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Psychology and Health

POSTPRINT

Making sense of being at 'high risk' of coronary heart disease within primary prevention.

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Current NHS policy advocates screening to identify individuals at 'high risk' of cardio-vascular disease (CHD) in primary care. This paper utilizes the work of Radley to explore how 'high risk' of CHD patients make sense of their new risk status. Results are presented here from a nested qualitative study within a quantitative randomized trial of a CHD risk intervention in primary care. 'Discovery' interviews were conducted with 'high risk' participants (n=38, mean age=55) two weeks after intervention and thematically analyzed. In response to perceived threat, many participants sought to both 'minimize' and 'normalize' their risk status. They also reported intentions to act, particularly concerning dietary change and exercise, although less so for smoking amongst the lower SES participants. Such perceptions and intentions were contextualized within the life-course of later middle-age, so that both being at risk, and being treated for risk, were normalized as part of growing older. Social position, such as gender and SES, was also implicated. CHD risk interventions should be context-sensitive to the life-course and social position of those who find themselves at 'high risk' of CHD in later middle-age.

Keywords*:* coronary heart disease, risk, risk perception, intervention, primary prevention, life-course

Introduction

In the UK, one in five men and one in six women will die of coronary heart disease (CHD) and it remains the most common cause of death (Allender, Peto, Scarborough, Boxer, & Rayner, 2007). Identifying and treating patients at high risk of CHD in primary care is a key component of the UK National Services Framework (Department of Health, 1999, 2000) and international guidelines for CHD prevention (Pearson et al., 2002). However, previous intervention studies have shown that patients often find it difficult to change their lifestyles (Imperial Cancer Research Fund OXCHECK study, 1995) or only respond to intensive (and therefore costly) intervention (Steptoe et al., 1999). This paper presents qualitative findings exploring patients' perspectives during a CHD risk intervention to understand why this might be the case.

Psycho-social approaches to 'being at risk'

One of the most significant shifts in modern medicine has been from a 'reactive' to a 'preventive' model of health-care (Radley, 1994). However, it is based on the pre-supposition that patients will actively respond to their higher risk status by changing their lifestyles and medication (Novas & Rose, 2000; Petersen & Lupton, 1996).

At the psycho-social level, Weinstein has argued that people assess their risk incorrectly by showing a consistent 'optimistic bias' or 'illusion of invulnerability' (Weinstein, 1984). For example, people rank their probability of suffering a wide number of diseases as significantly lower in comparison with their peers (Weinstein, 1984). It is argued that this is problematic, for if people do not recognize their personal vulnerability,

they are unlikely to be motivated to reduce it. Furthermore, as a review by van der Plight (van der Plight, 1998) concludes, although perceived vulnerability is a key motivational component of many health behaviour models (e.g. Health Belief Model, Protection Motivation theory), it only modestly predicts behaviour change. Other research, however, has suggested that perceived vulnerability may be more objectively related to an individual's personal knowledge than had previously been supposed (Renner, Knoll, & Schwarzer, 2000). For example, Milam and colleagues found that adolescent smokers felt more vulnerable than non-smokers to both smoking and non-smoking related health risks. Furthermore, the smokers who felt more vulnerable were those who were more addicted, smoked more, and had tried to quit more in the past (Milam, Sussman, Ritt-Olson, & Dent, 2000). They argue this is evidence for an 'experience' model where perceptions of vulnerability reflect knowledge of one's preventive actions rather than being understood solely as a precursor to preventive behaviour (see Gerrard, Gibbons, & Bushman, 1996). It also adds support to the hypothesis that perceptions of invulnerability do not necessarily inhibit preventive action or intention to change (Taylor & Brown, 1988).

The construction of lay understanding of health risks in terms of heuristic biases and irrational decision-making has been critiqued (Joffe, 2003). Firstly, it devalues lay knowledge of risk as 'subjective' and 'deficient' in comparison with 'objective' expert knowledge. Secondly, the methodology of assessing risk estimates through probabilistic scales results in a decontextualised understanding of how people make sense of risk. It ignores, for example, the real-life comparators that people use, or the social contexts in which they make them. Public health messages can only be understood through examining the social contexts in which people inhabit, rather than assuming that they are

rational actors who will always minimize their exposure to health risks (Alaszewski, 2005). It is also important to note that social contexts are multiple. They encompass several dimensions, including the symbolic (such as socio-cultural beliefs about a group), the organizational (such as governmental, research or therapeutic communities) and the material-political (such as poverty) (Campbell, Foulis, Maimane, & Sibiya, 2005). To understand the psycho-social processes involved in making sense of health risk, one must consider multiple, interacting contexts.

There is also a potent identity dimension to being 'at risk'. Those at risk occupy a liminal identity between the 'healthy' and the 'ill' (Crawford, 1994; Scott, Prior, Wood, & Gray, 2005). In a health-care system still primarily oriented around treating disease, their role and self-definition are unclear. Being identified as 'at risk' also places one in a position of self-responsibility, to be "entrepreneurial" and take action (Novas & Rose, 2000). Those who do not respond to the risk by changing their behaviour according to prevailing health messages may be judged or stigmatized (Crawford, 1994; Radley, 1994), the stigmatization of smokers being an obvious example (Farrimond & Joffe, 2006).

CHD as the archetypal 'preventive' disease

The case of CHD has come to exemplify the shift from 'reactive' to 'preventive' medicine for several reasons (Radley, 1994). Epidemiological cohort studies have identified numerous CHD risk factors and groups (e.g. blood pressure, cholesterol, BMI, family history, socio-economic status, ethnicity) which can be used to predict heart disease risk through manual or computer-based risk assessment software (Sheridan, Pignone, & Mulrow, 2003; Wood et al., 1998). The availability of this clinical technology

within general practice has made widespread CHD screening technically possible, though much debated (Toop & Richards, 2001).

The epidemiological discourse that identifies high risk individuals and groups is paralleled, according to Davison and colleagues, by a ‘lay epidemiology’ amongst ordinary people (Davison, Davey-Smith, & Frankel, 1991). They found that lay people have a multi-factorial conceptualization of the ‘coronary candidate’ based around three criteria; their physical appearance (overweight, unfit, red/flushed), their social world (hard labour, poorer area) and their personal characteristics (smoking, eating fatty diet, stressed). However, lay people also understood that there were exceptions to the rule, embodied in the ‘Uncle Norman’ who eats, drinks and makes merry but lives to a ripe old age, and the clean-living slim individual who has a sudden fatal heart attack. The notion of ‘coronary candidacy’ is also gendered; women who are ‘at risk’ of CHD or who have CHD are relatively ‘invisible’ within the population (Emslie, Hunt, & Watt, 2001b). Thus it is argued that simplistic health promotion messages concerning coronary candidacy don’t work. If lay people test these messages against their own lived experience and find them wanting, they simply dismiss the message.

These studies have identified lay beliefs about CHD candidacy amongst the general population. However, less research has considered the perceptions of those personally at high risk of CHD. Research indicates that patients who have pre-existing conditions, such as hypertension or diabetes (Frijling et al., 2004), or a family history of CHD (Montgomery, Erblich, DiLorenzo, & Bovbjerg, 2003) feel more personally vulnerable. On the other hand, Wiles has shown that patients who have a heart attack tend to have a sense of the randomness of CHD which diverges from ‘official’ accounts that

focus on modifiable risks (Wiles, 1998). Working within the heuristic biases framework, Frijling and colleagues found that patients at moderate to high cardiovascular risk due to diabetes tend to ‘incorrectly’ over-estimate their absolute risk over 10 years by more than 20% (Frijling et al., 2004). From within the same framework, Van Steenkiste and colleague argue that patients at risk of CHD showed ‘insufficient insight’ and ‘fragmentary’ knowledge and criticize patients for basing their risk perceptions on wrong comparators (the Uncle Norman of Davison’s work) and emotional thinking (van Steenkiste et al., 2004). However, this ‘deficit’ approach fails to consider how these ‘biases’ might make sense within the wider context of participants’ lives.

Taking a more contextual approach, Angus and colleagues conducted focus group research with primary and secondary care patients before they entered a CHD intervention programme (Angus et al., 2005). CHD was perceived as ‘sneaky’ as it can occur suddenly, even when one is feeling ‘well’. This led to a reliance on medical hermeneutics, such as cholesterol levels as a way of making this risk tangible. The relationship between the numbers and the physical state often remain mysterious to patients, particularly to lower SES groups who feel excluded from the discourse of specialized medical knowledge. However, few studies have qualitatively investigated how ‘high risk’ participants perceive their risk after assessment. It is important to explore such perceptions so that such interventions can be designed to resonate with lay thinking (Joffe, 2002). This is even more the case when such interventions form an integral (and costly) part of national primary care guidelines in the UK and elsewhere.

This paper utilizes the approach of Radley which encompasses several key factors (Radley, 1989, 1994, 1996). Firstly, Radley suggests that when confronted with the threat

of illness, people develop ‘coping strategies’ which are socially prescribed within common discourses (Radley, 1989). For example, patients after a coronary graft bypass commonly understand their surgery as having given them a ‘second chance’, and their recovery as an opportunity to remodel what it is to have a healthy body, for example, by taking up running (Radley, 1996). Secondly, Radley argues that ‘risky’ behaviour has to be understood within its social context (Radley, 1994). For example, ‘coronary-prone’ behaviour such as being ambitious, driven and prepared to push oneself physically and mentally to succeed may be encouraged in some contexts (e.g. Western workplaces) but discouraged in others (e.g. clinic treating stress). Thirdly, Radley emphasises that coping strategies are often symbolic in the face of a threatened identity. Thus, for example, the act of taking up jogging after a bypass is not merely a practical response to decrease risk, but a symbolic one whereby the participant embodies their ‘change’ of identity from very unwell to newly healthy (Radley, 1996). This paper uses Radley’s theoretical insights, many of which were developed in the context of patients with ongoing heart disease, to investigate how 38 participants who are at ‘high risk’ of CHD (but not currently ill) ‘make sense’ of their diagnosis within a primary prevention trial.

The research questions are as follows: How do the participants identified as ‘high risk’ of CHD ‘make sense’ of this information? How does it fit with their other understandings of themselves in relation to others and in the social contexts they inhabit? How do they explain their behaviour in the light of this identification?

Methods

Study design, participants and data collection

This qualitative study was nested within a controlled trial to investigate the added value of including CHD family history into CVD (cardiovascular disease) risk assessments (ADDFAM study). The quantitative trial was designed by NQ and the qualitative study by PS. Patients were recruited from twenty-four GP practices from Lincolnshire, Nottinghamshire and Devon and Cornwall. CVD risk was calculated using Joint British Societies (JBS2) risk calculator (British Cardiac Society et al., 2005). Half the practices also used a family history tool to assess family history, and where a positive history was found, their calculation was increased by 1.5 times (Qureshi et al., 2005). Patients received a letter with risk ranging from 'average' (below 10% absolute risk over the next ten years), 'slightly above average but not higher risk' (10-19%) and 'higher risk' (20% and above). The actual risk score was not included in the patient letter, but was included in the letter to the GP. 'High risk' patients were given a follow-up appointment with a health care professional to discuss medication/lifestyle. The study was given NHS ethical approval.

A sample of 49 participants identified as 'high risk' was invited for interview approximately two weeks after their follow-up consultation. Sampling followed a maximum variation approach, with respect to gender, occupational class, age, geographical location, ethnicity and family history status (Patton, 2002). The final response rate for the interviews was 38 out of 49, 77.5% of those asked. The characteristics of the sample are shown in Table 1[Insert Table One here].

Interviews were conducted by HF and PS and tape-recorded for transcription (n=38). Most of the interviews were conducted face-to-face at the homes of participants, or in one instance, at their place of work. Face-to-face interviews were preferred, but phone interviews were conducted if not convenient (e.g. for shift workers) (n=10). Interviews were conducted using an interview schedule based around the chronological story of their participation in the intervention, from their initial agreement to participate, through to behavioural and medication changes since their follow-up appointment. This format, a type of 'discovery interview', is increasingly used within the NHS to produce narratives exploring the impact of illness and care issues (Department of Health, 2003).

Interpretation

This paper presents the results of a latent thematic analysis, in line with the contention that thematic analysis constitutes a method in its own right (Braun & Clarke, 2006). Initially, all authors (HF, PS, NQ, PE) thematically analyzed a sub-set of six transcripts independently from each other to ensure rigour and to tap the perspectives of the different professionals (two social scientists and two GPs) involved in the study. The initial codes were compared, discussed and amalgamated by HF and PS into a thematic 'map' (Braun & Clarke, 2006) which was applied to all transcripts using NVIVO software. Radley's work on identifying coping strategies, social contexts, and symbols/identity work was used as an over-arching interpretive structure into which the content of the sub-themes were fitted. However, the content of the sub-themes was not pre-theorised, but based on their prevalence across transcripts, for example, the social context of getting older or the importance of a 'good diet' were both mentioned by more

than half the participants. The resulting interpretive analysis was then presented to the team, who discussed the findings and alternative interpretations, before producing the final report.

Results

Coping strategies: social comparison and risk minimization

Many participants found being identified as ‘higher risk’ came as a shock. This was particularly the case for those who understood themselves to be ‘healthy’, either in terms of having no symptoms or ‘feeling fit’, or in terms of having a healthy lifestyle in comparison with others. For this retired female professional, her high risk status made her feel as if she had “a disease,” which she sought to reinterpret:

> ‘That’s why it’s come as a shock, really, for me to be able to accept that you’ve got…I mean I’m not going to say it’s a disease. I’m saying that I’ve got blood pressure.’
>
> (P28, female, professional, aged 63)

The manner of the delivery of the news, by letter, also had an impact on the response of participants. For many participants, the ‘black and white’ nature of the information amplified the news for them and made it concrete and thus harder to dismiss. This was a temporary reaction; most of those who reported being initially ‘shocked’ found this died down as they took consolation in the idea that heart disease is preventable (through medication, lifestyle change and surgery):

> ‘I know that they can give you medication and help you and there are things that can be done to help you nowadays, so…but it did shock me a bit when I first saw it, as I say, in black and white.’
>
> (P34, female, retired secretary, aged 63)

For others, the information about their higher risk status was less surprising and more confirmatory. This was particularly the case for those with a family history of heart disease, or with an ongoing history of high blood pressure or cholesterol issues. One participant who worked as a nurse had seen her mother die of an unexpected heart attack when she was only 47. Her sense of her own vulnerability had been elevated by this experience, particularly as her local GP had also raised the issue of familial risk prior to the study:

> ‘I wasn’t surprised, really, when I got the letter to say I’m kind of high risk, because I’ve always been told I could be high risk because my mother, so it didn’t come as any great surprise to me, really. No.’
>
> (Participant 22, female, nurse, aged 49)

Whether initially surprised or not, many participants reported quite lengthy discussions with their GPs and nurses about the exact level of risk and some had doubts about its correctness. A couple of participants (both engineers) perceived the risk calculation as a “black box” and wanted to figure out themselves what constituted their risk. Some perceived themselves to be at the ‘lower end’ of the ‘high risk’ category, or ‘near to the boundary’. For others, the percentages concretized and brought to the fore their own concerns about their risk factors and lifestyle which had been in the background before the intervention:

> ‘It’s an objective assessment, so you can kid yourself, but you can’t kid the numbers.’
>
> (P19, male, Information Technology consultant, aged 55)

Participants used a variety of coping strategies to ‘make sense’ of their risk. Some minimized their sense of personal vulnerability by making downward social comparisons. This took the form of reassuring themselves they were not as ‘bad’ or ‘unhealthy’ as

others. This retired shop floor worker (aged 62) portrayed his move to Cornwall on retirement as a way to buy into a more relaxed, less stressed environment. In his understanding, this made him less likely to be a coronary candidate than an old work colleague of his:

> '[He was] self-stressed at work, always workaholic as you might say. Worried about overtime…I hate to say he drunk quite a bit and everybody at work said that, you know, he was a candidate for a heart attack if he didn't change his methods or his lifestyle and he did. You know, I say, I haven't known anybody [have a heart attack] since I've been down here 'cause it's a totally different lifestyle we lead. We move in different circles now.'
>
> (Participant 10, male, retired shop floor worker, aged 62)

For others, however, making downward social comparisons only exacerbated their sense of bewilderment about being labeled 'high risk'. This retired professional who formerly worked in the electricity industry found the disjunction between his perception of himself as fit and active, and his designation as 'high risk' particularly hard to understand:

> 'And so you think, I'm above average, you know, and obviously that concerns me, 'cause I walk round the town, like, and I see all these people, younger than me even, like this, you know, stick, fag in their mouth…you think 'well, if I'm above average, where the hell are they, like? Where's Mr Average?'
>
> (P29, male, retired professional, electricity industry, aged 62)

However, in the longer part of the interview, he revealed that he felt that his tendency to be 'to use an old word, a whittler…I do let things get to me' [note: whittler is a colloquial Northern expression for 'worrier'] that in some part accounted for his new 'high risk' status.

Obesity was a key criterion on which many downward comparisons were made. Several male participants thought they were not at risk precisely because they were 'trim' or 'fit' for their age, especially in comparison to those in their circle who were 'big lads' or

‘carrying a bit of weight’. This participant, a late-forties male who worked as a van driver identified himself as a ‘prime candidate for a heart attack’ due to his drinking and smoking, but nevertheless felt less vulnerable than some of his peers:

> ‘I don’t know if that’s like being cocky or anything, but… I think I’m a fairly fit person compared to my peers who I see walking around. I think, ‘cor, I’m glad I’m not like him.’…certain friends and you can hear them, they can hardly breathe, ‘cause they’re a bit overweight and things like that. No, I don’t feel as if I’m any…I’ve got any threat towards heart disease at all, but who am I to think…? I’m not a doctor!’
>
> (Participant 21, male, van driver, aged 50)

Finally, many participants distinguished between the knowledge and the ‘feeling’ of being at risk of CVD. This often appeared paradoxical. Participants stated that they were at risk and would reel off the ‘standard’ reasons for this (such as poor diet, high cholesterol blood pressure). However, when asked later in the interview if they felt at risk or felt likely to have a heart attack, they said ‘no’. This seemed to be due to a variety of factors, such as a lack of tangible symptoms, having taken action such as starting statins, or just an instinct or bodily sensation that one is ‘all right’. This male retail assistant aged 60 distinguished between his intellectual and emotional feeling about being at risk:

> ‘Intellectually I know that, yeah, I’m at risk, because all the indicators will say that I am. But personally, no, I don’t. It’s illogical, isn’t it, really? I think because…I think being on the medication is one thing and also the change in my lifestyle…I honestly don’t feel as though I am at risk, no. But that’s a feeling, isn’t it? That’s an emotional thing.’
>
> (P37, male, retail customer assistant, aged 60)

Putting vulnerability in context: age and stage of life

Contextual factors concerning age and stage of life also appeared to mitigate participant’s sense of personal vulnerability. Age manifested itself in several ways in the interviews. Firstly, many participants spontaneously mentioned ‘aging’ and ‘getting older’ as risk

factors for CHD. Being at increased risk was perceived as inevitable, though not desirable, as one got older:

> 'I understand that the risk goes up with age anyway and [the nurse] wasn't able to offer me a pill for that!'
>
> (P14, male, retired engineer, aged 60)

As one man on the verge of retiring from his job as a ceiling fixer put it 'none of us can live forever' (P18, male, aged 59). Others used the metaphor of parts 'wearing out' which is related to mechanistic notions of the heart (Weiss, 1997): 'as you get older, things wear out, don't they?' (P29, male, aged 62). For many, such as this part-time handyman in his sixties, thinking about age tempered the initial shock of being diagnosed as 'high risk'. For him, being at greater risk was conceptualized as part of the natural process of aging:

> 'It could happen to everybody in the country at our age…the older you get, the more likely you are to get things. It's a part of life and it's the way things are.'
>
> (P23, male, driver and handyman, aged 62)

This participant, a female waitress (aged 63) who had officially retired but kept on working, drew on stereotypes of 'older' people to make a downward comparison which minimized her own sense of being personally vulnerable:

> 'I know you might think that 'oh this woman is coming over pretty smug'. But I'm not. I can still run for a bus, I can still dance, I can still…run upstairs. I can still do all those things that I think a 63-year old either should or shouldn't do…I just don't think I'm unfit for my age, so…so I honestly don't worry about it, and I don't think I'm going to have a heart attack next week, or whatever. It just never really enters my head.'
>
> (P15, female, waitress, aged 63)

It was not always the case that reflecting on age made participants feel less vulnerable. Previous research has shown people with a family history of CHD compare their own age to that of their relatives when they died (Hunt, Emslie, & Watt, 2001). Similarly, in this

study, many of those with a family history of premature heart disease reported that getting to middle-age or later had particular resonance for them, as it was the period of life in which their parents or siblings had suffered heart disease, and, in many cases, died:

> 'My father died at 54, thrombosis, not much warning…he was active all his life in a stone quarry, very labour intensive. His health diminished, dad had a mental barrier, thought he would die at 54, so when I was 54 and 186 days, I got paranoid about it really.'
>
> (P18, male, ceiling fixer, aged 59)

It was also the case that participants balanced their vulnerability to heart disease against other risks and illnesses which, for some, had appeared in later middle-age. For many participants with more serious illnesses, 'being at high risk of CHD' constituted something intangible with no current symptoms, and so was perceived as 'the least of my worries'. This retired female participant (aged 61) was awaiting a stoma reversal:

> '[I'm] a bit pragmatic about it really…because I'm facing another major op…I mean, I can't say it was the best day to hear it…your cholesterol's gone up, but it didn't actually, it wasn't a gasp, you know, I just said 'oh'.'
>
> (Participant 6, female, retired local government officer, aged 61)

In some instances, women in the sample downplayed their own risk of heart disease in comparison with other illnesses present in the family. In one family, both husband and wife had been in for cholesterol tests together and had compared notes:

> I mean, because my outcome probably was better than [my husband]'s…that's why we haven't you know, mentioned or thought nothing more about it…mine's nothing. Nothing at all…So, I haven't…you know, I never even thought nothing more about it until you rang, to be perfectly honest…and also he's being tested for diabetes and that and they think he's just on the borderline, so his health is far worse than mine. You know, I'm really healthy compared to Tony. So, you know, that's why I don't worry about it…don't even think about it.
>
> (P7, female, housewife, aged 58)

This may reflect a gendered experience of CHD risk where the woman's health needs are subsumed within that of the family as a whole (Angus et al., 2005).

Healthy identities: the potential for, and limits of, behaviour change

Although aging was perceived as normal, this did not mean that the participants were uninterested in behaviour change on the basis of their age. Indeed, many argued the opposite; as risk increases with age, so does the need for monitoring and treatment. There were, however, two senses in which participants perceived behaviour change to be constrained by their age and stage of life. Firstly, many felt they had already made many lifestyle changes in line with recent health edicts, particularly concerning dietary modification. The most commonly used term to describe their diets was 'healthy'. Healthiness was denoted through a variety of strategies, such as adherence to current health messages (cut down saturated fat, eating fruit and vegetables), putting limits on certain foods ('occasionally we eat sausages, but they are all low-fat sausages') and incorporating new products perceived as healthy (e.g. Benecol, half-fat foods):

> 'We have quite a lot of white meats, we do eat red meat, not fried, it's grilled or…we have fruit, well, I don't know…every day, I usually have a banana in the mornings. We eat porridge, I don't have a fry-up…we have fish once a week at least. So I don't see how I can eat any healthier…I don't think [the intervention] has been life-changing because I think we was doing everything right to start with.'
>
> (P10, male, shop floor worker, aged 62)

Participants also invoked the principle of 'balance' to describe how they had developed their current lifestyles, for example, eating in 'moderation', or 'sensibly'. This means not doing 'unhealthy' things to excess rather than removing them from their lifestyles completely:

> 'I would say that we try to compromise and try and balance it as much as we can, because if you cut out everything you just…it wouldn't be worth living, would it?'
>
> (P16, male, retired plumbing and heating engineer, aged 63)

The second way in which age and life stage impacted on participants' behaviour concerned age-related illness. Many participants reported a range of other health problems from cancer to arthritis at the time they were identified as high risk of CHD. This meant that although many were engaged in the notion of lifestyle change, they perceived these health problems to place practical limitations on them, particularly regarding exercise. This registered disabled woman, for example, was receptive to the nurse's suggestions to join a specific class for post-heart attack patients, but felt hampered by her lack of mobility:

> '[the nurse] said 'do you walk to the shops in the morning? I said 'yeah, as it's only downhill.' So she said 'can't you walk a bit further?' She's probably driving a blinking car fetching her, you know, but I said, 'I'll do my best'. I do try to walk as much as I possibly can, like….but as I said, I've got arthritis and it's not easy to exercise when you've got arthritis…I think I'll probably go down t'gym and just can't do it.'
>
> (P26, female, long-term disabled, aged 59)

SES differences were seen in relation to quitting smoking, a behaviour strongly linked with poverty (Jarvis & Wardle, 1999). In this sample, no higher SES participants smoked at the time of intervention, though a few had quit in previous decades. However, several lower SES participants were current smokers. In general, stopping smoking had been discussed during the intervention, and some smokers reported that they had thought of 'cutting down' although few had made concrete plans to do so. Many smokers, however, characterized their smoking as the 'only thing I do wrong' (P15, female, aged 62). This working-class housewife aged 58 from Cornwall framed herself as healthy, apart from the smoking

> No, it didn’t make me think, you know, I’m going to change anything at all…the style that we live is quite healthy and I can’t see, apart from giving up the smoking and more exercising, they’re the only real things that we can change. Our diet is fairly healthy.
>
> (P7, female, housewife, aged 58)

Despite practical and psychological limitations, particularly for lower SES participants, as a whole group they were responsive to the notion of behaviour change. Many planned future actions, such as walking more or taking cholesterol-lowering products (e.g. spreads, yoghurt drinks). Participants who had been prescribed cholesterol lowering statins or hypertensive drugs were usually willing to take them. Indeed, many participants contextualized these behaviours as typical amongst their age group, for example, pointing to friends, family and neighbours who “had had half, triple and quadruple bypass surgeries” or took ‘cholesterol’ drugs to convey a sense of normality.. This housewife, from a lower SES household (aged 64) was one of three or four neighbours recruited for the study, which led her to conclude that ‘everybody’ was on ‘tablets’ although she had never heard of the term ‘statins’ before:

> ‘I think the doctor sees that many people with it and to them it’s quite an everyday occurrence, you know what I mean? They don’t make a lot of it and a lot of people I speak to are taking tablets, so it’s not out of the ordinary nowadays for people to be taking the tablets…I think I’m one of a lot of other people who’ve got the same thing. My brother-in-law takes them. Somebody else that takes them…tablets…I’m just joining the mob, going with the crowd.’
>
> (P24, housewife, female, aged 61)

The social normality of knowing people with heart disease and treating it was as much the case amongst lower SES participants, if not more, reflecting higher CHD rates in these communities.

Discussion

Looking at the results from within Radley’s theoretical framework, the participants here utilized a number of ‘coping strategies’ in response to their identification as at ‘high risk’ of CHD. The following discussion focuses on these psycho-social responses as participants struggled to maintain their sense of being ‘healthy’ in the face of their new ‘high risk’ status.

One of the most obvious ‘coping strategies’ for many was to minimize their feelings of personal vulnerability. As the introduction indicated, there is a wealth of literature concerning ‘optimistic biases’. Much of it uses comparators suggested by the researcher (e.g. compared with the average person, compared with someone of a similar age and gender). However, it is important to identify the real-life referents for social comparisons made by participants themselves, as these may be disease-specific. Here, many participants used weight to make favorable comparisons between themselves and others in terms of CHD risk; their slimness providing them with a false sense of reassurance in the face of a high risk diagnosis. This is in line with Weinstein’s original research which showed that when subjects have a strong stereotype of a person at risk, they are likely to feel less personally vulnerable (1980, also see Davison et al., 1991 for a description of the ‘typical’ coronary candidate).

Personal vulnerability to CHD was minimized not just through social comparison between people, but through internal comparisons along a continuum of risk and disease (Saukko, Richards, Shepherd, & Campbell, 2006; Senior, Smith, Michie, & Marteau, 2002). Many participants weighed the future intangible risk of heart disease against their current bodily experience of disease, and found it to represent ‘the least of my worries’.

This is a particularly interesting finding, given the transition to a ‘preventive’ model of medicine. Potential future risks will not be assessed in isolation, but in context, as part of a mosaic of risks and diseases which will increase throughout the lifespan. The consequence of this is that certain risks may not be highly salient to their target audience.

Another coping strategy which many participants used to cope with their CHD risk was ‘normalization’. Many participants emphasized the naturalness and inevitability of becoming at higher risk of CHD as one aged. This fits with the optimistic bias research which showed that in some instances, subjects do take into account baseline risk factors such as age when assessing their personal vulnerability (Renner et al., 2000). Participants also drew on the experiences of others in their social world to highlight the typicality of taking statins or hypertensive medication amongst people of later middle-age and older. The strategy of ‘normalization’ has been little explored, but it is suggested it may have an important psychological function. It allowed many participants to feel less individually culpable for being at risk (‘everyone is at risk at my age’) but also to take action on the same basis (‘everyone is taking statins’). It also enabled participants to deflect any sense of being singled out for being at high risk of CHD. The exception to this was a minority of younger patients (under 55) who were primarily at risk due to a family history of CHD. For them, it was the lack of normality of their parents dying much younger in comparison with their contemporaries which elevated their sense of risk.

Many participants downplayed their risk alongside planning and executing preventive behaviour, supporting the hypothesis that invulnerability does not necessarily lead to a loss of motivation to change (Taylor & Brown, 1988). Senior and colleagues found a similar co-occurrence of invulnerability plus intention to change behaviour in a

study of individuals with a genetic predisposition to elevated cholesterol (Senior et al., 2002). They suggest this may be because, according to the self-regulation model (Leventhal, Nerenz, & Steele, 1984), people distinguish between threat control, which requires minimization of the emotion elicited by a health threat, and danger control, which is concerned with how to cope at a behavioural level. The findings also fit with the notion that perceived vulnerability may be reciprocally related to risk reducing behaviour (Gerrard et al., 1996). As Milam and colleagues emphasized, it may be precisely the 'experience' of one's own risk–reducing (or not risk-reducing) behaviour which impacts perceived vulnerability (Milam et al., 2000). In this study, participants were interviewed two weeks after intervention. This would have given them time to consider their designation as 'high risk', think through what they were willing or were not willing to change, and reassess their vulnerability accordingly. This feedback loop may well reduce the initial emotional impact of the initial high risk diagnosis; few participants reported feeling emotionally vulnerable at the time of interview. It must also be acknowledged that participants' reporting of intention to change behaviour may also reflect the value placed on behaviour change in the intervention, and indeed, through the research process itself. Their response can be understood as that of the 'good patient' who says they intend to 'do something about it' as much as a response to their own perceived vulnerability to CHD.

Radley's work also places considerable emphasis on understanding these coping strategies within their social contexts. Age and stage of life emerged from our analysis as an important contextual factor in perceptions of CHD risk; however it has received little attention to date. This is perhaps surprising, given that in many other behaviours, such as smoking, life-stage is considered intrinsic to understanding responses to risk information

(Parry, Thompson, & Fowkes, 2002). Backett and Davison argue that to understand health related behaviour, it is important to chart how lifestyles relate to 'life-course', the cultural assumptions and processes which constitute social and physical ageing (Backett & Davison, 1995). In this study, the life-course of later middle-age was a particularly important filter though which risk was framed. Participants drew both on the symbolic context of socio-cultural beliefs concerning ageing and heart disease risk and the material/physical context of increased ill-health and disability to make sense of, and respond to, their CHD risk. Life-course is a particularly important context in which to consider CHD risk, because CHD risk assessments are weighted for age, as reflected in the relatively narrow age-range of 'high risk' participants in this study (the vast majority being 55 to 65). Interventions must therefore attend to life-course factors if they are to succeed with their target group.

Radley has also emphasized the symbolic and identity dimensions of coping with vulnerability and ill-health (Radley, 1989, 1996). In line with this, we suggest that many of the participants interpreted their identification as 'high risk' candidates as a threat to their 'healthy self' identity. This is because, as Davison's work has shown, being a (stereo-) typical 'coronary candidate' is associated with a host of negative associations, ranging from a stressed personality, being overweight, to leading an unhealthy lifestyle (Davison et al., 1991). Many participants exhibited a sense of indignity that they were being told they were at 'high risk' (and thus, covertly, unhealthy). Many were motivated to re-establish their healthy identity in the face of this label by making downward social comparisons (I'm healthier than others) and by normalizing being at high risk (everyone is at higher risk once they get older). The desire to (re)-establish one's healthy identity

was also evidenced in the discourse concerning having a ‘healthy’ or ‘good’ diet where the majority of participants emphasized their compliance with, or at the very least awareness of, current dietary edicts. In this instance, diet acts as the touch-stone of what it means to be healthy. Many lower SES participants who were still smokers, for example, maintained that ‘apart from the smoking’, they were healthy as evidenced by their healthy diets. This may reflect the dominance of bio-medical discourses concerning high cholesterol and diet as primary causes of CHD risk; it may also reflect the difficulty of giving up smoking in relation to more minor lifestyle changes such as switching to a cholesterol-lowering type of spread. Other participants embodied their healthy status by talking about going to the gym, or going dancing, which play with stereotypes of the capabilities of older adults. Such identity work may partly be an attempt to deflect any perceived moralistic judgment about the causality of their high risk status by tangibly demonstrating that they were not to blame.

Turning now to the implications for clinical practice and policy, these results suggest for ‘high risk’ participants, ‘downgrading’ their risk in the face of perceived threat is not necessarily incompatible with being receptive to modest behavioural change. It is not clear, therefore, that trying to boost people’s sense of vulnerability (as is the predicate of many psychological theories such as the Theory of Planned Behaviour) would result in greater change. Another approach would be to utilize the experience of participants to design CHD intervention programmes sensitive to the social contexts and social position of the target group. Many patients may not be aware, for example, that studies show that adopting a healthy lifestyle in middle-age can bring a prompt benefit in terms of lower rates of cardiovascular disease and mortality (Kind, Mainous, & Geesey, 2007).

Informing them of this might bolster motivation, particularly towards exercise. Dietary advice could also be more context-sensitive intervention given most patients’ perceptions that their diet is already ‘balanced’ or ‘healthy’. This might mean moving away from simply repeating the formulaic set of well-known dietary rules and offering them ‘added-value’ information about a specific CHD preventative diet. Finally, interventions need to be sensitive to the social position of lower SES individuals, for example, focusing on making salient the risk which smoking presents for heart health.

The participants in this study were typical in many respects of those targeted for widespread CHD prevention (older middle-aged people with multiple risk factors, both higher and lower SES with a majority from lower SES groups, both men and women) and so the findings are likely to be transferable to similar groups. There is one notable exception; despite efforts to recruit South Asian participants in Nottinghamshire, this failed. It remains an open question how ethnic minorities particularly vulnerable to heart disease react to primary prevention, making this a fruitful area for further research.

In conclusion, understanding how patients at ‘high risk’ of CHD make sense of, and behave in relation to, their risk has the potential to improve the primary care interventions for this target group. The goal is not to produce interventions which play to stereotypes of older adults (Ory, Kinney Hoffman, Hawkins, Sanner, & Mockenhaupt, 2003), but rather produce ones which are context-sensitive to the life-course and social position of those who find themselves at ‘high risk’ of CHD in later-middle age, and which inspire change rather than inhibit it.

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Table 1: Participant characteristics

Table 1 ***Participant characteristics***	***No. of participants (%)***
Gender	
Female	14 (37%)
Male	24 (63%)
Age	
45-54	6 (16%)
55-65	32 (84%)
Mean age (s.d.)	58.32 years (4.34)
Socio-economic status (NS-SEC)	
Managerial/professional	11 (29%)
Intermediate	2 (5.5%)
Lower supervisory	2 (5.5%)
Manual	18 (47%)
Long term disabled/unemployed	5 (13%)
Total participants	38 (100%)