3 that the member of staff had attributed their discomfort as a symptom of their eating disorder rather than something that could be present regardless of eating disorder status.

In addition, there was a perceived battle between individual service users. Awareness of the behaviour of other service users could lead to rivalry, for example, who could take the longest to complete their meal, or act the most distressed.

Participant 6: *"...they [other service users] watch each other quite a lot...Who can be the slowest?"*

Lastly, an internal battle was described wherein individuals experienced conflicting thoughts which led to frustration and confusion. Participant 9 described the difficulty of having these opposing sides:

"...one side hears the other side doesn't. The anorexic part of me finds it really hard, but the well side of me feels proud of me."

5.3.3.2 Disengagement

In contrast to battlegrounds, interviewees also described mealtimes in a much more passive way, as monotonous routines in which they participated but from which they were essentially distanced. Participant 2 saw meals as *“rituals”*. Similarly, in the words of Participant 3:

“...all we do, eat and sit and drink, eat and sit and drink.”

This view appeared to stem from the acknowledgement that mealtimes were a necessary part of treatment which involved an amount of unavoidable difficulty for themselves or others. However, with this came not only an adherence to the rules and boundaries of meal completion, but feelings of disengagement, removal of choice and of being disempowered. In line with this, Participant 3 described their feelings during mealtimes as wanting to *“...shut down,”* and added:

“I just want to hurry up and eat it so I can disappear. I want to get away as quick as possible.”

Service users reported that they felt a loss of their own identity during mealtimes. For Participant 1 mealtimes were *“...like playing a game”*, going on to explain:

“...because it seems so rehearsed and it doesn’t seem individual...It just leaves me cold.”

5.3.3.3 Ideas for improvement

Service users felt they would like to take more of an active role in the decision making process regarding meals and their implementation, thus increasing the therapeutic potential of mealtimes.

Service users felt it necessary to have goals set within safe, supportive environments so that meals would be challenging and new skills relating to eating could

be learnt. For example, Participant 11 commented that they would like to be able to choose their sandwich just before the meal rather than further in advance. To stress this point, they stated that outside of the unit it would be deemed abnormal for individuals to plan in advance what they were to eat:

“You wouldn’t go into a shop and think, right I’ve got to have cheese today would you?”

In addition, many felt they were given insufficient autonomy and that this left them unprepared for continuing their improved eating away from the ward. They felt it would be beneficial for them to be trusted with more responsibilities, such as cooking or collecting meals as seen in the quote below:

Participant 3: *“I think it’d be a good idea to just pick them up [the meals] from the lounge ourselves...I think that could be a progression.”*

Service users acknowledged that staff and other service users made attempts to lighten moods and normalise mealtimes. However, many felt that it would be preferable to try and make meals more similar to social events, teaching people to enjoy eating with others.

Participant 3: *“I feel like I haven’t developed this [enjoyment] feeling for food. Which is a worry.”*

5.3.4 Summary

To summarise, the results identify factors regarding treatment delivery that are capable of altering the mealtime experience for service users. Moreover, there was a certain amount of inconsistency within treatment implementation, causing distress to some service users. Mealtimes were generally reported as resembling either battlegrounds or routines from which the individual is disengaged. The results also

highlight the various ways in which mealtimes are experienced by the service users, involving their cognitions, emotions, behaviours and physical sensations. A more positive experience of mealtimes was sought by service users, wherein they would be able to take a more active role and develop skills that could subsequently help them following discharge.

5.4 Discussion

The aim of the present study was to investigate mealtimes from the perspective of service users of in-patient eating disorders units. The results identified those factors which can influence the mealtime experience, and provided insight into the difficulties experienced and perceived improvements from the perspective of service users.

The themes identified suggested that a number of external factors connected to the delivery of mealtime care were influential, and moreover that their implementation could be inconsistent. Furthermore, these inconsistencies were capable of heightening anxieties and frustrations during mealtimes. This is consistent with Vandereycken (2003) who commented on variations within the implementation of in-patient treatment, which he attributed to staff uncertainties, due to the lack of clinically relevant evidence on which to base care. The inconsistencies within the practices of staff were seen as a barrier to the provisions on structure during a meal. In the majority of cases, it appeared that service users felt unable to feed back to staff regarding their opinions and difficulties related to mealtime practice. Those who did voice their concerns commented that their views were likely to be ignored. Again, Vandereycken (2003) pointed out that in-patients of eating disorders units are generally expected to follow the preset treatment resulting in there being a lack of active participation in the program, possibly to the detriment of their recovery.

The theme of Individual Outcomes illustrated how individuals felt and acted during mealtimes. The four elements of individual outcomes (physical, behavioural, emotional and cognitive) each presented their own difficulties and could be seen to demonstrate how service users coped with mealtimes. This theme closely resembles the four elements

identified within the 'hot cross bun' description of the cognitive behavioural approach of Padesky and Mooney (1990). Their model outlined the interplay between the cognitive, emotional, behavioural and physical elements, as was also highlighted within these interviews. Service users expressed a desire for staff to understand all these elements and to work with service users to help them cope with each. This need for the recognition of cognitive and emotional elements rather than treatment relying solely on weight gain or certain symptomatic behaviours alone as indicators of recovery has been noted elsewhere (Bardone-Cone et al., 2010; Colton & Pistrang, 2004).

Meals were identified as battlegrounds (referring to internal conflict and the conflict between staff and service users, other service users) or as being disengaging, whereas ideally service users wanted them to be more positive experiences where they felt more engaged and had more responsibilities. In the majority of cases, service users either experienced meals as battlegrounds or as disengaging, however both groups could identify areas of potential improvement. This finding makes specific to mealtimes what others have reported regarding eating disorders care in general. For example, Eivors et al. (2003) also concluded that treatment can be experienced as a battle, capable of eroding an individual's sense of control. It is worthy of note that the previous study (Chapter 4) also identified staff to view meals as battles. Additionally, in relation to the theme of disengagement, a recent study by Boughtwood and Halse (2009) found that girls with anorexia 'submit' to treatment and the perceived authority of the staff involved, further noting that although behavioural changes may occur throughout treatment, this could coincide with a feeling of lack of personal control and ambivalence towards care received.

For the service users in this study, an emphasis on skills learning and of appreciating meals as social events were noted as desirable outcomes. This appears to highlight a requirement for responsibility to be given to service users, an element which was often absent from the mealtimes when described within the battlegrounds or disengagement themes. Similar recognition of the need for service users to retain autonomy and be actively engaged with their treatment has been noted within other

studies. For example, Sandy et al. (2007) reported that their service user sample preferred to serve themselves rather than to receive a more restaurant-style meal. Likewise, others have recognised this need for responsibility to be handed back to service user and for treatment to be a progression through which the service user works (Offord et al., 2006; van Ommen, Meerwijk, Kars, van Elburg & van Meijel, 2009).

It is unlikely that a single mealtime protocol could be developed as a 'one-size-fits-all' approach. Indeed, this would be contradictory to the plea for individuality found lacking according to this and other studies (Offord et al., 2006; Strober, 2004; Vince & Leung, 2006). However, it is interesting to note that the above themes were found to run across different units, despite previous studies (Chapter 3) showing the variation between mealtime practices. This would appear to suggest that there are common experiences of mealtimes despite differences in treatment protocol. Future investigation of experience in relation to practice is required to identify the features of care which illicit certain responses from service users. It may be desirable for the elements of treatment delivery to, as far as possible, promote engagement within meals, rather than enforcing (or reinforcing) negative associations with meals as being disengaging or battlegrounds. It may be beneficial, for example, to employ an incremental approach to treatment, whereby service users move through stages of a protocol, gaining responsibilities when ready. Another possibility could be to allow service users to feed back on the implementation of their meals. Indeed as mentioned before, gaining the views of service users regarding their treatment has been identified as important for optimising clinical outcome (Clinton et al., 2004; de la Rie et al., 2008). As one example, it could be useful to allow service users to express complaints and questions related to the menu in comment books that could be reviewed periodically by staff and service users or used as a focus of discussion within a group setting. In addition, it is suggested that interventions which encourage service users to reflect on their treatment, such as Cognitive Remediation and Emotion Skills Training (e.g. Tchanturia, 2011), may be beneficial in working with feelings of disengagement from mealtimes.

Concern existed amongst interviewees regarding the lack of staff understanding of service users' experiences. In order for service providers to adequately understand the internally experienced themes identified, it could be advantageous to involve service users in mealtime protocol training. Although the involvement of service users in the training of healthcare professionals has been suggested elsewhere (Honig, Dargie & Davies, 2006), the effectiveness within the context of mealtimes would need to be evaluated. It could also be beneficial to educate staff regarding the four key elements identified by service users, and to develop interventions accordingly. For instance, physical discomfort could be acknowledged during a post-meal session. It may be possible to use a technique based on a mindful therapy, such as mindfulness-based cognitive therapy (Segal, Williams & Teasdale, 2004.) or acceptance and commitment therapy (Hayes, 2004). Such therapeutic approaches aim to increase individuals' awareness and acceptance of their inner experiences, including their physical sensations. Using sessions like these after meals could not only aid service users in dealing with their uncomfortable physical feelings, but this may be perceived by service users as staff giving recognition to their discomfort.

It is worth noting that the small sample size and qualitative nature of the data collection in this study does not allow for generalisation in the same way as permitted by quantitative research. Furthermore, the relatively small number of units approached, given the supposed variation across units (as seen within Chapter 3), along with the self selection of participants, may be a limitation to the results and a possible source of bias. Despite these factors, qualitative data of this sort is acknowledged to be useful in providing valuable understanding of the individual eating disorder sufferer's perspective on the helpfulness of their treatment received (Bell, 2003). Further investigation is now required into the role of mealtime delivery factors in predicting treatment outcome and attrition rates. It is also advised that future studies consider service users perspective of mealtimes in relation to factors such as duration of illness, BMI on admission, weight gained during treatment and history of previous admissions. This would be necessary to

inform mealtime practice and treatment, and potentially identify differences in perspectives due to individual circumstances. Additionally, with successful recovery being linked to internal motivation to change (Federici & Kaplan, 2006), one might expect a weight increase resulting from true engagement with the mealtime program, as described within the ideas for improvement theme, to be more likely to facilitate sustained weight and prevent relapse.

Chapter 6 : Study 4

The influence of distraction on mealtime anxiety and food intake: A non-clinical naturalistic investigation

Chapter 6 - Study 4: The influence of distraction on mealtime anxiety and food intake: A non-clinical naturalistic investigation

Chapter five explored the mealtime experiences of in-patients of eating disorders units. Service users described their mealtimes in terms of behavioural, emotional, cognitive and physical experiences. Furthermore, they expressed a desire for staff to recognise these different areas of experience. Many of those interviewed described mealtimes in negative terms, describing them as battlegrounds and times of self-imposed and enforced disengagement from involvement in their treatment. These experiences of mealtimes were seen to be partially influenced by environmental factors, such as the arrangement of the dining room, the conduct of staff and distractions within the surroundings. Such factors were recognised to be capable of affecting the anxiety felt during meals and individuals' perceived ability to eat. Likewise, the influential nature of environmental factors within the dining rooms was also acknowledged by staff, together with the common, yet often unsure use of distractions (see Chapter 4).

Chapter six aims to explore environmental factors in relation to mealtime anxiety, and food intake, using a diet diary methodology with a non-clinical sample. Such diet diary methodology has previously been used to explore the influence of environmental factors on meal intake (e.g., Bellisle, Dalix & de Castro, 1999). Within the present Chapter, the intake and anxiety experienced during mealtimes eaten in the presence of distractions were compared to those eaten without distraction in relation to individuals' levels of eating psychopathology.

6.1 Introduction

In the previous Chapters (4 & 5), interviews indicated that both staff and service users of eating disorders units perceive that environmental factors are capable of influencing the mealtime experience. Specifically, service users perceived that distractions within the environment have the capacity to decrease the heightened anxiety which is characteristic of mealtimes, and resultantly make meals more manageable. However, to date, few studies have considered possible associations between influential environmental factors and mealtime experiences or eating behaviours for those with high levels of eating psychopathology.

In contrast, a number of studies have examined the ability of environmental factors to influence the mealtime behaviour of non-clinical individuals (e.g., Thomson et al., 2008). For example, external non-food related stimuli within the eating environment, such as watching television and listening to music, have been found to increase intake (e.g., Chaput et al., 2010; Stroebele & de Castro, 2004a; Williams et al., 2008).

Although the majority of these studies have been conducted with non-clinical samples, some studies have considered individual differences in relation to intake under different environmental distractions. For example, a study by Bellisle and Dalix (2001) investigated the intake of individuals under different environmental conditions, in relation to their levels of dietary restraint - a construct that refers to an individual's conscious attempt to limit food intake in order to control body weight (Herman & Mack, 1975). Although this study appeared to show that the level of dietary restraint moderated the stimulating effect of environmental stimuli, this was not replicated in their later studies (Bellisle et al., 2004, 2009). Despite these later findings, Bellisle et al. (2009) concluded that the influence of external factors within the eating environment may vary within different populations. Nevertheless, this limits the conclusions that can be drawn from these equivocal findings, and suggests a role for replication and extension of these studies in order to clarify the contribution of individual differences in eating behaviours to distraction-related overconsumption.

In summary, it is known that those with high levels of eating psychopathology experience higher levels of mealtime anxiety than those with lower levels of eating psychopathology. Furthermore, studies two and three of the present thesis suggests that external distractions within the eating environment can promote intake by reducing mealtime anxiety, whereas without distractions individuals with high eating psychopathology may be more likely to focus on their food, increasing mealtime anxiety and thus experiencing more difficulty eating. Additionally, previous studies have found that distractions within the eating environment can increase intake; however, the degree to which this is influenced by individual differences remains unclear.

This study had two aims. First, to compare the mealtime anxiety experienced by women with high and low levels of non-clinical eating psychopathology under conditions of distraction and no distraction. In light of the heightened food-related anxiety experienced by those with eating disorders (e.g., Breiner, 2003; Harvey et al., 2002), along with the findings of the previous Chapters wherein environmental distractions were expressed to be able to decrease mealtime anxiety, it was hypothesised that there would be significant differences between the anxiety of those with high levels of eating psychopathology compared to low levels of eating psychopathology in distraction conditions compared to non distraction conditions.

The second aim was to compare the reported percentage of whole meal intake in distraction conditions with intake in non-distraction conditions for women with high and low levels of non-clinical eating psychopathology. Based on previous literature (Bellisle & Dalix, 2001), it was hypothesised that there would be significant differences between the intake of those with high levels of eating psychopathology compared to low levels of eating psychopathology in distraction conditions compared to non distraction conditions.

6.2 Method

6.2.1 Participants

Forty four female undergraduate students participated in this study, with a mean age of eighteen years and six months (SE = 0.09 years).

6.2.2 Procedure

Undergraduate students were recruited via email invitations, with the incentive of collecting research points as part of a research module. Inclusion criteria were that participants would be female, without a history of clinically diagnosed mental health problems and not currently taking any medication (with the exception of oral contraception). Individuals who responded to the email and fitted the inclusion criteria were sent study information sheets and consent forms via email. Full details of anonymity, confidentiality of personal details and rights to withdraw were provided. Participants were issued with diary packs including an envelope for anonymous return of the completed diaries. This study was event-contingent, requiring participants to complete a diary after each meal over a period of a week (maximum of three diaries a day, seven days a week; total of twenty one diaries per participant) (Appendix I). Collecting data over seven days has been suggested as a sufficient length of time to gain a true reflection of participants' daily intake (de Castro, 1994a). During the week, participants also completed a measure of eating psychopathology (EDI-2: Garner, 1991) and a general health questionnaire.

6.2.3 Measures

6.2.3.1 *The mealtime diary*

A diet diary was developed specifically for this study, based on previous diaries such as those used by de Castro (1994). The diary required participants to record activities that were undertaken whilst eating (e.g., watching television, listening to music). As has previously been employed in similar studies (e.g., Bellisle et al., 2003; de Castro, 1994b) a seven-point Likert scale of mood was also included, with '0' representing feeling calm and '7' representing feeling anxious. Percentage of intake of whole meal was

recorded on a visual analogue scale (VAS), with three points marked; '0%', '50%' and '100%'. Participants were required to complete the diary entries immediately prior to and after their meals to avoid retrospective bias.

6.2.3.2 *The Eating Disorder Inventory-2 (EDI-2) (Garner, 1991)*

The Eating Disorder Inventory (Appendix B) is a self-report measure, which has been found to be reliable and valid for both clinical and non-clinical populations (van Strien & Ouwens, 2003). For the purpose of this study, only those sub-scales directly related to eating were used from the original sixty-four item measure of eating psychopathology. Therefore twenty-three items were included producing scores for Drive for Thinness, Bulimia and Body Dissatisfaction. Participants are required to respond using 'always', 'usually', 'often', 'sometimes', 'rarely' or 'never' for each item. Normative female adolescent scores for the EDI have been reported to be 7.09 (± 5.94) Drive for Thinness, 2.17 (± 2.84) Bulimia and 12.14 (8.65) Body Dissatisfaction (Shore & Porter, 1990).

6.2.4 Data analysis

The study was composed of three conditions (eating in the presence of television, the presence of music or without television and music), and three outcome variables (reported percentage of whole meal intake, pre- and post-meal anxiety). The maximum data each participant could produce was three meals a day, seven days a week. For each condition, up to the maximum of twenty-one responses were combined, with means calculated for each participant. These were then combined to produce a group average for each condition, a style of analysis that is described elsewhere (e.g., de Castro, 1994a). For each of the three eating psychopathology subscales median splits were calculated in order to assign participants to high or low groups for use within the analysis.

Kolmogorov-Smirnov tests revealed that not all data were normally distributed indicating that non-parametric analyses should be conducted. However, due to there being no non-parametric equivalent to a mixed ANOVA, the prediction that the level of anxiety experienced would differ between the three conditions was assessed using two way, repeated measures ANOVA: 3 (condition) x 2 (level of eating psychopathology), with

eating psychopathology as between participant factor. Three separate ANOVA were run to compare mean anxiety scores in all conditions for each of the three eating psychopathology sub-scales.

The prediction that the reported percentage intake would differ between the three conditions was assessed using a two way, repeated measures ANOVA, 3 (conditions) x 2 (level of eating psychopathology), with eating psychopathology as between participant factor. Three separate ANOVA were conducted to compare mean anxiety scores in all conditions for each of the three eating psychopathology sub-scales. All results are presented as mean \pm standard error.

6.3 Results

6.3.1 Descriptives

Mean scores on the EDI-2 sub-scales were $3.34 \pm .72$ (range 0 - 18) for Drive for Thinness, $2.57 \pm .51$ (range 0 - 18) for Bulimia and 9.18 ± 1.11 (range 0 - 27) for Body Dissatisfaction. Results are comparable to other non-clinical samples reported elsewhere (e.g., Berman, 2006).

6.3.2 Pre- and post-meal anxiety by level of eating psychopathology

There were limited differences between the mean pre- and post-meal anxiety scores within condition for each of the eating psychopathology subscales (Table 6.1). Therefore pre- and post-meal anxiety scores were collapsed into mean anxiety scores for each participant. These mean anxiety scores were used within the analyses below.

Table 6.1: Mean data for pre- and post- meal anxiety, by level of eating psychopathology, in all meal conditions

	Condition								
	Anxiety during television			Anxiety during music			Anxiety during no distraction		
	Mean (\pm S.E)			Mean (\pm S.E)			Mean (\pm S.E)		
Eating psychopathology	Pre-meal	Post-meal	Mean	Pre-meal	Post-meal	Mean	Pre-meal	Post-meal	Mean
Low Body Dissatisfaction (N=22)	2.21 (0.28)	2.18 (0.28)	1.98 (0.17)	1.64 (0.17)	1.64 (0.17)	1.70 (0.17)	2.42 (0.44)	2.42 (0.43)	2.27 (0.28)
High Body Dissatisfaction (N=22)	2.49 (0.19)	2.36 (0.28)	2.67 (0.22)	2.55 (0.29)	2.43 (0.34)	2.50 (0.26)	2.75 (0.33)	2.61 (0.31)	2.76 (0.30)
Low Drive for Thinness (N=24)	2.15 (0.22)	1.86 (0.24)	2.13 (0.23)	1.69 (0.18)	1.67 (0.17)	.66 (0.16)	2.32 (0.38)	2.33 (0.33)	2.32 (0.32)
High Drive for Thinness (N=20)	2.58 (0.24)	2.74 (2.9)	2.46 (0.17)	2.59 (0.30)	2.49 (0.37)	2.48 (0.25)	2.93 (0.35)	2.88 (0.38)	2.67 (0.27)
Low Bulimia (N=20)	1.86 (0.20)	1.80 (0.21)	1.83 (0.17)	1.46 (0.13)	1.39 (0.12)	1.48 (0.12)	1.80 (0.23)	1.68 (0.13)	1.80 (0.15)
High Bulimia (N=24)	2.70 (0.21)	2.62 (0.28)	2.68 (0.19)	2.57 (0.26)	2.54 (0.29)	2.56 (0.23)	3.19 (0.38)	3.16 (0.38)	3.08 (0.31)

6.3.3 Mean anxiety in relation to eating psychopathology scores in all conditions

Between the three conditions there were 21 cases of missing data. In such cases, if the participant had data for both other conditions, the standard deviation of the two other condition scores were added (if higher) or subtracted (if lower) from the group mean. If the participant had data for only one other condition, the missing case was replaced by the group mean. For all analyses, where sphericity assumptions were violated, Huynh-Feldt

corrections were employed (although uncorrected degrees of freedom are reported in the text).

6.3.3.1 *Drive for thinness*

A repeated measures ANOVA revealed a significant main effect of condition, $F(2, 84) = 3.32$, $p=.05$, and a significant main effect of level of Drive for Thinness, $F(1,42) = 5.73$, $p=.02$. No significant interaction effect was seen between condition and level of Drive for Thinness, $F(2, 84) = .54$, $p>.05$.

6.3.3.2 *Body dissatisfaction*

A repeated measures ANOVA revealed a significant main effect of condition, $F(2, 84) = 3.69$, $p=.03$. There was no significant main effect of level of Body Dissatisfaction, $F(1,42) = 3.04$, $p>.05$, and no significant interaction effect was seen between condition and level of Body Dissatisfaction, $F(2, 84) = 1.60$, $p>.05$.

6.3.3.3 *Bulimia*

A repeated measures ANOVA revealed a significant main effect of condition, $F(2, 84) = 3.46$, $p=.04$, and a significant main effect of level of Bulimia, $F(1,42) = 18.75$, $p>.001$. There was no significant interaction effect between condition and level of Bulimia, $F(2, 84) = .93$, $p>.05$.

6.3.4 Intake in relation to eating psychopathology scores in all conditions

Mean reported percentages of intake of whole meal for each condition by eating psychopathology level can be seen in Table 6.2. Between the three conditions there were 19 cases of missing data. In such cases, if the participant had data for both other conditions, the standard deviation of the two other condition scores were added (if higher) or subtracted (if lower) from the group mean. If, in cases of missing data, the participant had only data for one other condition, the missing case was replaced by the group mean. As was done in above section; where sphericity assumptions were violated, Huynh-Feldt corrections were employed (although uncorrected degrees of freedom are reported in the text).

Table 6.2: Mean data for percentage intake, by level of eating psychopathology, in all meal conditions

Eating psychopathology	Condition		
	Intake during television (\pm S.E)	Intake during music (\pm S.E)	Intake during no distraction (\pm S.E)
Low Body Dissatisfaction (N=22)	92.87 (2.85)	92.64 (2.04)	95.27 (2.33)
High Body Dissatisfaction (N=22)	93.72 (1.72)	95.61 (1.32)	91.80 (3.10)
Low Drive for Thinness (N=24)	95.30 (1.88)	94.31 (1.76)	95.84 (2.13)
High Drive for Thinness (N=20)	90.88 (2.80)	93.90 (1.73)	90.77 (3.35)
Low Bulimia (N=20)	97.30 (.92)	95.53 (1.25)	97.93 (.93)
High Bulimia (N=24)	98.95 (2.77)	92.96 (1.98)	89.87 (3.30)

6.3.4.1 Drive for Thinness

A repeated measures ANOVA revealed no main effect of condition, $F(2, 84) = .21$, $p > .05$, and no main effect of level of Drive for Thinness, $F(1, 42) = 1.56$, $p > .025$. There was no interaction effect between condition and level of Drive for Thinness, $F(2, 84) = 1.18$, $p > .05$.

6.3.4.2 Body Dissatisfaction

A repeated measures ANOVA revealed no main effect of condition, $F(2, 84) = .14$, $p > .05$, and no main effect of level of Body Dissatisfaction, $F(1, 42) = .00$, $p > .05$. There was no interaction effect between condition and level of Body Dissatisfaction, $F(2, 84) = 2.06$, $p > .05$.

6.3.4.3 *Bulimia*

A repeated measures ANOVA revealed no main effect of condition, $F(2, 84) = .07$, $p > .05$, and no interaction effect main effect between condition and level of Bulimia, $F(2,84) = 1.67$, $p > .025$. A significant main effect of level of Bulimia was shown, $F(1, 42) = 5.62$, $p < .05$.

6.4 Discussion

The broad aim of this study was to investigate whether, within a natural setting, there were differences between levels of eating psychopathology and mealtime anxiety or reported percentage of whole meal intake. These relationships were considered in situations where environmental distractions (i.e., television, music) were present within the eating environment, alongside when individuals ate without these environmental distractions.

The first aim of this study was to compare the mealtime anxiety experienced by women with high and low levels of non-clinical eating psychopathology under conditions of distraction and no distraction. In all cases, the pre- and post meal anxieties reported by those with high levels of eating psychopathology were higher than the anxiety reported by those with low levels of eating psychopathology. This was expected, as previous studies have reported that those with high eating psychopathology experience higher food-related anxieties than individuals with low levels of eating psychopathology (e.g., Breiner, 2003; Harvey et al., 2002). Since the pre- and post-meal anxieties were seen to be so similar within each high and low eating psychopathology group, the mean scores of the pre- and post-meal anxieties were calculated and used within the analyses. It is proposed that the similarities between pre- and post-meal anxieties may have been due to this study being naturalistic. Any distractions within the environment are likely to have been present before the start of the meal. Therefore, anxiety might have been affected by the presence of a distraction (i.e., television or music) prior to the beginning of the meal.

Using the mean anxiety scores, there was repeatedly found to be a significant main effect of condition. As can be seen from Table 6.1, participants repeatedly reported

higher levels of anxiety during non distraction conditions compared to distraction conditions. This suggests that overall there were higher experiences of anxiety in the no distraction condition compared to the distraction condition. However the first hypothesis was only partially supported as these differences were observed regardless of level of eating psychopathology.

The second aim was to compare the reported percentage of whole meal intake in distraction conditions with intake in non-distraction conditions for women with high and low levels of non-clinical eating psychopathology. The hypothesis that there would be significant differences between the reported intake of those with high levels of eating psychopathology compared to low levels of eating psychopathology in distraction conditions compared to non distraction conditions was not supported. Means consistently showed that those with high levels of eating psychopathology ate more in the distraction conditions than in the non-distraction conditions, whereas those with low levels of eating psychopathology consistently ate less in the distraction conditions. However, differences did not reach statistical significance. The lack of statistical significance differences do not allow direct support to be given to previous literature, neither are they able to make suggestions regarding clinical implications. It is therefore suggested that future research is required in an attempt to replicate and extend these findings.

Several factors originally led to this investigation suggesting there was an importance in exploring eating psychopathology in relation to both perceived food intake and anxiety during distracting conditions. First, compared with individuals with low levels of eating psychopathology, those with eating disorders are known to exhibit lower intake and increased anxiety during meals (e.g., Breiner, 2003). Second, previous studies have acknowledged that, within non-clinical samples, distractions within the eating environment are able to increase intake and increase the enjoyment of the meal compared to intake and enjoyment of meals in non-distraction conditions (e.g., Caldwell & Hibbert, 2002; Pliner et al., 2006; Stroebele & de Castro, 2004). Furthermore, it has been suggested that those with high levels of dietary restraint are more susceptible to greater consumption

than those with low levels of dietary restraint under distracting conditions (Bellisle & Dalix, 2001). This is of clinical importance, considering that individuals with high dietary restraint have been found to be at increased risk of developing an eating disorder (e.g., Delinsky & Wilson, 2008; Neumark-Sztainer et al., 2006), and considering that previous studies reported within this thesis have identified the use of distractions on eating disorders wards (Chapters 3, 4 & 5). Prior to this investigation, no studies had considered individual differences in eating behaviour other than restraint and disinhibition, in relation to reported intake or anxiety, despite the potential clinical applications of increasing intake and lowering anxieties for those with eating disorders.

This was a naturalistic study, and, in contrast with laboratory studies which provide participants with food (e.g., Bellisle & Dalix, 2001), it is worthy of consideration that participants were able to choose their own meals. This may have accounted for the lack of significant differences between pre-meal and post-meal anxiety. It may have been that those individuals who had higher levels of eating psychopathology, and thus would be expected to show higher levels of anxiety, actually choose foods they considered 'safe' and thus failed to show the predicted level of anxiety. Indeed, in a recent study, Steinglass (2010) concluded that this may have been the case whilst looking at the pre-meal anxiety of weight recovered anorexics.

Alternatively, the non significant findings of this study could signify other limitations of this particular method of data collection. Studies using diet diaries prompt participants to complete their diaries straight after eating their meals; therefore, researchers have argued that the diet diary method is able to reduce failure to remember detail (e.g., Bolger, Davis & Rafaeli, 2003). However, despite those who have argued that diet diaries have been found to have good agreement with actual amount eaten (e.g., de Castro, 1994), others have found incidents of under or over reporting of intake (see Trabulsi & Schoeller, 2001 for a review). It has been argued that those studies that have offered an incentive to the participants involved (e.g., feedback regarding their nutritional breakdown), or have conducted telephone checks (e.g., via verification with individuals independent of the

participant who were present at time of eating) provide more reliable intake data (e.g., Heusel & de Castro, 1997; Krantzler et al., 1982).

It is also worth considering that the act of having to complete diet diaries may actually increase awareness of amount consumed. This could have prompted mindful eating (i.e., greater focus placed on eating than would normally be applied) and influenced eating behaviour, as has been suggested elsewhere within the literature (Sopko, 2010). It is therefore possible that using the diaries could have inhibited any association which normally could be found between eating psychopathologies and eating behaviours during the presence of distractions. Also, as with many research designs, it is true in this instance that participants are likely to have been aware of the focus of the study. This may have encouraged certain responses, such as participants attempting to complete the diary in accordance with perceived expectations. Another possibly influential factor, which was beyond the scope of this study, was an analysis of the particular day of the week that intake occurred. De Castro (1991) previously found there to be an 8% increase (605 kJ/d) on Fridays, Saturdays, and Sundays relative to the other days of the week.

One development which could improve the methodology of this study would be to use ecological momentary assessment (EMA) as an alternative to the diet diaries. This method probes participants to record information at specific points in the day predetermined by the EMA device (see de Castro, 2000, for a review of such methods). Using a method of data collection that prompts participants directly may decrease the incidence of individuals completing the records retrospectively, along with generally acting as a reminder to participants. Another possible improvement could be to offer participants an incentive to encourage accurate recall of intake, for instance, an assessment of nutritional value of diet could be offered.

In summary, although statistical significance was often not reached there were a number of trends which are worth reporting. The majority of participants reported lower mean anxieties during meals eaten with distractions compared to those without distractions. Furthermore, those with relatively high levels of eating psychopathology ate

more during meals when distractions were present compared to when eating without distractions. In contrast, those with relatively low levels of eating psychopathology ate less during distraction conditions compared to when eating without distractions. It is of clinical significance that future research considers whether, for individuals with high eating disorders psychopathology, there are associations between the level of intake and the anxiety experienced during meals with and without distractions.

Chapter 7 : Study 5

The influence of distraction and focused attention on actual and perceived food intake: A non-clinical laboratory study

Chapter 7 - Study 5: The influence of distraction and focused attention on actual and perceived food intake: A non-clinical laboratory study

Using a naturalistic design, the previous study concluded that there were significant differences in the levels of reported anxiety experienced in meals eaten with distraction compared to meals eaten without distractions. However, these differences were not seen to be associated with level of eating psychopathology. It is possible that these non-significant findings may have been due to methodological problems associated with use of the self-report diet diaries.

This Chapter aims to explore eating behaviour (i.e., duration of meal, actual and perceived intake) and experience of meals during different environmental situations, in relation to eating psychopathology within a controlled laboratory setting. Using a study design similar of that of Bellisle and Dalix (2001), study five compares an eating environment where an auditory story was present against a control and a focused attention condition. The use of a more controlled laboratory method was seen to be necessary in order to explore the variables of interest (intake, duration and mealtime experience) which were not able to be explored fully in the previous Chapter due to the self-report method of data collection used. It is suggested that the self-awareness of intake under distraction conditions is potentially of clinical relevance, therefore importantly, the current laboratory study allowed a comparison between perceived and actual intake.

Chapter seven has been published as: Long, S., Meyer, C., Leung, N., & Wallis, D.J. (2011). Effects of distraction and focused attention on actual and perceived food intake in females with non-clinical eating psychopathology. *Appetite*, 56(2), 350-356.

7.1 Introduction

In the preceding chapters, environmental factors were found to be capable of altering the intake and anxiety experienced for those with high levels of eating psychopathology (studies 2-4). Chapter six investigated the different with mealtime anxiety and intake in relation to levels of eating psychopathology and the presence of environmental distraction. Although no significant interactions were found, it is suggested that this lack of significant findings may have been due to the limitations of the self-report method used.

The potential influence of mealtime environmental factors is of clinical relevance to those with eating disorders receiving in-patient care considering the key treatment goals of restoring weight and the importance put upon increasing ability to complete meals (Geller et al., 2001). As has been discussed previously, whilst there is a paucity of evidence from within the eating disorders field, it is clear from the appetite literature that environmental influences can influence amount of food consumed and the mealtime experience. For example, naturalistic studies have found that music (e.g. Stroebele & de Castro, 2006) and the presence of others (e.g. de Castro, 1997; 1990) are associated with increased intake and meal duration. Distraction-related increases in food intake and duration have also been seen within laboratory experiments, including when food is consumed alongside watching television (Bellisle et al., 2004; Blass et al., 2006; Hetherington et al., 2006) and playing video games (Cessna et al., 2007). Additionally, the enjoyment individuals report in association with meals, have been shown to be influenced by factors within the eating environment such as music played whilst eating (Caldwell & Hibbert, 2002). Furthermore, several studies have suggested that restrained eaters consume more than non-restrained individuals when eating in the presence of a distraction (e.g., Bellisle & Dalix, 2001; Ward & Mann, 2000), although these findings recently failed to be replicated (e.g., Bellisle et al., 2009).

In contrast with the influence of distractions, some studies have also considered the effect on intake when attention is deliberately focused towards food. For example,

Hetherington et al. (2006) observed that participants eat significantly more when in a condition which distracted attention away from food compared to when attention was focused towards the food. Furthermore, when asked to rate the pleasantness of food, ratings were found to be lower in the focused attention conditions compared to in those in the distraction conditions. This was suggested to be due to the distraction stimuli acting to divert attention away from the food, thus extending the time in which there is a natural decline in experience of taste pleasantness known as sensory-specific satiety. Bellisle and Dalix (2001) also included a condition within their study wherein participants' attention was focused on the sensory properties of the eaten foods. Although intake was lower in this focused attention condition than in the distraction condition (and similar to a control condition), this difference was not found to be significant.

These findings related to distraction and focused attention may be of clinical relevance to the mealtimes of those with eating disorders. It has been found that individuals with anorexia show an attention bias towards food related stimuli (Nikendei et al., 2008; Stormark & Torkildsen, 2004). Furthermore, anecdotal evidence suggests that on eating disorders units, as in other hospital settings, the preferred system of management for hospital mealtimes is that of 'Protected Mealtimes', as advocated by The Hospital Caterers Association (HCA: 2004). It was the advice of this document that all mealtimes catered for, by hospitals, should be protected from interruptions, including that from visitors. The HCA (2004) suggested by doing this service users would be encouraged to eat more, along with aiding staffs awareness of service users' behaviour during mealtimes. Although this idea has generally received support (Davidson & Schofield, 2005), no studies have yet explored the impact of protected mealtimes or focusing attention towards food, on eating disorders units specifically.

Several studies have investigated whether individuals are able to monitor their intake and if they are able to recognise any influence of the environment on their eating behaviour. Ward and Mann (2000) found that participants were more likely to underestimate consumption when under low cognitive load and to overestimate slightly

when eating under high cognitive load (memory task); however these differences were not found to reach significance. Wansink and Sobal (2007) suggest, in general, that individuals are poor at being able to detect when overconsumption has occurred, although they also noted that people who were more conscious of their food-related decisions were more aware of how the environment might influence their behaviour than individuals who are less conscious of their food-related decisions. As those with eating disorders are suggested to have a comparatively heightened awareness of food related decisions, it is imperative that we explore how intake and awareness of overconsumption interact for those with differing levels of eating psychopathology.

In summary, previous research from the appetite field has suggested that distraction within the eating environment can influence food intake, duration and mealtime experience, whereas focusing attention on the sensory properties of food can promote reduced food intake relative to distracting conditions (e.g., Stroebele & de Castro 2004a). Some evidence suggests that these effects appear to be especially relevant to those individuals who are deliberately trying to limit their intake (restrained eaters) (e.g., Bellisle & Dalix, 2001). However, we do not know the effects of these conditions on other aspects of eating psychopathology. Furthermore, to date, no studies have examined eating behaviour-related individual differences in ability to accurately estimate amount of food consumed under these different conditions

The present study aimed to extend previous research by investigating the effects of distraction and focused attention on females differing in Drive for Thinness, Body Dissatisfaction and bulimic attitudes (as measured by the EDI-2; Garner, 1991). Importantly, it has been suggested that dietary restriction might precede the development of eating disorders (Delinsky & Wilson, 2008). For this reason, the relationships between distraction, focused attention and eating psychopathology deserve further investigation. An additional measure of behavioural awareness compared amount of the meal consumed against estimated amount consumed in order to assess the degree to which participants were aware of how much they consumed under the different conditions.

Specifically this study had three aims. First, this study aimed to replicate previous findings concerning the effects of distraction and focused attention on food intake. It was predicted that participants would consume significantly more when distracted than when attention is focused on the sensory characteristics of food and under control conditions. Second, this study aimed to expand on previous literature concerning dietary restraint and intake by assessing the relationship between food intake during control, distraction and focused attention conditions among women differing in non-clinical levels of eating psychopathology. It was hypothesised that there would be a significant relationship between eating psychopathology scores and differences in intake between distraction and both focused attention and control conditions. Finally, this study examined the behavioural awareness (accuracy of intake estimations) of non-clinical women differing in eating psychopathology. It was hypothesised that the ability to estimate accurately the amount of food consumed would differ significantly between the three conditions, and eating psychopathology scores would be associated with low behavioural awareness (i.e. over or underestimation of amount consumed). However, as there has been insufficient previous research, specific predictions relating to each condition (distraction, focused and control) were unable to be made.

7.2 Method

7.2.1 Participants

Twenty seven female undergraduates were recruited on an opportunity basis with the incentive of receiving course credits. Participants were screened for eating pathology (those with a history of clinically diagnosed eating disorders were excluded from participation) and were not taking any medication, with the exception of oral contraception. One individual was excluded after reporting having been previously treated for an eating disorder. Mean age of participants was twenty one years and one month ($SE = 0.7$ years) and mean BMI was 23.8 ($SE = 0.64$). Written informed consent was obtained from all participants prior to participation.

7.2.2 Procedure

A week before the first test session, participants attended a screening session in which they completed a questionnaire to assess their liking of the test meal and their ability to eat the food with no ill effects (i.e. no allergies). They also gave written informed consent and were provided with instructions for the following three test sessions. Participants were asked to have their usual breakfast if their test session took place at lunchtime (between the hours of 12.00 and 13.30), or their usual lunch if their test session was scheduled for early evening (between 17.00 and 18.30). Following standard protocol (e.g., Wallis & Hetherington 2004; 2009) in order to minimise any condition differences between hunger at baseline, participants were requested not to consume any food and to drink only water in the three hours prior to each test session.

On arrival for each session, participants recorded all foods and drinks consumed on that day prior to entering the laboratory. This enabled the experimenter to check adherence to these instructions. In order to reduce demand characteristics, participants were informed that the focus of the study was on meal appreciation within different environmental settings. Participants also completed baseline ratings of appetite (desire to eat, hunger and fullness, on 100mm VAS) and mood (PANAS; Watson et al., 1988). These measures were completed in a separate room, in order to ensure that participants' attention was not drawn to the aroma of the food whilst it was being prepared.

Each individual took part in three 30 minute conditions (control, distraction & focused attention). These were based on equivalent conditions within a previously used methodology (Bellisle & Dalix, 2001) and presented in a counterbalanced order. A within participant design was used for this study, with an identical meal being provided over three consecutive weeks. The meal consisted of 750g of cooked white wheat pasta and 500g of Dolmio original pasta sauce, served hot. Participants were informed that they could consume as much or as little as they wished within the 30 minute time frame. They were instructed that, although they may stop eating at any time, they should remain within the laboratory for the full 30 minutes. A jug containing 400ml of chilled water was also

made available. Meals were consumed alone and were scheduled for the same time of day each week (either a lunch or early evening meal sitting) with at least five days between test sessions.

During the control condition, participants ate the meal alone, without any distractions. The focused attention condition involved participants eating alone whilst attending to the sensory characteristics of the food via recorded instructions. The audio instructions were delivered via speakers, with statements (such as *“think about the texture/colour/taste of the food”*) heard by the participant every 30 seconds for the half an hour period. The distraction condition required participants to eat alone whilst listening to a 30 minute extract from Jane Austin’s *Pride and Prejudice* (Penguin Group, 2003). After each session, the plate of food was removed and further ratings of appetite and mood were taken. Participants were also asked to estimate how much food they had eaten relative to the amount presented (percentages were marked on a 100mm VAS). Food intake was measured by weighing the food (in grams) prior to serving and on meal completion. In order to permit comparison with participants’ estimates, percentage of the meal consumed was also calculated.

Following the third session, participants completed a measure of eating psychopathology (EDI-2; Garner, 1991). They were weighed using digital scales (Seca 770, Hamburg, Germany) and their height was measured using a stadiometer (Leicester Height Measure, distributed by Seca Limited, Birmingham) in order to provide an objective measure of BMI. However, from the beginning of the study, in order to reduce any potential distress, participants were informed that the weight and height measurements were optional. One participant refused to be weighed, opting to provide a self-reported estimate of weight, which was used within the data set. After completion of all three conditions, participants were debriefed by the experimenter.

7.2.3 Measures

7.2.3.1 *Appetite ratings*

Subjective sensations of appetite (hunger, fullness and desire to eat) were recorded pre- and post-meal using 100mm VAS with endpoints anchored from 'not at all' to 'extremely'. The use of VAS as a psychometric measure of an individual's appetite sensation and motivation has shown good reproducibility (test-retest reliability) and validity under controlled conditions with within-subject designs (Flint, Raben, Blundell & Astrup, 2000; Stubbs et al., 2007).

7.2.3.2 *Mood ratings*

As previous research has found mood-related changes in food intake (for reviews see Greeno & Wing, 1994; Gibson, 2006), it was important to account for any differences in mood between the three conditions. Pre and post-task positive and negative moods were assessed using the Positive and Negative Affect Scale (PANAS; Watson, Clark & Tellegen, 1998). The PANAS contains 20 items, and measures Positive Affect (10 items) and Negative Affect (10 items). Ratings fall on a five point scale, which asks participants to report the extent to which they are experiencing certain mood states (1 'not at all', 2 'a little', 3 'moderately', 4 'quite a lot', 5 'extremely'). A high score on either scale indicates a greater degree of positive or negative affect. The reliability and validity of the PANAS has been documented within non-clinical samples (Crawford & Henry, 2004).

7.2.3.3 *Perceived intake*

Perceived intake was measured using 100mm VAS. The VAS was labelled '0%', '50%' and '100%' at corresponding points. Participants were instructed to place a vertical mark at the point on the horizontal line that they felt corresponded with the amount of the meal they had consumed.

7.2.3.4 *The Eating Disorder Inventory-2 (Garner, 1991)*

For the purpose of this study, only those sub-scales directly related to eating were used from the EDI-2. Therefore twenty-three of the original sixty-four items were included,

producing scores for Drive for Thinness, Bulimia and Body Dissatisfaction. Participants respond to each item with one of the following options: 'always', 'usually', 'often', 'sometimes', 'rarely' or 'never'. A high EDI subscale score indicates an increased level of individual eating disturbance. The EDI-2 has been shown to have good discriminant validity (Schoemaker, Verbraak, Breteler, & van der Staak, 1997) and good reliability, with Drive for Thinness, Bulimia and Body Dissatisfaction scoring between .86 and .94 ($p < .01$) on test-retest reliabilities in a population of clinically diagnosed eating disorder patients and a non-eating disordered comparison group (Thiel & Paul, 2006). In the present sample Cronbach's α reliability coefficients for each of the sub-scales were as follows: Drive for Thinness $\alpha = 0.89$, Body Dissatisfaction $\alpha = 0.93$ and Bulimia $\alpha = 0.53$, indicating good internal reliability for Drive for Thinness and Body Dissatisfaction but moderate reliability for the Bulimia subscale.

7.2.4 Data analysis

Initially, in order to assess any influence of meal timing (lunchtime or evening meal) on food intake a repeated measures ANOVA was conducted, with meal timing as a between subjects factor. There was no significant main effect of meal timing, $F(1,25) = .84$, $p > .05$, $\eta_p^2 = .04$, and no significant interaction between meal timing and condition, $F(2,50) = .571$, $p > .05$, $\eta_p^2 = .03$, indicating that the data within each condition could be combined for subsequent analyses.

Kolmogorov-Smirnov tests revealed that all data were normally distributed. In order to assess change over time and to check that any observed differences could not be explained by differences in mood or appetite, these ratings were analysed using two way repeated measures 3 (condition) x 2 (pre-meal/post-meal) ANOVA. The hypothesis that significantly more would be consumed under distraction than under control and focused attention conditions was assessed using one way repeated measures ANOVA. Subsequent paired comparisons were conducted using Bonferroni tests. The second hypothesis, that there would be significant relationships between eating psychopathology (EDI-2 sub-scale scores) and the differences in intake between the distraction condition

and the control and focused attention conditions was assessed using Pearson's product moment correlations. Differences in intake were calculated by subtracting intake in the control and focused attention conditions from intake in the distraction condition; therefore, positive scores indicated greater intake in the distraction condition.

The prediction that the ability to estimate amount of food consumed would differ between the three conditions was assessed using a two way, repeated measures, 3 (condition) x 2 (perceived % intake, actual % intake) ANOVA. The final hypothesis, that eating psychopathology scores would be associated with low behavioural awareness, was assessed by subtracting actual percentage of meal consumed from perceived percentage in all conditions (positive values indicating an overestimation of intake) and correlating these three values with EDI subscale scores. As this measure of perceived intake is novel, non-parametric, Spearman's correlations were employed in order to provide a more conservative method of analysis. All tests were two-tailed, with α set at .05.

7.3 Results

All results are presented as mean \pm standard error. Sphericity assumed values are reported unless otherwise stated.

7.3.1 Whole group intake

Figure 7.1 illustrates a significant main effect of condition for intake, $F(2,52) = 5.45$, $p < .01$, $\eta_p^2 = .17$. Bonferroni pairwise comparisons revealed that significantly more was consumed in the distraction condition ($513.4 \pm 37.6g$) than in the control ($425.8 \pm 34.2g$; $p < .05$) and focused attention ($443.4 \pm 35.2g$; $p < .05$) conditions. This represents an increase in intake in the distraction condition of 17% compared with the control condition and 13.6% compared with the focused attention condition. BMI was not significantly associated with intake in any of the three conditions.

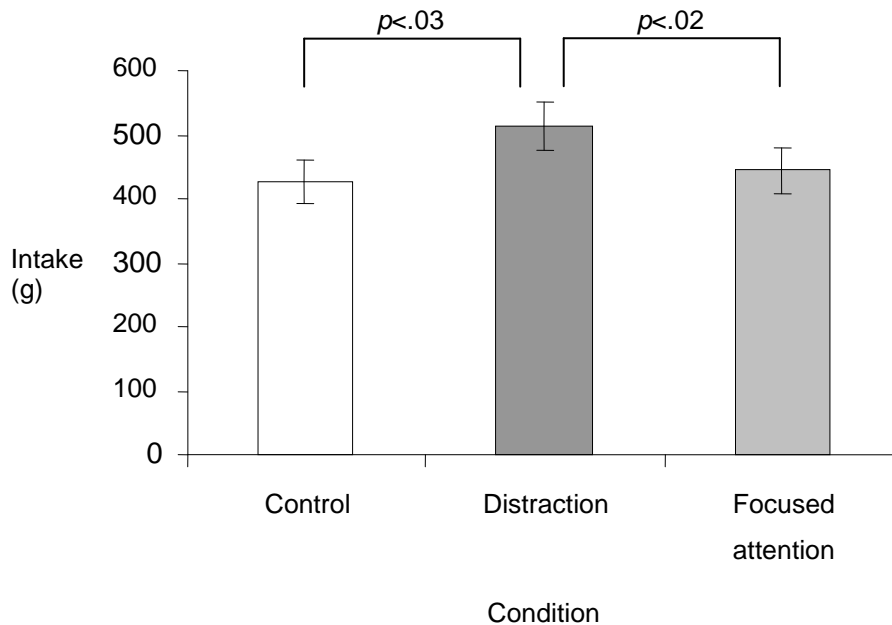


Figure 7.1: Mean (\pm SEM) intake (g) in the three conditions

7.3.2 Intake and eating psychopathology

Mean scores on the EDI-2 sub-scales were 5.3 ± 1.1 (range 0-20) for Drive for Thinness, 1.4 ± 0.4 (range 0-7) for Bulimia and 11.6 ± 1.6 (range 0-26) for Body Dissatisfaction. Results are comparable to other non-clinical samples reported elsewhere (e.g., Berman, 2006). Pearson's correlations were conducted between EDI-2 sub-scale scores and intake in the control condition and found no significant relationships: Bulimia $r = .01$, Drive for Thinness, $r = -.09$, Body Dissatisfaction, $r = .06$, all $p > .05$. Subsequent correlations examined the relationships between EDI-2 sub-scale scores and differences in intake between the distraction and control and focused attention conditions (positive values indicating greater intake under distraction) and found no significant coefficients: distraction minus control, Bulimia $r = .06$, Drive for Thinness, $r = .02$, Body Dissatisfaction $r = -.12$; distraction minus focused attention, Bulimia $r = -.07$, Drive for Thinness, $r = -.04$, Body Dissatisfaction $r = -.24$, all $p > .05$.

7.3.3 Accuracy of perceived intake and eating psychopathology

One participant failed to provide a percentage figure for estimated intake after the distraction condition; therefore the following analyses were based on 26 cases. In order to assess differences between conditions in perceived vs actual percentage consumed, a repeated measures ANOVA was conducted and revealed no significant main effect of condition, $F(2,50) = 2.22$, $p > .05$, $\eta_p^2 = .08$, and no significant interaction between condition and intake measure, $F(2,50) = .42$, $p > .05$, $\eta_p^2 = .02$. However there was a main effect of intake measure (perceived intake mean % = 47.6 ± 2.9 ; actual intake mean % = 38.9 ± 2.7), $F(1,25) = 19.56$, $p < .001$, $\eta_p^2 = .44$. This represented an overestimation of intake by 22.3%, regardless of condition.

The relationships between EDI-2 subscale scores and accuracy of perceived intake in each condition (perceived percentage of meal consumed minus actual percentage consumed) were analysed using Spearman's correlations. Negative but non-significant coefficients were found in both the control condition (Bulimia $r_s = -.23$, Drive for Thinness, $r_s = -.11$, Body Dissatisfaction, $r_s = -.18$, all $p > .05$), and the distraction condition (Bulimia $r_s = -.12$, Drive for Thinness, $r_s = -.08$, Body Dissatisfaction, $r_s = -.06$, all $p > .05$). However, in the focussed attention condition all coefficients were positive and there was a significant correlation between accuracy of perceived intake and Drive for Thinness score ($r_s = .41$, $p < .05$; see Figure 7.2). No significant correlations were found for Bulimia, $r_s = .01$, or Body Dissatisfaction, $r_s = .07$, both $p > .05$. This indicates that when attention was focused on the sensory properties of food those with high Drive for Thinness overestimated the amount of food consumed.

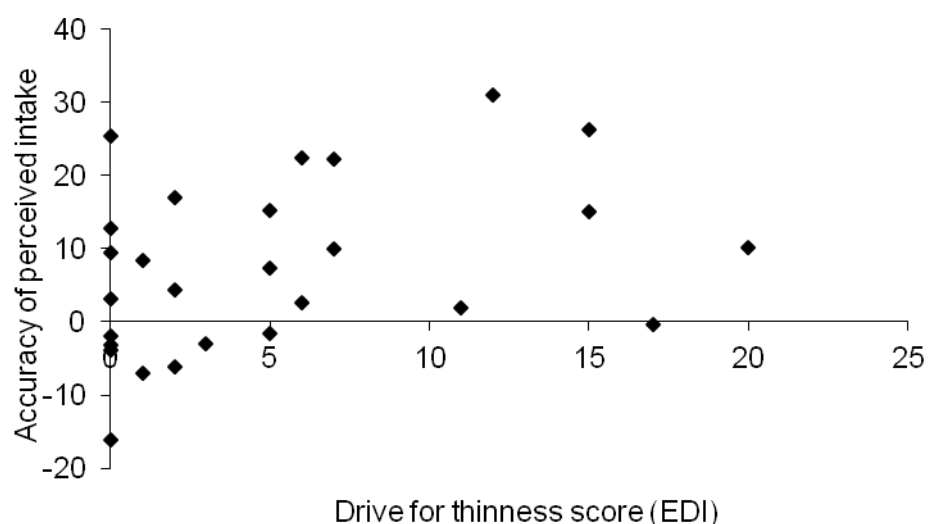


Figure 7.2: Correlation between Drive for Thinness score (EDI) and accuracy of perceived intake (perceived percentage of meal consumed minus actual percentage consumed)

7.3.4 Mood ratings

Mean PA and NA scores are shown in the Table 7.1 below. Mean PA and NA scores are lower than, but within range of, normative non-clinical levels (Crawford & Henry, 2004, PA: 30.62 (\pm 7.89), range 10-50; NA: 16.68 (\pm 6.37), range 10-42).

Table 7.1: Mean data for Positive and Negative Affect by condition

Condition	Mean Positive Affect (\pm S.D)	Mean Negative Affect (\pm S.D)
Control pre-meal	24.56 4.67	13.30 3.28
Control post-meal	20.93 5.25	12.15 3.13
Distraction pre-meal	22.26 5.76	13.07 5.20
Distraction post-meal	21.15 6.76	11.89 3.21
Focused attention pre-meal	23.00 6.18	12.48 3.96
Focused attention post meal	20.22 5.88	11.93 2.18

A repeated measures ANOVA revealed no main effect of condition on ratings of positive affect, $F(2,52) = .92$, $p > .05$, $\eta_p^2 = .03$, and no significant interaction between condition and time of rating $F(2,52) = 2.61$, $p > .05$, $\eta_p^2 = .10$. However, a main effect of time was seen, such that positive mood reduced significantly from pre-meal ($23.3 \pm .89$) to post-meal ($20.8 \pm .95$), $F(1,26) = 11.7$, $p < .01$, $\eta_p^2 = .31$. For negative affect, a repeated measures ANOVA revealed no main effect of condition, $F(2,52) = .57$, $p > .05$, $\eta_p^2 = .02$, and no significant interaction between time of rating and condition, $F(2,52) = .65$, $p > .05$, $\eta_p^2 = .02$. However, there was a main effect of time, such that negative affect reduced significantly from baseline ($12.95 \pm .7$) to post-meal ($11.99 \pm .5$), $F(1,26) = 6.65$, $p < .05$, $\eta_p^2 = .2$. Therefore, although there were no differences between conditions in mood at baseline or post-meal, there was a slight reduction over time in ratings of both positive and negative mood.

7.3.5 Appetite ratings

Mauchly's test indicated that the assumption of sphericity for condition was violated ($p < .05$) for all measures of appetite, therefore Greenhouse-Geisser estimates of sphericity were used (uncorrected df are reported here). Overall, the results detailed below, indicate that in all conditions, appetite ratings were similar prior to eating, and participants consumed the meal to a reasonable level of satiety.

7.3.5.1 *Hunger*

A repeated measures ANOVA for hunger ratings revealed no main effect of condition, $F(2,52) = 1.45$, $p > .05$, $\eta_p^2 = .05$ and no significant interaction between time of rating and condition $F(2,52) = 1.61$, $p > .05$, $\eta_p^2 = .06$. Hunger reduced significantly from baseline (57.9 ± 3.28) to post-meal (10.02 ± 1.44), $F(1,26) = 170.84$, $p < .001$, $\eta_p^2 = .87$.

7.3.5.2 *Desire to eat*

Similar findings were observed for ratings of desire to eat as those found for hunger. There was no significant main effect of condition, $F(2,52) = .12$, $p > .05$, $\eta_p^2 = .004$,

and no significant interaction between condition and time, $F(2, 52) = .9$, $p > .05$, $\eta_p^2 = .03$. However, there was a significant reduction in desire to eat from baseline (58.2 ± 17.67) to post-meal (8.9 ± 6.75), $F(1, 26) = 204.25$, $p < .001$, $\eta_p^2 = .89$.

7.3.5.3 Fullness

For fullness ratings, again, there was no significant interaction, $F(2, 52) = .13$, $p > .05$, $\eta_p^2 = .005$. However, consistent with the other ratings of appetite, fullness increased significantly from baseline (25.3 ± 2.7) to post-meal (76.8 ± 2.4), $F(1, 26) = 172.1$, $p < .001$, $\eta_p^2 = .87$. In addition, there was a significant main effect of condition (control: 54.7 ± 2.0 ; distraction: 45.6 ± 2.6 ; focused attention: 53.0 ± 2.9), $F(2, 52) = 4.13$, $p < .05$, $\eta_p^2 = .14$. Bonferroni pairwise comparisons revealed that fullness ratings in the control condition were significantly higher than in the distraction condition ($p < .04$).

7.4 Discussion

This experiment had three aims. First, to replicate previous findings concerning the effects of distraction and of focused attention on food intake. Second, to assess the impact of non-clinical levels of eating disorder psychopathology on food intake under the different conditions. Third, to assess the relationship between eating psychopathology and accuracy of perceived intake. This study was the first to examine the impact of distraction and heightened attention to foods on amount consumed and perceived intake in individuals differing in non-clinical levels of eating psychopathology.

As hypothesised, significantly more was consumed in the distraction condition than in the control and focused attention conditions. However, contrary to the second hypothesis, there were no significant relationships between eating psychopathology scores and differences in intake between distraction and both focused attention and control conditions. These findings suggest that increased food intake in response to distraction is similar in all individuals, regardless of non-clinical levels of disordered eating. This is in contrast with Bellisle et al. (2001), who found that restrained eaters are particularly susceptible to the effects of distraction on food intake. However, our results

are similar to Bellisle et al. (2004; 2009), who failed to replicate their original finding that restraint was associated with overeating under distraction. It must be noted that Bellisle and colleagues assessed the influence of restraint only, whereas the measure of eating psychopathology used within the present study assessed Drive for Thinness, specifically, rather than intentional restriction of food intake. Therefore, the current findings require replication before any strong conclusions can be drawn concerning the impact of individual differences in eating psychopathology on susceptibility to the effects of distraction on food intake.

The third hypothesis was that the ability to estimate the amount of food consumed would differ between conditions, and that high eating psychopathology would be associated with low behavioural awareness. Intake was overestimated in all conditions (by 22.3% overall). This contrasts with Ward and Mann (2000) who found a slight, but non-significant overestimation under a high cognitive load (memory) task and a slight but non-significant underestimation under low load. Although one might expect that their high load task would constitute a distractor, it was not designed as a distractor, *per se*, and conditions in the current study were too dissimilar to enable any direct comparisons. Furthermore, the present study aimed to see if any observed over- or underestimation was associated with individual differences in eating psychopathology. In the distraction and control conditions, there were negative but non-significant correlations between the three EDI-2 subscale scores and accuracy of perceived intake, indicating that these factors were not associated with the ability to estimate how much food was consumed in these two conditions. However, in the focused attention condition, there was a significant positive correlation between Drive for Thinness (but not Bulimia or Body Dissatisfaction, as measured by the EDI-2) and accuracy of perceived intake. Specifically, this suggests that when attention was focused on food, those with higher levels of Drive for Thinness overestimated the amount of food they had consumed. However, given that this was an exploratory investigation further research is required to confirm this relationship.

The absence of any significant interactions between condition and time of rating for all three appetite variables indicated that participants arrived for each condition in similar states of hunger. As would be expected, hunger and desire to eat decreased and fullness increased from before to after the meal. Both positive and negative affect reduced significantly from pre-meal to post-meal ratings. This indicates a general decrease in energy along with a tendency towards calmness rather than distress (Watson et al., 1999).

The present study promotes discussion into the effects of distraction on those with non-clinical levels of eating psychopathology. It would appear that those with high levels of eating psychopathology are equally as likely as those with low levels of eating psychopathology to eat a greater amount when distracted than during a control condition. Furthermore, whilst all conditions promoted overestimation of amount consumed, this was not associated with eating psychopathology under conditions of distraction. Conversely, when asked to focus their attention on the food, individuals with higher levels of Drive for Thinness were more likely than those with lower levels of Drive for Thinness to overestimate how much they had eaten.

When interpreting the findings of this study, a number of limitations must be considered. It is possible that these findings are limited to the food that was presented, and might not be replicated with higher calorie food. Indeed Boon et al., (2002) found that when low calorie food was offered there was no difference between the intake of low and high restrained eaters under distraction conditions. However they also found that restrained eaters ate more under distraction when the food was high in calories. The variety and type of foods offered can also affect the likelihood of restrained eaters exhibiting disinhibited eating. For example, restrained and emotional eaters consumed more chocolate under ego-threatening than under control conditions (Wallis & Hetherington, 2004). However, in a replication of this study (Wallis & Hetherington, 2009), when a low fat alternative was offered alongside chocolate, restraint was maintained via selective restriction of the dried fruit only. It would be appropriate to examine if the type

and variety of food offered affects intake and perceived intake in a replication of the present study. It would also be pertinent to examine the effects of perceived energy content by manipulating participant beliefs.

As with any laboratory experiment, there are problems with drawing conclusions from such an artificial setting. Wansink et al. (2007) pointed out that people may be aware of the artificial context of laboratory-based experiments. As a result, participants may act according to their expectations under different conditions in order to produce 'favourable' results. As suggested by Wansink et al. (2007), future research could explore participants' awareness of their consumption by asking them whether they thought they had eaten more or less than they would normally eat after each condition and subsequently why they thought this to be so.

The suggestion that distraction can promote increased intake in those with high and low levels of eating psychopathology, and that focused attention can increase perceived overconsumption, may be of clinical relevance. If it is the case that distraction may increase intake, and focusing attention on food could make vulnerable individuals think they had eaten more than they actually had, this could provide an evidence base on which to consider the impact of mealtime interventions and protocol for eating disordered service users. For example, this could imply that focusing attention on the sensory properties of foods might not be an appropriate therapeutic tool for those with high levels of Drive for Thinness, whereas distraction may be a suitable strategy for promoting food intake. This is an important finding to examine further, as there could be implications for the treatment and mealtime management of those with eating disorders. Presently, no such investigation of the environmental impacts involved in mealtimes on eating disorders units have been conducted, despite researchers commenting that the magnitude of the effect of ambience may be underestimated and that the manipulation of certain factors could be used therapeutically to alter food intake (Stroebele & de Castro, 2006). Concluding from the present data, future research should attempt to explore the efficacy of distraction as a therapeutic tool within the management of mealtimes for those with

eating disorders. It is also recommended that further research is required to examine the effects of focusing attention on food and food-related stimuli within eating disordered populations, as present findings suggest that this might result in an overestimation of intake, thus discouraging adequate food consumption in this population.

Chapter 8 : Study 6

The influence of distraction on mealtime anxiety,
intake and duration: A pilot clinical case-series

Chapter 8 - Study 6: The influence of distraction on mealtime anxiety, intake and duration: A pilot clinical case-series

The findings of Chapter seven suggested that both those with high and low levels of eating psychopathology are vulnerable to the overconsumption stimulated by environmental distraction. Furthermore, compared to those with low levels of Drive for Thinness those with high levels of Drive for Thinness were more likely to overestimate how much they had eaten when their attention was focused towards their food. These findings are potentially important in relation to mealtimes on eating disorders units. Additionally, the results of the previous survey and interviews (Chapters 3 - 5) highlighted the common use of distraction within in-patient mealtimes. Whilst the findings of Chapter seven suggest that distraction techniques may have implications for individuals with eating disorders, it is acknowledged that future studies are necessary in order for this relationship to be fully understood.

The current study was designed to manipulate the mealtime setting in order to explore the effects of different types of distractions within a clinical setting. Specifically, this study aimed to investigate the relationship between the different conditions and the anxiety associated with, and the time taken to complete, meals.

8.1 Introduction

As discussed previously, environmental distractions have been found to influence eating behaviour (e.g., Bellisle & Dalix, 2001; Stroebele & de Castro, 2004), and enjoyment of meals (e.g., Caldwell & Hibbert, 2002). It has also been suggested that further investigation is merited into the longer term effects of different types of distracting stimuli (such as television watching) on subsequent intake (Brunstrom & Mitchell, 2006). This thesis has considered the influential capability of distraction within the eating environment in relation to eating behaviour and eating psychopathology (see Chapter 6 & 7). Additionally, the survey (Chapter 3) and interviews conducted in Chapters four and five indicated that not only are distraction techniques commonly used during mealtimes in in-patient eating disorder units, but there are also considerable uncertainties regarding how to implement such distractions. The degree to which distractions are of therapeutic value remains unknown, or indeed if they have a measureable effect within treatment at all. Furthermore, there exist no standardised guidelines for those providing care, and the practices used are not based on robust evidence. Indeed, it has been noted that overall “*disappointingly little*” knowledge exists regarding the care that is being implemented on in-patient eating disorders units (Matthias, 2005, p.160).

Considering the potentially influential effects of distractions within the eating environment and the difficulties mealtimes represent for those with eating disorders, disappointingly few studies have investigated distraction in relation to the meals of those with eating disorders (Breiner, 2003; Harvey, et al., 2002). One study which was conducted by Couturier and Mahmood (2009) showed that there was a decrease in the use of nasogastric feeding (a process wherein a plastic tube is inserted through the nose, directly into the stomach) when supportive mealtime therapy was practised. In the present sample supportive strategies include distractions in the form of conversations or interactive games during meals. However, Couturier and Mahmood (2009) acknowledged that, due to the various alterations to protocol included within the study (e.g., amending post-meal support), the results were unable to distinguish which particular variables may

have accounted for the decrease in nasogastric feeding. Clearly, future work is necessary to provide a more detailed view of the potentially influential effects of distraction for the mealtime experience of those with eating disorders.

The majority of the appetite literature which considers the influence of distraction during mealtimes has focused on the amount consumed (e.g., Bellisle & Dalix, 2001). However, in order to fully investigate the effects of distraction within clinical eating disorders settings it would seem necessary to look beyond this single variable. It is true that, for those involved in the care of service users with eating disorders, reaching a healthy BMI via increasing caloric intake is a common treatment goal (Fairburn & Harrison, 2003). However, aside from the amount eaten, other mealtime factors have been identified within the literature as potentially important in relation to the recovery of those with eating disorders. For instance, one factor relevant to mealtimes is that of anxiety. Individuals with eating disorders are known to experience higher levels of anxiety whilst eating than those without eating disorders (Léonard, Perpina, Bond & Treasure, 1998). Furthermore, individuals are thought to continue dysfunctional eating even after receiving treatment for eating disorders if they are still experiencing high levels of food-related anxiety (Stienglass, 2010b). Consequently, Stienglass (2010b) has suggested that the level of anxiety experienced during mealtimes could be a valid therapeutic target.

Another relevant factor is that of meal duration. It has been reported that individuals with anorexia spend longer eating a meal than do those without (Sunday & Halmi, 1996). Furthermore, anecdotal evidence suggests that the nature of in-patient treatment often requires service users to *complete* their meals. This understanding that eating disorders research needs to look beyond a simplistic account of amount consumed is demonstrated in a recent eating disorders mealtime pilot intervention by Treasure et al. (2010). They offered four individuals with anorexia a 'vodcast' whilst drinking a smoothie. Not only was the amount of smoothie consumed recorded to be higher in the test condition, but time taken to drink and drinking-related anxiety was also found to decrease after using the vodcast.

In summary, distraction is being used as a tool on in-patient units during mealtimes; however, this is not grounded in robust evidence. Although a limited number of studies have been conducted into the anxiety experienced by eating disordered individuals when eating and the time spent eating meals, none have considered the influence of different environmental distractions in relation to these factors. It is necessary to investigate the relationship between different distractions and eating behaviour and mealtime experience, in order to further the development of evidence-based care.

The aim of this study was to explore the eating behaviour and experience of individuals receiving in-patient treatment whilst eating under different distracting conditions. The current study describes the use of different distractions in a case series of three different service users. This method has been used within the previously mentioned mealtime intervention study conducted by Treasure et al. (2010), who reported that case studies give useful insight into mealtime interventions. Although traditional case studies involve an in-depth consideration of individuals (e.g., Bauer, 2010), similarly to the sample chosen by Treasure et al (2010), a small sample size was considered appropriate for a pilot study such as this. It was hypothesised that the distracting conditions would be associated with a greater decrease in subjective and objective anxiety, and a reduction in the duration of a meal compared to the control conditions.

8.2 Method

8.2.1 Participants

The inclusion criterion were set to be that service users should have been eating within the dining room for a period longer than two weeks (generally thought of as the admission period) and would be likely to be available for the full number of test sessions. The advice of ward staff was also sought in order to identify any volunteers who were unsuitable for recruitment to the study due to either medical reasons or other reasons associated with their treatment. Following these criteria, from those individuals that expressed an interest in taking part, three participants were recruited. All participants were

female, with a mean age of twenty years and five months (SD = 3.12.years, range 17.05 – 23.10 years) and all had received a diagnosis of anorexia nervosa, restricting sub-type.

8.2.2 Procedure

An initial meeting was held between the lead researcher and the local collaborator (nurse). After research and development approval had been granted, the lead researcher attended a community meeting at each ward in order to present the study to service users and the multi-disciplinary team. During the meeting, information sheets and consent forms were distributed to those service users interested in, and eligible for, the study. Service users were informed by the lead researcher that they had one week to decide if they wished to be included. If after the week, individuals wished to participate, they were requested to complete the consent form and hand back to the local collaborator.

The study consisted of four mealtime sessions: an initial familiarisation session followed by two test sessions (music and auditory story distraction) and a control session. The latter three were counterbalanced within each ward. All sessions took place during the lunch sitting, as this was when the main meal was served on the unit. Sessions were on the same day of the week over four consecutive weeks to reduce possible confounding variables.

For each session, the lead researcher was present on the ward prior to service users entering the dining room. Once sitting down for their meal, but before starting it, and again on leaving the dining room after the meal, participants were given a measure of subjective anxiety to complete, following a similar research protocol (Steinglass, 2010). Also immediately after each meal, participants completed a post-meal information sheet. This recorded information such as duration of the meal (to nearest minute), the number of staff and service users on their table and a seven point measure of the level of support they had received from staff and service users. Participants were also required to note whether (if they were in the music or audio story distraction condition) they had worn their headphones for the entire meal. Participants also wore wrist-worn heart rate monitors to record objective anxiety levels. Instructions were given to press a button, in order to

record heart rate, immediately before beginning their meal, whilst sat at their table, and again straight after finishing their meal, whilst sat at the table. The watch face was covered in order to avoid participants viewing their heart rate. All measures, MP3 players and heart rate monitors were distributed by the researcher outside of the dining room.

The first session acted as a familiarisation session, in order to ensure that participants were comfortable with the procedure prior to the test sessions. During the hour before this session, participants were asked to choose a piece of music and an auditory story from a designated list. Participants were given calming music to listen to, as used in previous studies (Allred, Byers & Sole, 2010). Music was chosen based on having 60 - 80 beats per minute or less, no lyrics and sustained melodic qualities, with no strong rhythms or percussion, in order to decrease the chance of increasing heart rate. Participants were given a choice of two musical pieces; a compilation of Beethoven and Chopin or 'Peaceful Harp' by Bruce Kurnow (available from MP3 downloads - Compass Productions 'Lifescapes'). For the audio story distraction, a choice of *Pride and Prejudice* (Penguin Group, 2003), *Twenty Thousand Leagues under the Sea* (Jules Verne, 1870), or *The Wonderful Wizard of Oz* (L. Frank Baum, 1900) (available from MP3 downloads - www.Lit2Go.com). This choice of literature was based on previous studies which have used classic story extracts containing no reference to food, shape and weight (e.g., Bellisle et al., 2004).

During the familiarisation session, upon entering the dining room, participants were given an MP3 player and free choice of what to listen to, excluding those pieces chosen for the test session. Instructions were given for participants to press play immediately on sitting down at their table and to press stop on leaving the dining room. Given the variability in mealtime protocols identified in Chapter three (the mealtime survey), no guidance was given regarding the amount of time the participant should spend eating. The unit followed their existing protocol as to how long the service user should spend eating or remaining within the dining room. It was made clear to participants at the start of each meal that if they wished to remove their headphones for any reason, they were free to do

so. They could return to listening to the MP3 player at any time. Only one participant reported taking out their headphone temporarily during one of the distraction conditions.

Following the familiarisation session, participants took part in three conditions, presented in a counterbalanced order across participants. During the control session, participants were not given a MP3 player and were not permitted to use their own. During the music distraction condition, participants listened to their chosen piece of music and in the audio story distraction condition they listened to their chosen story.

8.2.3 Measures

8.2.3.1 *State-Trait Anxiety Inventory (STAI-S) (Spielberger et al., 1970)*

Subjective anxiety was recorded, as has been done in previous research (Léonard et al., 1998) by using the Spielberger State-Trait Anxiety Inventory, State version (STAI-S). This is a validated, self-report twenty item rating scales designed to measure state anxiety (Spielberger et al., 1983). State anxiety is the measure of situation-related anxiety. Items prompt individuals to record how they feel at particular moments in time (e.g., calm, tense) on a four point scale ranging from 'not at all' to 'very much so'. The higher the score recorded, the higher the level of state anxiety experienced by the individual. This measure has previously been used to assess subjective anxiety within an eating disorder sample (Steinglass, 2011). Normative scores for the STAI-S with non-clinical females have been reported as 33.51 (\pm 8.61) (Knight, Waal-Manning & Spears, 1983).

8.2.3.2 *Heart rate*

Using similar techniques to Léonard et al., (1998), objective anxiety was measured using a heart rate monitor at the start of and after finishing each meal. As an alternative to the chest strap heart rate monitor, the BowFlex Classic pulse watch was used to provide an ECG recording of an individuals' pulse rate within 3 - 8 seconds of them placing their fingers on the sensors. The watch recorded and recalled participants' ECG with corresponding time and date.

8.2.4 Ethical considerations

The ward team were consulted at all stages of the research in order to identify those service users deemed unsuitable to participate for treatment reasons. It was made clear to participants that they were able to withdraw at any time without suffering any consequence to their treatment or needing to provide justification. Assurance was also given regarding anonymity and confidentiality of the data collected, including personal details. On no occasion did the researcher enter the dining room.

Participants were free to remove their headphones if they wished for any reason (e.g., to receive support from a member of staff). They were free to continue with the study after this break. After the study, debriefing sessions were held on each unit to explain to the participants the full details of the study.

8.3 Results

8.3.1 Case study 1: LH

LH was a twenty-one year old woman with a diagnosis of restrictive anorexia. During the meal condition listening to music she recorded an increase in anxiety, from 41 pre-meal to 50 post-meal, and spent ten minutes eating. In the story condition her anxiety pre-meal was higher than in the music condition at 59, but decreased slightly to 54 post-meal. During this condition it took twelve minutes for her to eat her meal. In the control condition her anxiety was lower than in both test conditions at 37 and remained at this level post-meal. The control condition meal took LH ten minutes to eat. LH reported asking for more staff support in the music and control condition than in the story condition, and the same low level support was reported to be asked for from peers in all conditions. LH was unable to record any ECG data for any condition.

8.3.2 Case study 2: BG

BG was a seventeen year old women with a diagnosis of restrictive anorexia. Her anxiety before the start of the music condition was 76 and this decreased slightly to 69 after the meal. She did not record how long it took for her to eat the meal in the music

condition. During the story condition her anxiety decreased slightly from 73 to 70, and in this condition it took her thirty minutes to eat. In the control condition she reported an increase in anxiety from 59 to 69. In the control condition it took BG twenty-five minutes to eat her meal. BG reported asking for an equal amount of low level support from staff and peers in both the story and the control condition, but the support levels required were not recorded for the music condition. BG failed to record two ECG data points in any of the three conditions.

8.3.3 Case study 3: JR

JR was a twenty-three year old women with a diagnosis of restrictive anorexia. In the music condition she reported her anxiety to increase from 58 to 60. In the story condition there was a slight decrease in anxiety from 75 to 74. Likewise a slight decrease was recorded in the control condition from 71 to 69. JR only recorded the duration of her meal for the story condition, which took her thirty minutes to eat her meal. JR did not report support levels required in the music condition, but recorded needing more support from staff during the story condition and more support from peers in the control condition. JR did not provide ECG data for any of the mealtime conditions.

8.4 Discussion

The aim of Study six was to pilot a distraction intervention to determine the influence of different distraction conditions on mealtime anxiety and duration. It was hypothesised that the distracting conditions (audio story and music) would be associated with a greater decrease in anxiety, and a reduction in the duration of a meal compared to the control condition.

Out of the three participants only one of the three individuals (BG) appears to show a greater anxiety decrease in both the distraction conditions compared to the control condition. However, all three individuals reported a decrease in anxiety during the condition where a story was listened to on an MP3 player. These results appear to partially support the hypothesis that a decrease in subjective anxiety would be recorded during the distraction condition. The lack of a decrease in subjective anxiety within the

music condition may be due to participants not enjoying the music they listened to. Although the pieces of music had been chosen by the participants, they had limited choice available to them.

No direct hypothesis was made regarding the levels of support received, data were collected in order to control for possible confounding variables which may have resulted from the use of the headphone and the limits this may have put on service users' ability to ask for and to receive support during the mealtimes. It may be worth considering that participant JR, who reported requiring the highest level of support, was also the only one to report a decrease in anxiety during the control condition. It is suggested that the control condition may have provided them with a situation wherein support was required and readily received due to not listening to an MP3 player, therefore possibility leading to a reduction in anxiety. It may be the case that the distraction conditions had a differing impact upon the anxiety levels of individuals due to them being in different stages of their treatment. This appears consistent with Blake, Turnbull and Treasure, (1997) who suggested that the therapeutic progress of an individual with anorexia is likely to occur in stages, with different interventions being more or less effective applied at different stages. Unfortunately, due to the missing data regarding the meal durations of BG and JR, differences in mealtime durations between the conditions and individuals cannot be discussed.

There were a number of methodological limitations connected to the implementation of this pilot study. ECG heart rate recording were unable to be recorded due to the inability of the wrist-worn heart rate monitors to record participants' heart rate accurately, thus no objective levels of anxiety was recorded. Although participants had practised in using the heart rate monitors prior to the test conditions, most found that when in the dining room they were unable to activate the ECG recording. It is likely that due to the beginning of meals being times of likely increased anxiety (Steinglass, 2010), participants had limited patience to hold down the button for the time period necessary for the heart rate monitor to register a reading. This could have been exacerbated by the

observed extended periods (longer than those mentioned within the equipment instructions) needed for the heart rate monitors to record heart rate. This was likely to be due to particularly low level heart rates, as has been noted to be experienced by individuals with anorexia as a result of starvation (Ulger et al., 2006). Further difficulties were seen to exist regarding the use of the heart rate monitors, even had they worked effectively. Before entering the dining room, it was observed by the researcher present that participants were often visibly anxious, and frequently engaged in pacing behaviour. This would have affected the pre-meal reading, even if taken when seated.

Alongside the absence of recordings made by the heart rate monitors, this study had other limitations. As highlighted with similar studies (Couturier & Mahmood, 2009), it was also possible that different aspects of the dining room could change from week to week. For example, the staff supervising the meals were not constant across the conditions, even if the *number* of staff stayed the same. This could be hypothesised to be an influential factor considering previous appetite literature that brings to light the effect of others on mealtime enjoyment and level of consumption (de Castro et al, 1997).

Although a number of limitations have been acknowledged, with slight alterations to the current protocol, it would appear beneficial to conduct this study on a larger scale than presented for the purpose of a pilot study within this current body of work. Moreover, if a case study design is used, it is suggested that extra data should be collected via individual interviews or focus groups to add detail to the case studies, such as awareness of rates of consumption, as has been done in similar studies (Wansink & Sobal, 2007). Future research designs could overcome the difficulties experienced with the heart rate monitors with more rigorous pre-study training. Alternative, whilst originally not thought appropriate for mealtimes on eating disorders wards for fear of being seen as being too invasive, electrocardiogram limb electrodes, requiring contact points on the arms and legs of participants could be used. It is suggested that if time is focused on engaging service users with research, and involving them in the design and implementation of research

there may be an increased possibility that they would consent to such equipment being used.

In summary, this pilot study showed a trend for a reduction in anxiety during meals eaten whilst listening to an audio story. However, this study mainly highlights a number of potentially limiting methodological points connected to the implementation of clinical research. Despite this, the current study is able to provide valuable evaluation of the methodology required in order to be able to conduct further investigation into the influence of distractions on anxiety for those with eating disorders.

Chapter 9 : General discussion

9.1 Rationale of the present thesis

The importance of mealtime care to the recovery for those receiving treatment for eating disorders has been acknowledged (e.g., Geller et al., 2001). However, as highlighted within the literature review of this present thesis, there has been a lack of empirical research on which to base mealtime practices. As a result, the area of mealtimes within in-patient treatment has been identified, by those within the field, as requiring attention (e.g., Prestwood, 2009). In contrast, within the non-clinical populations, there have been a substantial number of studies that have explored the associations between environmental factors and both individuals' behaviour during and their experience of mealtimes (e.g., Bellisle & Dalix, 2001; Stroebele & de Castro, 2004a). For example, studies have found distractions, such as the presence of a television, within the eating environment are able of increasing intake (e.g., Stroebele & de Castro, 2004a). Additionally, factors, such as audio sounds, have been found to increase meal satisfaction (e.g., Blumenthal, 2007).

9.2 Aims of the present thesis

This thesis had four broad aims. First, to assess current mealtime practices implemented within eating disorders services. A survey was conducted across a range of eating disorders units (both NHS and private practices), to determine how units implemented their meals. Second, to explore the perception of mealtimes from the perspective of in-patient unit staff. Third, to investigate the perspectives of service users of their experiences of mealtimes on the in-patient units. Both current service users and staff members of multi-disciplinary eating disorders teams were interviewed to gain their personal opinions of mealtimes. Lastly, to experimentally consider the impact of environmental factors upon the eating behaviour and mealtime experiences of those with high levels of eating psychopathology. Studies were conducted using a variety of methods. First, a non-clinical diary study was conducted to investigate factors that might contribute to decreased anxiety or increased intake within a naturalistic setting. Following

this, variables of interest were investigated within a laboratory study. Finally, the mealtime protocol on an in-patient eating disorders unit was manipulated to explore the effects of distraction within a clinical setting.

9.3 Summary of results

9.3.1 Chapter 3: Study 1

In a survey of a wide range of UK eating disorders units, results suggested that there are numerous variations both between and within the mealtime practices implemented. The key between-unit differences were identified to be: staff to service user ratio, the degree of involvement from nursing staff during the meal (i.e., whether they ate with service users), time given for menu choice, time allowed to complete meals and allocation of post-meal resting time and arrangement of the dining room. Key within-unit variations included consistency of staff involvement (i.e., how often staff members ate alongside service users), involvement of non-nursing staff and whether certain individuals were allowed to self-serve their meals. The most striking commonality between units was the utilisation of distractions during mealtimes, which was present in the majority of units' survey responses.

9.3.2 Chapter 4: Study 2

Following on from the wide range of mealtime practices identified as being used from the survey in the previous study, interviews with staff were conducted to explore these variations in more depth. Staff emphasised the importance of their roles both individually and as part of a wider team, in order to feel able to care for individuals during mealtimes. They stated that meals require individual staff members to be assigned clear duties, and found this most helpful when roles were outlined prior to meals. Staff were able to define certain practices which they perceived to be helpful for service users. Additionally, they stated that pre-meal preparation was the key to implementing successful care during mealtimes. For example, they identified both training and practical preparation

before a meal as important in enabling them to feel confident in their ability to offer mealtime support.

The interviews also highlighted the difficulties faced by staff when providing care for those with eating disorders during mealtimes. A number of personal barriers were spoken of, many capable of affecting the care provided by staff. First, certain staff expressed unease around having to observe service users. For some, this supervision promoted feelings of being in conflict with service users, especially if having to correct abnormal eating behaviour. This was seen to develop into an 'us' and 'them' type culture which contradicted, for some, the ideals which had led them into their care-providing careers. Staff also expressed concern regarding the inadequacies of mealtime-specific training, leading certain individuals to feel unconfident towards providing suitable care. Lastly, it was acknowledged that the relationships between staff and service users could be a potential barrier to providing successful treatment during mealtimes (i.e., promoting weight gain and overcoming difficulties associated with eating). Staff spoke of experiencing a level of negativity towards service users, such as distrusting their actions. Importantly, interviews highlighted areas of mealtime protocol which could be improved upon. Furthermore, individuals expressed desire for the opportunity to be able to give feedback on mealtime practices and effect change within protocol.

9.3.3 Chapter 5: Study 3

Following from the exploration of staff views in Study two, Chapter five described individual interviews conducted with current service users of eating disorders units. Again, the area of mealtimes was investigated to gain personal perspectives of the practices outlined in the survey reported in Chapter three. Service users identified various factors which could influence their experience of mealtimes, including the organisation of the dining room, the conduct of the staff, quality of the food and distractions within the environment. Alongside this, they expressed four ways in which mealtimes could affect them: physically, cognitively, emotionally and behaviourally. Moreover, service users expressed a desire for staff to recognise these four areas and give specific support for

each. However, interviewees raised concerns that some staff were incapable or unwilling to support them in the necessary areas. Lastly, service users categorised their experience of mealtimes into two broad areas. First, a number of service users identified mealtimes as being similar to battlegrounds. This involved various conflicts: between staff and service users, between individual service users and also the personal battles which occur internally. The second way in which mealtimes were described to be experienced was as routines which promoted disengagement from treatment. Service users offered ideas by which they felt mealtimes could be improved and likewise to that expressed by staff, desired routes by which they could influence change.

9.3.4 Chapter 6: Study 4

The findings of studies two and three concluded that environmental factors can influence the mealtime experience of those with eating disorders. Moreover, interviewees stated that they often implemented distraction techniques during meals. Following these findings, a naturalistic design (study 4) was used to further explore environmental factors and eating psychopathology (using a diet diary to record meals eaten in participants' homes). The outcome variables were the amount reportedly consumed and the levels of mealtime anxiety experienced. Differences between levels of eating psychopathology and the outcome variables did not reach statistical significance. However, the majority of participants reported lower mean anxieties during meals eaten with distractions compared to those without distractions. Moreover, although not statistically significant, those with high levels of eating psychopathology reported eating more during meals when distractions were present compared to when eating without distractions. In contrast, those with low levels of eating psychopathology were seen to eat less during distraction conditions compared to when eating without distractions. The lack of significance within the analyses may have been due to methodological limitations.

9.3.5 Chapter 7: Study 5

Chapter seven attempted to further explore the relationships between the eating environment and individuals' behaviour and experience during mealtimes. The effects of

eating whilst listening to an auditory distraction stimulus (audio story) was compared with eating in a control and focused attention condition (recorded instructions to focus on certain aspects of the meal). The results of this study replicated previous findings that showed individuals to over consume during distraction conditions relative to when eating without distractions. Additionally, the results of Study five suggested this relative overconsumption to be apparent in individuals irrespective of their levels of eating psychopathology. Therefore importantly, even those with high levels of eating psychopathology consumed more in conditions where they had been distracted than when eating in a control or focused attention condition. Study five also found individuals' levels of Drive for Thinness to be associated with an overestimation of intake during eating conditions when attention was directed towards the meal being consumed.

9.3.6 Chapter 8: Study 6

The last study was designed in order to test the influence of distraction on duration of, and anxiety experienced during, meals, for individuals receiving in-patient eating disorders treatment. The duration of the meal, together with the changes in anxiety from pre- to post meal were recorded during three differing conditions: music, audio story and without imposed distraction. Additionally, this study piloted the use of wrist-worn heart rate monitors, to measure objective anxiety within a clinical sample. Methodological limitations were discussed as to why this was unsuccessful (e.g., participants not holding button down for sufficient time for monitor to take heart rate recording). The case studies reported in Study six showed only one individual to record a greater anxiety decrease in both the music and audio story conditions compared to the control condition. However, all three individuals reported a decrease in anxiety during the audio story condition.

9.4 Contribution of the present thesis to the understanding of mealtimes on eating disorders units

9.4.1 Influence of external factors on mealtime behaviour and experience in relation to eating psychopathology

9.4.1.1 *Ambience*

Prior to the investigations reported in this thesis, no studies had been conducted to explore the effect of ambience on the mealtime experience of those with eating disorders. The findings of the current thesis suggest that the eating environment is able to influence the mealtime experience of those with eating disorders (e.g., influence their satisfaction of the mealtime). Service users interviewed within study three commented on wanting meals to feel more normalised and homely. Likewise, staff interviewed within study two had an appreciation that the atmosphere created in the dining room could be influential to the experience of mealtimes for both themselves and service users. These findings are the first to suggest that the mealtimes of those with eating disorders are influenced by the surroundings in which they are eaten. It would appear that, in regards to dining ambience, the experience of those with eating disorders mirrors those of non-clinical samples (e.g., Dickinson et al., 2008; Edwards et al., 2003; King et al., 2007; Wall & Berry, 2007) and service users of general medical units (Desai et al., 2007; Mathey et al., 2001; Murray, 1997). This evidence provides support for those guidelines which have previously suggested to parents and carers that they should place importance on creating a positive environment (e.g., McMaster's Children's Hospital guidelines, unpublished).

This connection proposed between the ambience of individuals' satisfaction with a meal can be explained in terms of the stimulus-organism-response (S-O-R) paradigm (Mehrabian & Russel, 1974). It is suggested that, during meals, the perceptions of stimuli within the eating environment (S) lead to an emotive responsive in the individual (O), which is then followed by an approach or avoidance behaviour (R). For those receiving in-patient care, an avoidance response may not be possible. However, in line with the S-R-O

paradigm it is suggested that stimuli within the eating environment are capable of eliciting emotive responses which then influence satisfaction with the meal.

9.4.1.2 *People present*

People within the eating environment were seen by service users in study three to influence their experience of mealtimes both positively and negatively. Service users commented that it was helpful to have staff eat alongside them during the meals. One of the main reasons for this being beneficial was due to the behaviour of the staff acting as a role model for the service users. One theory which could be used to explain these findings is that of social modelling, first described by Nisbett and Storms (1974). This is the theory that individuals consume more when those around them eat a larger amount, and less when they eat a smaller amount (see Herman et al., 2003 for a review). In line with this theory, these results suggest that, for certain service users, if staff do not eat alongside them, eating is perceived as being harder due to having no 'model' on which to base their eating. Alternatively, it is possible that the encouragement given, or simply the presence of an observer, may have facilitated intake. Without the presence of another individual, those with a tendency to restrict their food intake would be susceptible to the cognitive control strategies used to limit their intake. Support for this explanation can be drawn from the literature with non-clinical individuals wherein a 'social facilitation effect' is observed, with the more people present, the greater the amount consumed (e.g., Stroebele & de Castro, 2006).

In addition, study three found that a number of service users viewed their meals as battlegrounds, wherein they could feel as though they were in competition with other service users and in conflict with staff. It is possible that these feelings of discomfort due to being observed by others could be explained using impression management. It has been suggested that if an individual perceives themselves as being judged or overtly observed during an eating episode, their intake will decrease (e.g., Herman et al., 2003). This would suggest that, the *types* of relationships and the behaviour of those present, rather than simply the *number* (as proposed by the social facilitation effect), is influential to

the intake of those with eating disorders. Moreover, it is possible that the influence of such impression management would be greater for individuals with eating disorders due to their likelihood of experiencing higher levels of shame and guilt than non-clinical individuals (Keith, Gillanders & Simpson, 2009). However, further investigation would be required to verify this hypothesis.

9.4.1.3 *Environmental distraction*

This thesis explored the influence of distraction on intake in relation to eating psychopathology, a previously un-researched phenomenon, despite the recommendations for the use of distractions within guidelines of mealtime support (e.g., McMaster Children's Hospital guidelines, unpublished). Findings suggest that all individuals are susceptible to over-consumption during distraction conditions, irrespective of their level of eating psychopathology (study 5). An explanation of these findings can be drawn from the Limited Cognitive Capacity Model (Boon et al., 2002), as others have concluded using non-clinical samples (e.g., Higgs & Woodward, 2009). In line with this theory, the increased consumption within the distraction condition can be explained by attentional resources, which would normally have been directed towards satiety cues, being diverted to the distracting stimuli. As a result of this, attention is taken away from the physiological signals associated with becoming full, leading to over consumption. This is further supported by the findings of study five that showed that participants reported being less full in the distraction than in the control condition, even though intake was higher in the former condition. In contrast, study four found that only those with high levels of eating psychopathology ate more in distraction conditions compared to no distraction conditions, whereas the converse was true for individuals with low levels of eating psychopathology. These findings did not reach statistical significance, possibly due to methodological problems. Due to the potential clinical implications of such a study, it is suggested that future studies attempt to replicate and extend this study with a large sample size.

Additionally, study four found, during conditions where participants' attention was focused on the food, the higher their level of Drive for Thinness the greater the ability to

estimate intake. Although not a clinical population, this finding may have relevance to the experience of mealtimes for those with eating disorders. It is proposed that if an individual with an eating disorder is at a higher risk of monitoring their intake whilst focused on the food, then distraction stimuli may work to displace this attention and thus decrease anxiety. This finding is similar to that of Cessna et al. (2007), who observed that participants' ability to adequately estimate how much they had eaten was reduced during eating conditions when individuals had been distracted compared to when they were not distracted.

Within the clinical samples of this current thesis, distractions were both observed (study 6) and reported (study 3) to decrease mealtime anxiety. Alongside this, study four observed non-clinical participants with high levels of eating psychopathology to report lower mealtime anxiety during meals eaten when a distraction was present compared to when no distraction was present. Although these particular findings did not reach statistical significance, when viewed alongside the findings of study six and three, it is suggested this thesis provides support for the use of distraction in mealtime care, as has previously been advised without being grounded in empirical evidence (Great Ormond Street Hospital guidelines, unpublished; McMaster's Children's Hospital guidelines, unpublished). This evidence suggests that, for those with eating disorders, distractions are able to displace individuals' attention from the food-related anxiety to the environmental distraction. However, although at first sight this is a beneficial tool for reducing anxiety during mealtimes for those with eating disorders, further work is essential in regards to its application. As reported by Bentz, Michael, de Quervain and Wilhelm (2010), recovery from fear responses requires an extinction process involving the formation of novel non-fear responses. Following this line of reason, for those with eating disorders to challenge their negative responses to food, new pathways must be created which form new, positive stimulus-response relationships. It is suggested that this would not be possible if focus was continually diverted away from the anxiety provoking food cues by external distractions.

9.4.1.4 Food

Service users interviewed within study three reported that the content of the meals served was able to influence their experience of the meal; a number of interviewees commented that they would have preferred the food to be of higher quality. This preference for pleasant tasting food mirrors studies which have shown non-clinical individuals to increase intake when food is rated higher on general acceptability and taste (e.g., de Graaf et al., 2005). Similarly, a study by Blatt, Roe and Rolls (2011) found that children will increase their intake of vegetables if the vegetables are puréed into a palatable food. Previously, it has been suggested that individuals with anorexia only report liking a sweet taste if not ingesting the solution given (Drewnowski, Halmi, Pierce, Gibbs & Smith, 1987). However, study three in this thesis suggests that palatability is perceived by service users to be capable of increasing their intake.

Service users also made reference to the lack of variety of food being a cause of complaint in relation to mealtime provisions. Within the interviews of study three, it was stated that if the food was more varied, individuals would be more willing to consume. If found to be supported in practice this could be explained using the explanation of palatability proposed by Rolls (1979). This states that, the increase in consumption which is observed to occur when a range of foods are made available is due to the sensory differences that they provide; a theory which has received support within non-clinical samples (e.g., Brondel et al., 2009).

9.4.2 Service users' perceptions of mealtimes

The findings of study three suggested that the ways in which individuals experience aspects of their eating disorder (e.g., eating disordered cognitions and feelings of being bloated) would influence their perspective of the mealtime. For example, if an individual was having particular difficulties with the physical feelings of being full, meals were more difficult. Moreover, feelings of frustrations towards the mealtimes would come about if staff were unwilling or unable to support them with these difficulties. The same applied with cognitions, emotions and behaviours.

A number of service users interviewed described mealtimes as negative experiences (as battlegrounds or routines they were disengaged from). It is suggested that these findings are an important cause for consideration. If individuals are not engaged with their treatment during mealtimes, they will be prevented from developing their learning, as is necessary for recovery. As mentioned above, Bentz et al., (2010) stated that if an individual is to change from fear responses to novel non-fear responses, an extinction process is necessary. Similarly, if experiencing pressure (as stated by those who viewed mealtimes as battlegrounds), Batsell, Brown, Ansfield and Paschalld (2002) state that individuals are likely to have their fears of food reinforced. It is possible to look towards the developmental psychology literature to shed light on the experience of eating within such negative social contexts. For example, Birch and Fisher (1996) presented the food preferences model, wherein food presented to children in negative contexts would be more likely to be rejected than food presented in positive contexts. Specifically, they commented that when force is used in an attempt to get a child to eat, this negative social situation may increase the likelihood of the food being rejected. Translated to the perception of mealtimes as battlegrounds, the acts associated with trying to get an individual to eat their meal, may actually decrease the desire for them to consume that food in the future. Furthermore, as stated above, the presence of others within this battleground perception of mealtimes may further inhibit the intake of service users via impression management. If those present are seen as observers, as the survey results signify, this could inhibit intake further.

9.4.3 Proposed mealtime model

The findings that have been discussed in the above sections, suggest various factors which are able to influence the mealtime experience for individuals with eating disorders. As a summary of these suggestions, the following mealtime experience model is proposed as a way of visually representing mealtimes within eating disorders care from the perspective of service users (Figure 9.1). The model can be seen to resemble the Lewin's equation (1936), which states that behaviour is a function of the person and their

environment. Likewise, the mealtime model below gives an overview of how factors associated with the environment and those internal to the individual blend to impact upon individual experience, and thus behaviour during a meal.

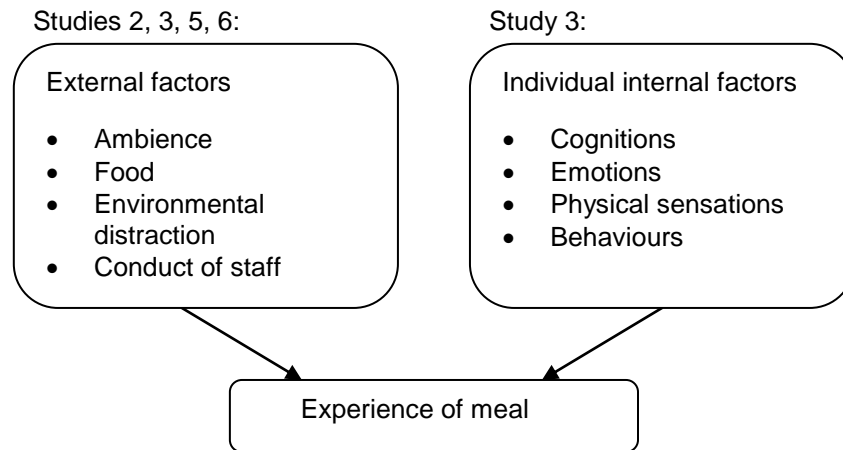


Figure: 9.1: Proposed model of mealtime experience for individuals with eating disorders

The model proposed above depicts two components of individual mealtime experience. First, external factors including the ambience of the dining room, the quality and variety of the food served, the environmental distractions present and the conduct of staff (e.g., whether they eat alongside service users or whether they are sufficiently able to support service users) can influence the mealtime experience. Second, how each individual is experiencing their eating disorder internally is also proposed to influence their mealtime experience. The combined experience of such internal and external factors creates the experience of the mealtime for each individual. It is suggested that the components of the above model require replication and validation. Subsequent testing of this model could identify potentially useful areas for targeted mealtime interventions.

9.5 Limitations of this present thesis

The studies within this thesis are able to successfully contribute to the knowledge of mealtimes on in-patient eating disorders units. However, it is imperative that the limitations of such research are acknowledged in order for future studies to consider, and attempt to overcome these. There are a number of improvements which could be made to

the methodology of the survey of study one. Although it was considered a strength of the survey that it could be completed by any member of staff who regularly ate meals in the unit dining room, this also had associated drawbacks. By not addressing the survey to a particular individual, it is suggested that the email may have been overlooked on the units. Indeed, it has previously been suggested that personally addressing surveys to individuals is likely to increase response rates (Scott, & Edwards, 2006). It is also possible that those staff members most likely to take part in meals may be least likely to answer emails; therefore the survey may never have reached a suitable candidate. In retrospect, it may have increased response rate had a second reminder been sent to participants, as suggested by Nakash, Hutton, Jørstad-Stein, Gates and Lamb (2006). Alternatively, the survey could have been administered in person by the researcher, as has been previously recommended by Edwards (2010). Furthermore, due to only one participant being required to complete the survey at each unit, it is acknowledged that the response will reflect only that one individual's perspective. This was highlighted within the interviews (Chapters 4 & 5), in that staff working on the same units may perceive the mealtimes within the unit differently. However, considering the lack of understanding surrounding the conduct of mealtimes on eating disorders units, even with these limitations regarding overall response rate and detail within the responses, the survey provides valuable insights, which were able to act as a foundation for the following studies of this thesis.

The interviews reported in studies two and three were conducted to explore the perceptions of individuals regarding mealtimes when receiving or implementing care. As has previously been acknowledged (e.g., Perkins et al., 2004), such exploration of personal experience is suited to a qualitative methodology. It is commonly stated that a limitation of studies using qualitative designs is that the findings cannot be extended to wider populations with the degree of certainty used by quantitative studies, as no statistical analysis can be run (e.g., Ballauff et al., 1999). Despite this, qualitative research has been acknowledged to be useful within the field of eating disorders (Bell, 2003). An advantage of consulting a wide variety of staff from within the multi-disciplinary team was

that the staff interviews were able to draw on differing perspectives, giving a holistic view of a wide range of disciplines involved with meals. However, this also had limitations in that comparisons across interviews were not possible. Details of length of experience and role within meals were not recorded, nor were they added into the analysis with the transcripts. It may have added to the findings to have considered these individual factors alongside the perspectives of the interviewees. Likewise, during the service user interviews, unless it was brought up by the interviewee, no details were taken of the length of time spent in in-patient treatment, or duration of the eating disorder. In order for the above to be acknowledged, it is suggested that in-depth case studies could be implemented, as others have previously conducted (Morgan & Lacey, 2000). This would allow exploration of the issues raised within the interviews of studies two and three, whilst putting them in their individually relevant context.

As previously discussed within Chapter six, the diary study also had a number of limitations. Even with incentives for participants (course credits), lack of independent checks made by a researcher means the reliability of the data collected remains questionable. Although it was instructed that data be recorded immediately after each meal, there is a possibility that individuals did not fully comply, for example, choosing to recall a number of meals consecutively. This could have drawbacks in terms of missed information or reduced reliability of ratings due to retrospective recall. As previously discussed (within Chapter 6), the use of ecological momentary assessment (EMA), as used by others (e.g., Tasca et al., 2009), may be useful for future studies to avoid such limitations. Furthermore, a number of the studies in this collection relied on participants self-reporting data, such as eating psychopathology and subjective anxiety. Although the reliability of the self-report measures of eating psychopathology are thought to be greater than those where the identity of the participant is made known to the researcher (Anderson, Simmons, Milnes, & Earleywine, 2007), the possibility remains that the data collected may be distorted. For example, participants may have consciously attempted to

represent themselves in a certain way to comply with their perceptions of the purpose of the study.

In relation to the subjective anxiety measure used within study six, it is possible that there are limitations connected to this form of measure for use in clinical samples. Individuals with high levels of eating psychopathology are suggested to be more likely to have high levels of alexithymia than non-clinical individuals (e.g., Bourke, Taylor, Parker & Bagby, 1992), and thus have greater difficulties in identifying or describing their feelings. It was because of this possible limitation that study six attempted to implement an objective measure of anxiety alongside the subjective measure. However, another striking limitation to study six (Chapter 8) was the lack of data able to be collected by the wrist-worn heart rate monitors. It is suggested that either an alternative method of data collection of objective anxiety is used in the future, or studies attempt to overcome some of the associated difficulties by increasing the involvement of staff so they are able to assist with data collection. Another drawback of this clinical study was the level of detail able to be collected from each individual. Ideally, each participant's data could have been viewed alongside their personal account of each meal. For instance, it is suggested that future studies could conduct interviews or focus groups after the test conditions. It would then be possible to elaborate on data collected, for example ascertaining whether individuals enjoyed the music they listened to, or if they had found the MP3 player uncomfortable to use. This method of adding a qualitative element to quantitative data collection has recently been employed by Treasure et al. (2010) to good effect. An additional limitation of this study was the reliance on cross sectional data rather than longitudinal results. It is acknowledged that the importance of considering the mealtime environment is due to the need to improve the outcome of in-patient treatment for those with eating disorders; however, none of the studies conducted within this thesis consider treatment outcome. It is suggested that future studies should look at mealtimes in relation to recovery and remission rates of those discharged from in-patient units.

The laboratory study (Chapter 7) also presented limitations worthy of consideration. It is possible that the control condition (wherein no recorded audio story or instructions were listened to), actually acted more like a focused attention condition. When participants were asked to eat the meal with no pre-recorded stimuli, it may be the case that individuals paid greater attention to the amount consumed during their meal than under a more realistic setting. This may have been especially true for individuals with high levels of eating psychopathology, given the heightened attention known to be given to food-related stimuli by those with anorexia (Nikendei et al., 2008; Stormark & Torkildsen, 2004). Another limitation of this study was that no measure of attention towards the distracting stimuli (distraction condition) or food eaten (focused attention condition) was made. Had this been done, it may have been possible to assess how successfully each individual had attended to either stimulus, giving support to the validity of the conditions utilised.

The sample used within the laboratory study and the diary study (Chapters 6 & 7) could also be argued to present limitations. Both samples were drawn from undergraduate university students. Therefore, the degree to which results obtained can be generalised to a non-student population is questionable. Moreover, the participants were recruited via self-selected sampling, with both studies advertised as involving food. This may have resulted in a bias in those individuals who volunteered. For example, individuals who considered themselves to have eating difficulties may not have chosen to participate in such studies. However, for both studies, measures of eating psychopathology were recorded to be within the normal range for non-clinical samples, giving some reassurance to the normality of the sample.

9.6 Clinical implications of the findings

9.6.1 Suggestions for what to do before, during and after meals

The following section suggests ways in which the findings of the current thesis could be translated into clinical practice. It is important to stress that such advice is the first step and only through the implementation of the suggested further research (see

section 9.7) will such advice be refined and improved through additional grounding in the evidence-base.

9.6.1.1 *Pre-meals*

A number of the findings of this thesis point towards the need for the development and implementation of mealtime-specific training for use on in-patient eating disorders units. During the staff interviews of study two, interviewees expressed concern in regards to not having sufficient skills to implement treatment during mealtimes. Additionally, the survey (study 1) exposed variation between individual units in their mealtime practices. Moreover, these discrepancies were described to cause frustrations for both staff and service users (Studies 2 & 3 respectively). This call for greater consistency and reliance on evidence-based treatment practices within eating disorders care has been made by others within the field (e.g., Couturier & Mahmood, 2009; Prestwood, 2009).

Considering the negative views expressed by staff within study two, and those expressed elsewhere within the literature (e.g., Ryan & Golden, 2006), it is recommended that externalisation exercises are used within such mealtime-specific training. Indeed, such narratives have previously been found to be helpful for those with eating disorders (e.g., Weber, Davis & McPhie, 2006). The focus of such a practice is to concentrate on the illness as the cause of the discomfort within the individual (the staff) rather than putting the blame on the service users or directing it internally.

It is imperative that within mealtime-specific training, the different areas of staff expertise are recognised, and the dissemination of successful practice is facilitated. Despite one of the interviewees in the study two describing role play to be helpful, but 'naughty', it is instead suggested that this would be a valuable tool to implement within mealtime training. Indeed the use of role play as a useful tool in the learning experience amongst other medical professionals has been documented (e.g., Nestel & Tierney, 2007). It would be desirable for a training package to be developed that enables staff to share skills between themselves, along with learning new techniques. It is also possible that role play sessions could be recorded and used within instructional training for others,

a tool which has been previously employed elsewhere (e.g., Whitakera & Macdonald, 2008). A proposed mealtime training package has been developed from the findings of the studies in this thesis (Appendix J). The training package has been designed to be implemented over seven weeks, with each week's session estimated to last between one and two hours. Each session has been developed to focus on different areas which were identified within the studies of this thesis (successful strategies, creating positive mealtimes, understanding experience of service users, empowering service users, reflection on individual role during mealtimes, teamwork). The last session is included in order to provide a general evaluation of the training program. Such a training package would need to be evaluated within a clinical setting, however could possibly aid provisions of mealtimes.

It is further suggested that inconsistencies between individual practices would be limited by scheduling in the sharing of information directly related to mealtimes within the handovers between shifts. It is recommended that part of this time be dedicated to addressing how each service user is perceived to be experiencing mealtimes, their individual goals and each staff member's role during the meals. This would also develop the team ethos, expressed as being important to staff feeling supported through their provision of care, along with clarifying their role within that structure.

Practically, before a meal, it may also be useful for staff to be able to refer to a document which outlined their duties for each meal. This could take the form of a checklist which outlined all necessary requirements related to setting up mealtimes. Additionally, in order for consistency of practice, it is suggested that staff could be encouraged to refer to material relating to the expected practices and the rationale behind them.

Alongside the above proposals, it is suggested that an incremental approach to mealtime supervision is adopted. Within such an approach, staff could move through a progression of roles, allowing them to build their confidence. For example, newer staff could be asked to first set the tables and serve food, then progress to shadowing more experienced members of staff during the meal sitting, followed by taking sole responsibility

for observing a service user(s). By implementing shadowing, it is suggested the unit will set a precedent for the importance of the role of staff during mealtimes, along with giving individuals time to gain confidence and be exposed to the mealtime situation.

It is also recommended that staff work with service users to decrease the meal-related anxiety prior to the meal sitting. One possibility to achieve this could be to introduce techniques such as progressive muscle relaxation (Jacobson, 1934). This process involves progressively tensing and releasing various muscle groups, thought to promote complete elimination of muscle contractions, thus promoting the direct physiological opposite of experiencing tension (Bernstein & Borkovec, 1973). The order in which the muscle groups are stated to be tensed have been suggested previously (Bernstein, Borkovec, & Hazlett-Stevens, 2000) and have been used to good effect in other clinical groups (e.g., Heimberg & Juster, 1995). It is envisaged that staff could use this technique to encourage service users to relax before and/or after a meal. The potential benefits of similar relaxation sessions have been recorded within the eating disorders literature (Steinglass, 2010). In light of the anxiety experienced by staff (study 2), it is suggested that staff could also be able to use this within their own practice to aid their own relaxation. This follows the advice of one particular participant who acknowledged that it was beneficial for staff to try and remain calm as service users often picked up on their own anxieties.

Another possible route to take in order to try and reduce anxiety during meals could be to ensure service users are taught skills of metacognition. Through this awareness of cognition they could learn to identify their thoughts during mealtimes as beliefs rather than facts. Although metacognition has been identified as an under-researched area, suggestions have been made as to the worth of exploring such concepts within eating disorder treatments (Cooper, Grocutt, Deepak & Bailey, 2007).

9.6.1.2 *During meals*

Distraction within the eating environment is commonly implemented within the mealtime care of those with eating disorders (e.g., Couturier & Mahmood, 2009).

However, as was mentioned previously within this Chapter, distraction alone, without complimentary focused intervention to target eating disordered cognitions and behaviours, is suggested to be inadequate. Instead, it is suggested that distractions (such as music) are used to create a relaxed atmosphere alongside other therapeutic strategies.

The NICE guidelines (2004) state the dysfunctional cognitions of individuals with eating disorders must be addressed during treatment. However, some interviewees within study two and three expressed concern that due to the possibility that this would increase anxieties, discussions related to food and anorexic thinking should be avoided during mealtimes. Indeed, others have suggested that the discussions of eating disordered thoughts should be discouraged during mealtimes (e.g., Couturier & Mahmood, 2009). In contrast, the findings of study three suggest that service users want staff members to deal with their complex needs (such as their cognitions towards food), and become disengaged from mealtime treatment if they experience only pressure from staff to eat.

It is suggested that care plans are developed which specify for each individual mealtime-related goals to work towards; whether those be cognitive goals or behavioural ones. For example, if individuals are working towards modifying their reactions towards food, this should be dealt with directly as has been proposed by others authors (Treasure et al., 2010). This would allow for a dialogue between staff and service users around individually tailored care and build on a feeling of cohesiveness and trust, seen to be lacking when service users described meals as disengaging or battlegrounds. Additionally, allowing for this open discussion (alongside prior complimentary mealtime-specific training) may give staff encouragement to challenge eating disordered behaviour where before they felt unable to. Through individually set targets it is suggested that service users who would benefit from increased autonomy could become more involved, such as being able to self-serve their own meals. Indeed, previous interventions have found that increasing the autonomy of service users can provide beneficial results (e.g., Conkin et al., 1998; Fairburn et al., 2008; Lock, 2009; Sandy et al., 2007).

The individualised nature of care which service users reported to desire could suit the implementation of the style of interaction promoted by motivational interviewing, a technique previously advocated for carers of those with eating disorders (e.g., Price-Evans & Treasure, 2011; Whitaker & Macdonald, 2008). This technique rests on the assumption made by the transtheoretical model that suggests individuals move through a succession of qualitatively distinct states which characterise how each feels towards their motivation to engage with treatment and recovery (Prochaska, Redding & Evers, 1997). In relation to these stages (precontemplation, contemplation, preparation, action and maintenance) it has been suggested that the specific treatment required for each individual must be tailored to whichever state they currently occupy. Motivational interviewing is a 'person-centred' approach which aims to increase the motivation of the individual to explore their position, overcome ambivalence and increase self-efficacy (Miller & Rollnick, 2002). By putting the focus on the individual and their own desire to change, a motivational interview approach during mealtimes may allow service users to feel in control of challenging their eating disorders.

Furthermore, it is proposed that the use of motivational interviewing would benefit staff during the mealtimes. The interviews of study two showed how staff could experience their roles negatively when having to work with service users who appear resistant to change. Motivational interviewing would advocate therapists to 'roll with resistance'. Rather than frustrations developing due to service users' resistance to change, motivational interviewing encourages therapists to use a suitable individualised response, observing resistance as a natural part of service users' current state (Miller & Rollnick, 2002). Likewise, Geller et al. (2001) commented that staff should aim to stay on the same side as the service users. They described the benefits of staff actively discussing issues with service users, such as refusal to eat, reviewing the problem openly without using force. However, Geller et al. (2001) also stated that this approach needed practice in order to be implemented effectively.

Additionally, therapeutic strategies could be developed from exposure and response prevention therapy, which has previously been advocated for use with individuals with anorexia by Steinglass et al. (2011). Within this, the therapist's role is to educate the individual regarding how their fears maintain their eating disorder. It is suggested such an approach would facilitate staff in attending to the needs of service users, for example by addressing their eating disordered related cognitions, or encouraging attending to physical sensations created by the anxiety with a focus on relaxing training.

A further consideration is the importance which needs to be placed on creating a balance between the need for individualised treatment and service users' seemingly paradoxical desire for consistency (also mentioned within study 3). It should be acknowledged that consistency is necessary to a degree; however, it is unrealistic to expect every aspect of meals to remain constant throughout an individual's experience of in-patient care. It is suggested that person-centred therapies and individual mealtime-related goals can be combined with consistency of practice (through standardised training) to facilitate this balance. Indeed, managing service users without some degree of inconsistency would be likely to create unnatural expectations and result in individuals being less than prepared for discharge. Instead the flexibility necessary should be emphasised as being required in order to encourage the responsibility and independence of service users. It is suggested that creating this balance could address both needs in a way which builds service users' acceptance of inevitable inconsistency along with providing them with an element of control.

Lastly, following evidence that states that non-eating observers can inhibit eating (Herman et al., 2003) and reports from service users that seeing staff eat was helpful at mealtimes (study 3), it is suggested that staff eat alongside service users during mealtimes. It is noted that within the interviews (study 2), some staff experienced feeling uncomfortable when eating alongside service users. However, rather than personal

barriers such as these discouraging staff from eating, it is suggested that mealtime-specific training pre-empts this and equips staff to overcome such feelings.

9.6.1.3 *Post-meals*

Within the interviews in study two and three, staff and service users highlighted areas of the mealtime protocol which they would have liked to have been able to alter. It would appear important that units provide a space in which individuals are able to bring suggestions for change regarding aspects of the mealtime service delivery. For example, staff could be asked for suggestions within their individual supervision sessions, or service users could leave comments in a feedback book. Alternatively a group discussion could be facilitated wherein both staff and service users are able to feed in their grievances, comments and ideas. It is suggested that this would increase both service users' and staff members' feelings of involvement, and thus, as others have shown (e.g., Vandereycken & Vansteenkiste, 2009), increase their satisfaction with treatment. Another beneficial way in which to improve mealtime protocol could be to create links between different eating disorders units and allow staff to visit and observe mealtimes. This would enable staff to experience alternative ways of implementing meals and may lead to discussion within their own unit as to possible alterations.

It is also suggested that personal reflection of staff members' experiences of mealtimes are addressed within individual supervision. It is especially important that newer members of staff, for whom the interviews in Chapter four suggested may experience more negativity, are given the space to debrief around mealtimes. Special consideration should be taken for those non-permanent members of staff who may not have regular supervision, as is likely to be common practice for other members of the team. Therefore it is suggested that time is put aside to allow all members of staff to reflect on meals, and as mentioned previously, give each member the opportunity to give their feedback on the practices used.

Table 9.1: Key factors of successful implementation of mealtime care on eating disorders units

Pre-meal
Meal-time specific training for all staff
Sharing information relevant to mealtime during handover
Checklist available regarding duties of staff during meals
Incremental approach to mealtime supervision
Pre-meal relaxation strategies
During meals
Relaxed environments (i.e., positive ambience & suitable distractions)
Graded meal-related goal setting for service users
Firm limits regarding time constraints and food to be eaten
Targeted support (i.e., challenge eating disordered cognitions)
Staff eating alongside service users
Post-meal
Process through which staff and service users can feedback
Time given to personal reflection
Ongoing training sessions

9.7 Future research

Although this collection of studies provides an insight into mealtimes and enables recommendations to be made regarding the implementation of mealtimes support, there is still a vast amount of research which is suggested to be necessary. By returning to the previously proposed model of mealtime experience, the areas of future research can be identified for each component (see Figure 9.2).

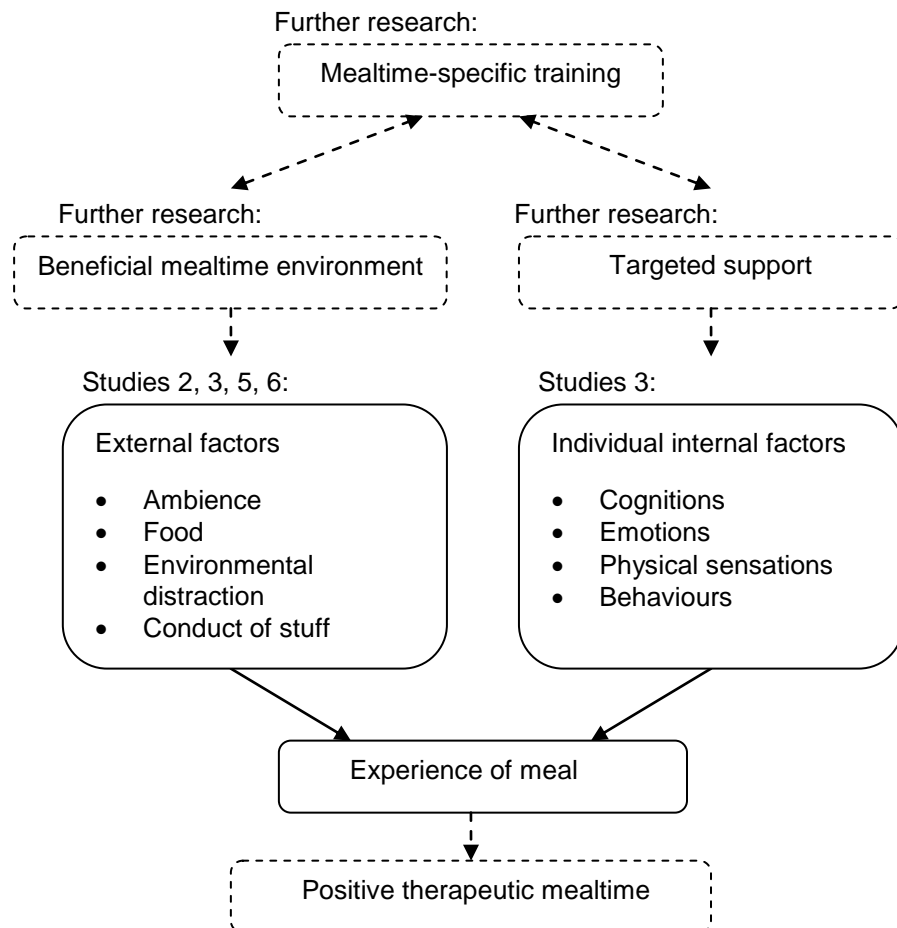


Figure: 9.2: Proposed model of mealtime experience for individuals with eating disorders with areas of future recommended research

First, further investigation is required to increase understanding regarding the relationship between different types of external mealtime factors and the mealtime experience. Research should consider how the ambience, food (quality and variety) and distractions can be manipulated in order to produce the most suitable environment for service users. For example, as proposed in Chapter eight, future studies are necessary to investigate different distraction stimuli within the dining environments of eating disorders units, and how these are associated with mealtime satisfaction. Additionally, service users in study three identified that the mealtime experience could differ according to whether or not staff ate alongside the service users. Ideally carefully controlled experiments would be set up in order to study the significance of staff eating alongside service users. Furthermore, the presence of non-nursing staff was mentioned by service users as being

capable of changing the atmosphere of the dining room. It appears important that research considers the effect of authority figures, such as therapists and doctors, alongside individuals which service users may not know as well, such as student nurses or new bank staff.

Second, the internal experiences of those with eating disorders, and how these are therapeutically managed within the dining room require future exploration. It is suggested that therapeutic interventions should target whichever of the areas (cognitive, behavioural, physical or emotional) are key for the recovery of each individual. Additionally, the application of such strategies must be considered alongside the environmental factors. For instance, it is important that staff are aware, and have an evidence base, regarding the types of distraction they should use alongside the targeted therapeutic strategies which they implement.

Lastly, as mentioned previously, it is suggested that the mealtime training package is developed and subsequently trialled within eating disorders units. This would incorporate the findings of future studies in regards to the two areas mentioned above, along with ensuring knowledge is shared between staff and confidence is raised in their ability to care during mealtimes.

9.8 Summary

This thesis has begun to explore the complex area of mealtimes on eating disorders units. The presented collection of studies suggests that distraction and other factors connected to the environment and the care delivered at mealtimes are capable of influencing both service users' and staff behaviour and experience of meals. These are important findings within an area which previously has received little attention.

Although empirical advances have been made within this thesis, more research is required in order to be assured that practices used during mealtimes are evidence-based and person-centred. It is the hope of the author of this thesis that this line of study will continue and work towards improving the situation for those affected by eating disorders.

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APPENDICES

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APPENDIX A: INFORMATION SHEET AND CONSENT SHEET EXAMPLE



Loughborough University
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I.D number.....

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DECLARATION OF INFORMED CONSENT

Please read the following carefully. Initial each box and sign at the bottom to show you have read and understood what is expected of you.

I hereby give my consent to participate in the mealtime study.
I confirm that:

Please Initial Boxes

- ☐ I have been informed of, and understand, the general purpose of the study.
- ☐ I have been informed that my participation in the study will involve taking part in four meals, three of which will involve listening to personal music players. I acknowledge that I will be asked to record my heart rate using the watch provided and to complete some mood rating scales at each meal. Furthermore, I have been made aware that my responses will be anonymous and kept confidential.
- ☐ I have been informed that the researchers will answer any questions that I may have regarding the procedures of the study.
- ☐ I understand that I am free to withdraw from this study at any time without giving any reason, and this will not affect any care that I receive now, or in the future.

Name (please print) _____

Signature _____

Date

I.D Number.....



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Centre for Research into Eating Disorders

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PARTICIPANT INFORMATION SHEET

Mealtime Experience Study

You are invited to take part in research looking at your experiences of mealtimes. Before you decide if you would like to take part, it is important to understand why the research is being carried out and what will be expected of you. Please read the following information carefully and either contact the researchers or ask your named nurse if there is anything that is not clear to you or if you require further information.

What is the purpose of the study?

The purpose of the study is to explore links between the eating environment and individuals' experience of mealtimes. This will aid further research into this area, including the development of possible interventions.

Why have I been chosen?

The study aims to look at people who have an eating disorder and are provided with meals as part of their treatments and have been receiving these meals for at least a month. You fulfil these criteria.

Do I have to take part?

Participation is entirely voluntary. It is completely your decision if you would like to take part. If part way through the study you wish to withdraw, you can do so without giving any explanation.

What will happen if I take part?

After reading this information sheet, you will be given a week to decide if you would like to take part. If you would like to participate, please can you sign the consent form and hand it back to your named nurse.

A researcher will be present for four meals over a period of four weeks. For each meal, you will be provided with a heart rate watch and some mood rating scales. You will be asked to record your mood using the rating scales and to press a button on the watch before and after the meal (you will not be able to see the heart rate as the watch face will be covered).

For three of the meals you will be provided with a personal music player to listen to during your meal. This will have either a piece of music on or a story to listen to. If at any point in the study you wish to take out the earpieces to talk and/or gain support from staff you are free to do so. If you feel able, after speaking to staff you can resume listening to the personal music player.

You are free at any stage to ask the researcher any questions that you might have about the study.

What are the potential advantages of taking part?

It is hoped that this study will have positive implications for the care and treatment of people with eating disorders. Improving our understanding about the implications of different eating environments may lead to development of interventions or alterations of treatment protocol.

What are the potential disadvantages of taking part?

Mealtimes may be anxious times for you, so you will not be forced to continue with the study if you do not wish to. You can stop the personal music players at any point.

Confidentiality & results of the study

This research will be submitted to the School of Sport, Health and Exercise Sciences as part of a PhD thesis. All information you provide will remain anonymous and strictly confidential, in line with the Data Protection Act. If you wish to receive details of the outcomes of the study please contact the researcher, Stacey Long via email.

Withdrawal from the study

Participation in this study is entirely your decision and you are able to withdraw from the study at any point without giving reason. Should you decide to withdraw, your results will be removed from the dataset and all records of your participation will be destroyed. Withdrawal will not affect the standard of care you receive now or in the future.

Who has reviewed the study?

This study has received approval from an NHS Ethical Advisory Board and Loughborough University Ethical Advisory Committee.

Thank you for taking the time to read this information sheet. If you would like to participate, please complete the attached consent sheet and give to your named nurse. **Please keep this Information Sheet for your records.**

If you have any queries please feel free to contact one of the researchers on the contact details provided below.

Principle Researcher:

Stacey Long

S.long@lboro.ac.uk

Tel: 01509 223048

Academic Research Supervisor:

Dr Caroline Meyer

C.Meyer@lboro.ac.uk

Tel: 01509 223 032

If you have any complaints about the conduct of this study you can contact;

Chief Operating Officer

Will Spinks

S.W.Spinks@lboro.ac.uk

Tel: 01509 22223

Loughborough University, Loughborough, Leicestershire, LE11 3TU,

APPENDIX B: EATING DISORDER INVENTORY-2 (EDI-2: GARNER, 1991)

The following items ask about your attitudes, feelings and behaviour. Some of the items relate to food or eating. Other items ask about your feelings about yourself.

For each item, decide if the item is true about you ALWAYS (A), USUALLY (U), OFTEN (O), SOMETIMES (S), RARELY (R), or NEVER (N). Circle the letter that corresponds to your rating. For example, if your rating for an item is OFTEN, you would circle the (O) for that item. Respond to all of the items, making sure that you circle the letter for the rating that is true about you. If you need to change an answer, make an "X" through the incorrect letter and then circle the correct one.

- | | |
|---|-------------|
| 1. I eat sweets and carbohydrates without feeling nervous. | A U O S R N |
| 2. I think that my stomach is too big. | A U O S R N |
| 3. I eat when I am upset. | A U O S R N |
| 4. I stuff myself with food. | A U O S R N |
| 5. I think about dieting. | A U O S R N |
| 6. I think that my thighs are too large. | A U O S R N |
| 7. I feel extremely guilty after overeating. | A U O S R N |
| 8. I think that my stomach is just the right size. | A U O S R N |
| 9. I am terrified of gaining weight. | A U O S R N |
| 10. I feel satisfied with the shape of my body. | A U O S R N |
| 11. I exaggerate or magnify the importance of weight. | A U O S R N |
| 12. I have gone on eating binges where I have felt that I could not stop. | A U O S R N |
| 13. I like the shape of my buttocks. | A U O S R N |
| 14. I am preoccupied with the desire to be thinner. | A U O S R N |

15. I think about bingeing (overeating).	A U O S R N
16. I think my hips are too big.	A U O S R N
17. I eat moderately in front of others and stuff myself when they're gone.	A U O S R N
18. If I gain a pound, I worry that I will keep gaining.	A U O S R N
19. I have the thought of trying to vomit to lose weight.	A U O S R N
20. I think that my thighs are just the right size.	A U O S R N
21. I think my buttocks are too large.	A U O S R N
22. I eat or drink in secrecy.	A U O S R N
23. I think that my hips are just the right size.	A U O S R N

APPENDIX C: THE POSITIVE AND NEGATIVE AFFECT SCHEDULE

(PANAS: WATSON ET AL., 1988)

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then mark the appropriate answer in the space next to that word.

Indicate, using the corresponding number, to what extent you feel this way right now.

Use the following scale;

1 slightly or not at all

2 a little

3 moderately

4 quite a bit

5 extremely

Interested _____

Distressed _____

Excited _____

Upset _____

Strong _____

Guilty _____

Scared _____

Hostile _____

Enthusiastic _____

Proud _____

Irritable _____

Alert _____

Ashamed _____

Inspired _____

Nervous _____

Determined

Attentive

Jittery

Active

Afraid

APPENDIX D: STATE-TRAIT ANXIETY INVENTORY
(STAI-S: SPIELBERGER ET AL., 1970)

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not at all	Somewhat	Moderately so	Very much so
I feel calm	1	2	3	4
Secure	1	2	3	4
I am tense	1	2	3	4
I feel strained	1	2	3	4
I feel at ease	1	2	3	4
I feel upset	1	2	3	4
I am pretty worried over possible misfortunes	1	2	3	4
I feel satisfied	1	2	3	4
I feel frightened	1	2	3	4
I feel comfortable	1	2	3	4
I feel self confident	1	2	3	4
I feel nervous	1	2	3	4
I am jittery	1	2	3	4
I feel indecisive	1	2	3	4
I am relaxed	1	2	3	4

I feel confident	1	2	3	4
I am worried	1	2	3	4
I feel confused	1	2	3	4
I feel steady	1	2	3	4
I feel pleasant	1	2	3	4

APPENDIX E: REFLECTIONS OF THE AUTHOR

Malterud (2001) states reflexivity begins by, “...*identifying preconceptions brought into the project by the researcher, representing previous personal and professional experiences, prestudy beliefs about how things are and what is to be investigated, motivation and qualifications for exploration of the field.*” (p. 484). She goes on to state that there is an importance to, not only acknowledge these factors, but to share them within the publications of findings. Vitally, it has been suggested that, to write reflexively in this way can enhance the credibility and rigour of the research process (DeSouza, 2004).

Following this line of thinking, this reflective piece aims to provide an honest and open account of the researcher who wrote the current PhD thesis and conducted the studies within it. Within this piece, two areas will be addressed. First, the background of the author, Stacey Long, will be discussed. This will include her previous work experience, epistemological and ontological beliefs, motivations to work within the area of eating disorders treatment provisions and personal interests, which coloured the design, implementation and analysis of the studies conducted in this research. The aim of such a self-reflection is to locate the author personally within the research area. Second, the interactions which occurred between the author, as a researcher, and those who participated within the studies of this thesis will be explored. In doing so, the author aims to acknowledge her position as a participant in the ‘dynamic interrelationship of the research process (p. 1192)’, as described by Ryan and Golden (2006), and recognise how the researcher's standpoint shaped the interactions with participants.

Personal background of author

During my undergraduate degree at the University of Birmingham I worked as a nursing assistant at the Queen Elizabeth Psychiatric Hospital (QEPH), becoming a regular on the eating disorder ward. After graduating I continued to work at the QEPH working as a Psychology Assistant within the eating disorders department, offering motivational

interviewing and psycho-education to a case load of out-patients. From here, I gained a second post as an Assistant Psychologist within a school for children with learning difficulties and mental health concerns. It was during this post that I heard of the opportunity to undertake a Ph.D., and returned to the study of eating disorders.

My interest in eating disorders began in my school years, throughout which a number of my friends suffered varying degrees of eating disorders and disturbances. The desire to work within this area can be traced to the frustrations faced when trying to come to terms personally with my friends' battles, attempting to work with them to overcome their hardships, and feeling faced with an adult world that appeared powerless and insensitive. As I progressed along my path, both academically and within employment, my interests in the development, maintenance and treatment of eating disorders became influenced by critical, feminist and community psychology writing and theory (e.g., Burns, 2004; Orford, 1992; Piran, 2001; Richards, Peel, Smith & Owen, 2001).

It seems clear that eating disorders are multifaceted, with different casual and maintenance factors for different people. Furthermore, I believe eating difficulties to present themselves on a spectrum. This continuum includes the traditionally accepted clinical diagnoses, the vast number of cases of EDNOS and worryingly normalised practices such as dieting, low body self-esteem and hypersensitive awareness of weight and shape. Additionally I try and understand this continuum within a context of a 'sick society', in recognition of such norms as the thin ideal. Accordingly, I struggle with the use of labelling (some) individuals within a medical model. This, at the very least, fails to capture the complexities of the issues, and at worse marginalises, stigmatises and controls individuals in a form of neo-liberal comodification. Lest we forget that there is profit to be made by global pharmaceutical companies and beauty related industries. Instead I favour alternative models, such as the bioecological model, which view eating behaviour within the political, social and cultural sphere that they exist within. Specifically, I remain motivated first by how the capitalist, patriarchal systems that we live in socialise individuals into holding particular views of our bodies and of ourselves, isolating us from

others and our place within the wider context of life (see Hesse-Biber, Leavy, Quinn & Zoino, 2006). Second, how the corporate takeover of our food chain has disconnected us from the food that is grown, consumed and the nutrients it provides (see Petrini, McCuaig & Waters, 2003; Tulip & Michaels, 2004).

I believe community psychology is able to change the way in which issues, such as eating disorders, are conceptualised. Such radical psychological approaches can provide a vital 'epistemological break' from the norm (see Kagan & Burton, 2001). Thus I believe in the need for individualised treatment, which does not just look toward the traditional medical model for 'cures', but seeks to empower individuals rather than attaching labels to them. Change must happen in society and radical psychology can be part of that. I believe psychologists must challenge the status quo both within the discipline and within society, whilst forming alliances with other disciplines to better suit the needs of individuals and build a healthier environment for people to live within.

Reflections on conducting research

Whilst conducting the studies within this thesis, I came into contact with both service users and staff of eating disorders units, and university student participants. On meeting potential participants for the first time, I was aware of having to establish a rapport with individuals so that an atmosphere of trust could be developed to facilitate the interviews or study sessions. In doing this, it was important to acknowledge my position as a researcher, and the power dynamics this may have created especially for individuals receiving care on the units. It was imperative that interactions with all participants were kept friendly and I attempted to come over as confident and approachable.

When working with service users, on occasions I was directly asked about my background and reasons for interest in the area of study. In these cases, I was honest in my answering, responding that my interest had arisen following experiences when providing care to individuals on eating disorders units whilst working as a nursing assistant. Although I gave my background of being a nursing assistant, I was careful not to talk of my personal view of mealtime care, being aware of the potential observer effects

this may have caused. Additionally, I was aware there was a difference in working alongside nursing teams I had previously worked with (as a nursing assistant), compared to when working with new staff. Around staff who knew me as a nursing assistant, there was a more informal relationship which worked to soften the dynamics of having an external researcher coming onto the unit. I believe this was a useful in promoting trust and ease of working during the studies.

Throughout the studies of this thesis, my holistic goal has always been to produce work which is clinically applicable within eating disorders in-patient care. Although this remained my motivation, this was also my greatest cause for anxiety! Within such a short period of study, such a complex area as mealtime care often seemed overwhelming. However, as a body of work, it is hoped that the thesis was successful in shedding light on issues connected to mealtime implementation and will provoke future study from the field.

APPENDIX F: MEALTIME SURVEY



Loughborough University
Centre for Research into Eating Disorders

Mealtimes on Eating Disorder Units

Thank you for agreeing to complete this survey.

The aim is to gain information regarding service provisions at mealtimes within inpatient and day patient eating disorder units. Your input is greatly appreciated.

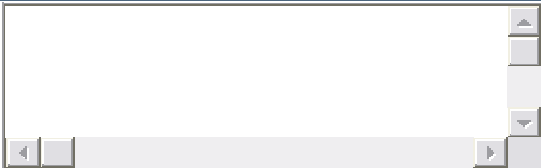
This information is being collected as part of a PhD within Loughborough University Centre for Research into Eating Disorders (LUCRED). Research is being conducted by Stacey Long under the supervision of Dr Caroline Meyer and Dr Deborah Wallis at the University of Loughborough, clinical supervision given by Dr. Newman Leung, Consultant Clinical Psychologist at the Queen Elizabeth's Psychiatric Hospital, Birmingham.




Unit name (optional):

Postal address (optional):

E-mail address (optional):

Is your service...	Independent, eating disorders only?	Independent, mixed diagnoses?	NHS, eating disorder only?	NHS, mixed diagnoses?

What age groups do you provide for?	<input type="checkbox"/> a. Adult only	<input type="checkbox"/> b. Adult with adolescents and/or children	<input type="checkbox"/> c. Adolescents and/or children only
1. Which services do you provide? (tick all that apply)	<input type="checkbox"/> a. Day patient service	<input type="checkbox"/> b. Inpatient service	<input type="checkbox"/> c. Outpatient service
2. Which diagnoses do your service users present? (tick all that apply)	<input type="checkbox"/> a. Anorexia Nervosa – restricting type <input type="checkbox"/> b. Anorexia Nervosa – binge eating / purging type	<input type="checkbox"/> c. Bulimia Nervosa – purging type <input type="checkbox"/> d. Bulimia Nervosa – non-purging type	<input type="checkbox"/> e. Binge Eating Disorder <input type="checkbox"/> f. Eating Disorder Not Otherwise Specified
3. How many service users use your unit?	a. Day patient service <input type="text"/>	b. Inpatient service <input type="text"/>	c. Outpatient service <input type="text"/>
4. How many staff are on each shift?	<input type="text"/>		
5. Please give details of the physical set up of your dining room (e.g. How many tables? Any pictures			

22a. If you do, please give brief details.				
23. Do you offer any activities in the hour following mealtimes?	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
23a. If you do, please give brief details.				
24. Is there a designated 'sitting time' after meals?	<input type="radio"/> Yes	<input type="radio"/> No		
24a. If yes, please give details.				

Thank you for taking the time to complete this survey.

APPENDIX G: SEMI-STRUCTURED INTERVIEW SCHEDULE: STAFF INTERVIEWS

Location

Prompt questions:

"Why is the set up of the dining room as it is?"

"Do you like the layout? What's good / bad about it?"

Activities

Prompt questions:

"What activities do you associate with mealtimes?"

"Do you provide any activities before/after mealtimes?"

Timing

Prompt questions:

"Are there time restrictions for meal completion?"

"What other timings are associated with mealtimes? What is your opinion of these?"

Social factors

Prompt questions:

"What's your experience of the people who are present at mealtimes?"

"What about the other service users / staff?"

Food and drink

Prompt questions:

"What's your experience of the cooking here?"

"Do you have any comments of how the food is prepared?"

"Do you eat with service users / eat the same as service users?"

Staff role

Prompt questions:

"How do you see your role during mealtimes?"

"How confident do you feel with your role?"

Service users

Prompt questions:

"What do you think service users personally experience from mealtimes?"

APPENDIX H: SEMI-STRUCTURED INTERVIEW SCHEDULE:

SERVICE USER INTERVIEWS

Location

Prompt questions:

“Do you like the layout of the dining room?”

“What’s good / bad about it?”

Recurrence

Prompt questions:

“Are there routines associated with mealtimes?”

“What can happen to change that routine?”

Time

Prompt questions:

“What time frames do you associate with mealtimes?”

“How are time restrictions imposed?”

Activities

Prompt questions:

“What activities do you associate with mealtimes?”

“Do you take part in any activities before/after mealtimes?”

“Are they an important part of mealtimes?”

Social setting

Prompt questions:

“What’s your experience of the people who are present at mealtimes?”

“What about the other service users / staff?”

Food and drink

Prompt questions:

"What's your experience of the cooking here?"

"Do you have any comments of how the food is prepared?"

"Are you able to shop/prepare food eaten at meals?"

Mental processes

Prompt questions:

"How do you feel before a meal?"

"What do you personally experience from mealtimes?"

"Do you set any goals?"

"What goes through your head during mealtimes?"

"How do you feel after you've eaten a meal?"

APPENDIX I: MEAL DIARY

Example MEALTIME DIARY		Location meal was eaten Please tick one	Activities undertaken whilst eating Please tick all that apply	Mood Please circle the number which best correlates with your mood 1 = Calm 7 = Anxious	
Breakfast start time finish time Number of Male friends..... Male family members..... Male other..... Female friends..... Female family members..... Female other..... Percentage of meal eaten 0% 50% 100%	Kitchen <input type="checkbox"/> Dining room <input type="checkbox"/> Bedroom <input type="checkbox"/> Restaurant <input type="checkbox"/> Other (please state) <input type="checkbox"/>	Music yes <input type="checkbox"/> no <input type="checkbox"/> TV yes <input type="checkbox"/> no <input type="checkbox"/> Conversation yes <input type="checkbox"/> no <input type="checkbox"/> Other (please state)	Immediately before your meal 1 2 3 4 5 6 7	Immediately after finishing your meal 1 2 3 4 5 6 7	
Lunch start time finish time Number of Male friends..... Male family members..... Male other..... Female friends..... Female family members..... Female other..... Percentage of meal eaten 0% 50% 100%	Kitchen <input type="checkbox"/> Dining room <input type="checkbox"/> Bedroom <input type="checkbox"/> Restaurant <input type="checkbox"/> Other (please state) <input type="checkbox"/>	Music yes <input type="checkbox"/> no <input type="checkbox"/> TV yes <input type="checkbox"/> no <input type="checkbox"/> Conversation yes <input type="checkbox"/> no <input type="checkbox"/> Other	Immediately before your meal 1 2 3 4 5 6 7	Immediately after finishing your meal 1 2 3 4 5 6 7	
Evening meal start time finish time Number of Male friends..... Male family members..... Male other..... Female friends..... Female family members..... Female other..... Percentage of meal eaten 0% 50% 100%	Kitchen <input type="checkbox"/> Dining room <input type="checkbox"/> Bedroom <input type="checkbox"/> Restaurant <input type="checkbox"/> Other (please state) <input type="checkbox"/>	Music yes <input type="checkbox"/> no <input type="checkbox"/> TV yes <input type="checkbox"/> no <input type="checkbox"/> Conversation yes <input type="checkbox"/> no <input type="checkbox"/> Other	Immediately before your meal 1 2 3 4 5 6 7	Immediately after finishing your meal 1 2 3 4 5 6 7	

APPENDIX J: PROPOSED MEALTIME TRAINING PACKAGE

Session 1 – Practical tools for encouraging eating and dealing with challenging behaviours

Aims

- To share and evaluate techniques in a safe, supportive space
- To build confidence assessing service user needs and applying suitable tool with the goal of providing individualised treatment

Rationale

- There are a range of ways to offer support during meals and it is beneficial to share skills and practicing techniques

Preparation

- Pre-made examples of possible dining room situations e.g.
 - Conflict: Service users believing they have been given the wrong meal / Upset: Service user beginning to cry whilst eating their meal/ Refusal: Service users refusing to complete their meal/ Fear: Service user becoming anxious when confronted with a fear food / Hiding food: Service user trying to put their food up their sleeve / Staling: Service user appears unable to begin their meal / Slow eating: Service user is eaten one pea at a time off of their plate / Excessive cutting: Service user is cutting their toast into pieces

Recommended exercise 1 – ‘Mealtime role play’

- People to shout out techniques to use when supporting someone in the dining room (Note for facilitator: i.e. distraction, conversation, rationalisation, relaxation, encouragement, motivational techniques). These are all written onto a ‘tool’ sheet (4 mins)

- Group splits into smaller groups of three, and given three example situations. Individuals to take it in turns to act as the 'service user', 'staff member' and objective observer. Instructions given to role play each example by choosing one of the 'tools' to use (4 mins role play, 3 mins discussion after each, total 21 mins)
- Individuals from groups merge with others to form groups of three. Discuss implementation of tools, which worked best, which were hardest etc (5 mins)

Session 2 – Creating positive mealtimes

Aim

- To facilitate discussion about developing a positive mealtime environment
- To provide a relaxation tool to decrease anxiety for staff and service users

Rationale

- Service users desire positive, supportive, enjoyable mealtimes
- Staff and service users recognised the need to normalise mealtimes on the unit

Recommended exercise 2a – ‘How do you eat yours?’

- Each participant writes down on post-it notes their answers to the follow questions;
 - Where do you most commonly get your food from?
 - What is your most enjoyable way to prepare food?
 - What has been the most enjoyable setting you’ve eaten in?
 - Who would you most like to eat with, if anyone? (6 mins)
- These are posted up on a wall in corresponding groups. The facilitator encourages staff to look over all answers, then leads a discussion based on each question in turn. Questions for discussion: How do they differ from what happens on the units? Could any of the pieces contain positive actions for service users to take? Could anything on the unit be altered to make meals more positive or normalised? (13 mins)

Recommended exercise 2b – ‘Relaxation training’

- Participants are asked to take up a comfortable position and close their eyes (1 min)
- The facilitator encourages participants to take five deep breaths and then tense each muscle group in turn for 5/6 seconds each (feet, shoulders and back should be held for only 5 seconds to avoid cramping). Muscle groups are to be tensed in the following order; 1) Dominant hand and forearm, 2) Dominant biceps, 3) Non-dominant hand and forearm, 4) Non-dominant biceps, 5) Forehead, 6) Upper cheeks and nose, 7) Lower cheeks and jaw, 8) Neck and throat, 9) Chest, shoulders, and upper back, 10) Abdominal or stomach region, 11) Dominant thigh, 12) Dominant calf, 13) Dominant foot, 14) Non-dominant thigh, 15) Non-dominant calf, 16) Non-dominant foot (4 mins)
- After each muscle group is relaxed, the facilitator guides participants to focus on the relaxed area of the body. (4 mins)
- When each muscle group has been tensed, participants are instructed to count backwards from four, progressively moving their legs and feet (4), arms and hands (3), head and neck (2), open eyes (1). (2 mins)

Session 3: Exploring service users' perspective

Aims

- Staff to gain understanding and reflect upon the experiences of service users during mealtime

Rationale

- Service users were found to desire increased understanding and recognition of the areas they perceived to be connected to their mealtime experience
- Negative attitudes held by staff towards service users have been seen to decrease with increased understanding of eating disorders

Recommended exercise 3 – 'Service users' perspective carousel'

- Prior to this exercise, a corresponding session is held with patients (see session 3 unit exercise)
- Four stations are set up with different points in the room. Each contains a piece of flipchart labelled, 'cognitive', 'emotional', 'physical' and 'behavioural'
- The group is split into four and each group told to start at one of the stations
- Instructions are given to write on the flipchart how they think the service users experience meals in relation to the word given. Groups then rotate and add to the different stations (first station 3 mins, second / third station 2 mins, forth station 1 min, total 8 mins)
- The group reforms and individual service users' charts are distributed. Participants read the example they have been given and different coloured pens are used to add to the flipchart any information which the original carousel did not pick up (5 mins)

- Carousel is resumed. This time, staff are encouraged to write on the sheets at the four stations how each of difficulty might be observed in the dining room (first station 3 mins, second / third station 2 mins, forth station 1 min, total 8 mins)
- Participants given a chance to discuss or walk round the four stations again (4 mins)
- The four areas of potential difficulties could then be converted into a document for use by staff on the unit

Session 4 - Empowering patients

Aims of session

- To encourage service users to take ownership of mealtimes

Rationale

- Service users desired to be actively involved in mealtimes and to be given responsibly
- Both staff and service users need to feel they have an amount of control. Exercise to address getting this balance so that service users can feel engaged with mealtimes

Recommended exercise 4 - 'Positive solutions brainstorm'

- The facilitator describes the benefits of empowering service users to take responsibility and encouraging ownership of mealtimes. This is contrasted against the findings of the service user interviews wherein mealtimes were described as battlegrounds and as disengaging (5 mins)
- The group is split into two. One group is asked to consider mealtimes on the units in light of the description of battlegrounds, the other focusing on disengaging examples within mealtimes. The facilitator can prompt groups to talk about specific examples the descriptions may bring to mind and service users they feel may view mealtimes in this way (10 mins)
- Two individuals from each group are then asked to join the other group and feedback key points. (3 mins) They remain with that group and a second discussion is conducted wherein staff members consider ways in which battleground or disengagement factors can be addressed through encouraging service users to engage with meals in a positive way. Note for facilitator – possible ideas may include asking service

users when they would like to address emotions experienced during mealtimes, encouraging service users to develop a media project to explain their experience of meals, asking service users for their input as to how the dining room should be organised or decorated, and offering service users more opportunities to self-serve or cook (10 mins)

- Speaker from each group reports back to whole group (7 mins)

Session 5 – Personal reflection of role during mealtimes

Aims

- Staff to be encouraged to reflect on their own personal experiences of mealtimes and give recognition to any difficulties faced by staff
- To explore ways to lessen any negative connotations of role

Rationale

- The role provided by staff during mealtimes have been seen to be associated with personal difficulties and negative attitudes

Recommended exercise 5 – ‘The box’

- Participants are encouraged to reflect on any strong emotions that they are experiencing or have experienced during meals. This could include any concerns or worries they might hold connected to their implementation of mealtimes, the support they give or the personal feelings associated with this time. It should be stressed that if individuals feel positively regarding meals, that it would be likely to help others if they could reflect on if this had always been the case. Individuals should write anonymously, and then put their feedback into the box (3 mins)
- The group is split into pairs and the pieces shared out between them. Each pair talks about why these feelings might arise. The facilitator is to encourage pairs to consider how feelings relate to the eating disorder of the service users rather than on the behaviour of individuals (10 mins)

Session 6 – Teamwork at mealtimes

Aim

- To recognise the importance of teamwork before, during and after the meals

Rationale

- Staff need to feel supported by others when dealing with difficult situations
- Team cohesion plays an important part in developing a supportive environment

Recommended exercise 6 – 'Team...(unit name)'

- Group splits into two smaller groups, each is given a piece of paper. One piece states, "I get most support from other team members when..?", the other says, "I think we could do better at supporting each other as a team by..?" The facilitator asks each group to bullet point their discussions (10 mins)
- Each group gives feedback on their questions (5 mins)
- After hearing what is useful, and what is wanted, the whole group splits into groups of three, each group designs a poster for new staff of key points of why teamwork is important during mealtimes (13 mins)

Session 7 – Reflection

Aim

- For participants to reflect and feedback on the training

Rationale

- Personally reflecting on their input and what they will take away from the sessions provide reference document for them to refer back to at a later date
- Spending time reflective on the mealtime training can be useful to adjust future session

Exercise 7a – 'Self reflection'

- The facilitator should make titles of training sessions and corresponding exercises accessible for people to draw reference from. Participants given time to reflect on the training sessions. Prompted to write to themselves as a reminder of things they have learnt or may want to implement (5 mins)

Exercise 7b – 'Feedback questionnaire'

- Participants asked to fill in questionnaire. Focuses on the pros and cons of training and areas of improvement (4 mins)