

# How do social relationships influence men's weight?

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# **Table of contents**

<b>Abstract.....</b>	<b>10</b>
<b>Acknowledgements.....</b>	<b>12</b>
<b>Abbreviations .....</b>	<b>13</b>
<b>Chapter 1: Introduction .....</b>	<b>14</b>
1.1 Defining obesity .....	14
1.2 Causes of obesity – link to lifestyle .....	15
1.3 Prevalence of overweight and obesity .....	18
1.4 Health impact of overweight and obesity.....	23
1.5 Financial cost of obesity in the UK.....	24
1.6 UK policy on obesity .....	26
1.6.1 A brief history of obesity-related policies and campaigns.....	26
1.6.2 NICE and NHS guidelines .....	30
1.7 Weight loss among men .....	32
1.8 Health behaviour theories .....	35
1.9 Thesis rationale and aims .....	38
1.10 Overview of thesis.....	39
<b>Chapter 2: Male perceptions of diets and exercise for weight loss, and weight loss groups: a review of qualitative literature.....</b>	<b>41</b>
2.1 Introduction.....	41
2.2 Methods.....	43
2.2.1 Search Strategy.....	43
2.2.1.1 Inclusion Criteria.....	46
2.2.1.2 Exclusion Criteria.....	46
2.2.2 Data extraction and screening .....	47
2.2.3 Analysis.....	48
2.2.4 Quality assessment.....	51
2.3 Results .....	52
2.3.1 Themes .....	59
2.3.1.1 Theme 1: ‘ <i>A sense of commonality</i> ’ .....	60
2.3.1.2 Theme 2: ‘ <i>Being a man</i> ’ .....	62
2.4 Discussion .....	67
2.4.1 Discussion of literature .....	67

2.4.2	Limitations of Literature Review 1 .....	71
2.4.3	Implications for research and practice .....	71
<b>Chapter 3: How family members influence male weight loss: A review of qualitative and quantitative research.....</b>		<b>73</b>
3.1	Introduction.....	73
3.2	Methods.....	75
3.2.1	Search strategy .....	76
3.2.2	Inclusion Criteria.....	77
3.2.3	Exclusion Criteria.....	78
3.2.4	Data Extraction and Screening.....	78
3.2.5	Analysis of quantitative data.....	81
3.2.6	Analysis of qualitative data.....	81
3.2.7	Quality assessment.....	83
3.3	Results.....	84
3.3.1	Study design and summary of included literature.....	84
3.3.2	Quality appraisal of included literature.....	85
3.3.2.1	Quality of the included quantitative literature .....	85
3.3.2.2	Quality of qualitative literature .....	93
3.3.3	Quantitative literature synthesis regarding weight loss interventions for couples .....	100
3.3.3.1	Programme purpose, content and delivery.....	100
3.3.3.2	Participant characteristics, measures and outcomes.....	101
3.3.4	Quantitative literature synthesis regarding parent-child weight loss interventions.....	105
3.3.4.1	Programme purpose, content and delivery.....	105
3.3.4.2	Participant characteristics, measures and outcomes.....	106
3.3.5	Qualitative literature synthesis regarding men’s perceptions of family influences on male weight loss behaviours.....	113
3.3.5.1	Summary of qualitative literature.....	113
3.3.5.2	Theme 1: “Motivation to change and to stick to it” .....	114
3.3.5.3	Theme 2: “Together as a couple” .....	116
3.3.5.4	Theme 3: “Household norms and how these changed” .....	117
3.3.5.5	Theme 4: “Dependence on family members” .....	118
3.3.5.6	Theme 5: “Difficulties in communicating needs while protecting family relationships” .....	119
3.3.5.7	Theme 6: “Strategies for managing negativity and non-support”.....	121
3.4	Discussion .....	123

3.4.1 Discussion of findings in relation to wider literature.....	123
3.4.2 Limitations of Literature Review 2.....	127
3.4.3 Conclusions and implications for future research.....	129
3.4.4 Overall summary of literature review chapters.....	130
3.4.5 Overarching aims of the PhD.....	131
<b>Chapter 4: Methods .....</b>	<b>135</b>
4.1 Introduction.....	135
4.2 Ontological and epistemological position.....	135
4.3 Study design.....	136
4.3.1 Rationale for a qualitative study design.....	136
4.3.2 Rational for using Thematic Analysis.....	137
4.3.3 Rationale for face-to-face, semi-structured interviews.....	140
4.3.4 Ethical Approval and Ethical Considerations .....	142
4.3.4.1 Ethical approval .....	142
4.3.4.2 Ethical considerations .....	143
4.3.4.3 Ensuring participant and researcher well-being.....	145
4.4 Participant selection, recruitment and characteristics .....	146
4.4.1 Rationale for recruiting participants from one county in the South West of England .....	146
4.4.2. Inclusion and exclusion criteria .....	147
4.4.3 Sampling strategy.....	152
4.4.4 Recruitment strategy .....	152
4.4.5 The anticipated and encountered difficulties of recruitment.....	153
4.4.6 Characteristics of participants recruited to study 1 and study 2.....	155
4.5 Data collection and analysis.....	156
4.5.1 Conducting and recording interviews .....	156
4.5.2 Interview transcription .....	159
4.5.3 Organisation and analysis of the data.....	159
4.5.4 Quality and rigor .....	163
4.5.5 Reflexivity and memo writing .....	165
<b>Chapter 5: “We don’t talk about things like that”: How social relationships influence men’s diet, exercise and weight loss behaviours .....</b>	<b>168</b>
5.1 Introduction.....	168
5.2 Findings.....	168
5.2.1 Participant characteristics.....	168
5.2.2 Theme 1: “Going it alone or as part of a group” .....	172
Sub-theme: “Physical activity as a social activity” .....	172

Sub-theme: “Feeling judged by other people” .....	173
Sub-theme: “Experiences of weight loss groups” .....	175
5.2.3 Theme 2: “ <i>What “being a proper bloke” entails</i> ” .....	176
Sub-theme: “Men don’t ‘diet’” .....	176
Sub-theme: “Being bigger than I was” .....	179
Sub-theme: “Competitiveness” .....	181
5.2.4 Theme 3: “ <i>Adapting to family life</i> ” .....	182
Sub-theme: “What it means to be a father and parent” .....	183
Sub-theme: Change in priority when men become fathers .....	185
Sub-theme: “The importance of partnership” .....	187
Sub-theme: “Feelings of powerlessness - the control of the ‘housewife’” .....	189
5.2.5 Theme 4: “ <i>Appropriate sources of support for men</i> ” .....	191
Sub-theme: “Appropriate times to seek doctor input” .....	191
Sub-theme: “Perceptions about support from weight loss groups” .....	193
Sub-theme: “Seeking trusted, professional advice” .....	194
5.2.6 Summary of results .....	195
<b>Chapter 6: Discussion of Study 1 findings</b> .....	<b>197</b>
6.1 Being a man.....	197
6.2 Being a father .....	202
6.3 Findings in relation to the Theory of Planned Behaviour .....	204
6.4 Reflection on study findings and sample characteristics .....	206
6.5 Conclusions .....	208
<b>Chapter 7: “<i>Well he didn’t have much choice in it. He got what he was given</i>”: How do women perceive social relationships to influence men’s dietary, physical activity and weight loss behaviours?</b> .....	<b>210</b>
7.1 Introduction .....	210
7.2 Findings.....	210
7.2.1 Participant characteristics.....	210
7.2.2 Theme 1: “ <i>Women’s tolerance of their partner’s weight-related behaviours</i> ” .....	214
7.2.3 Theme 2: “ <i>Reflections on facilitating healthier behaviours</i> ” .....	216
7.2.4 Theme 3: “ <i>A healthful family life</i> ” .....	220
7.2.5 Theme 4: “ <i>Female control and responsibility</i> ” .....	223
7.2.6 Theme 5: “ <i>An unhappy situation</i> ” .....	226
7.2.7 Theme 6: “ <i>Navigating identity and health in society</i> ” .....	231
7.2.8 Summary of results .....	234
<b>Chapter 8: Discussion of Study 2 findings</b> .....	<b>236</b>

8.1 Being a good wife and a good mother: women’s role in the partnership and in the home.....	236
8.2 Husband to father and masculine identity.....	238
8.3 How other people play a role.....	241
8.4 Findings in relation to The Theory of Planned Behaviour (TPB).....	242
8.5 Reflection on participant characteristics and study findings.....	244
8.6 Conclusions.....	247
<b>Chapter 9: General discussion of Study 1 and Study 2 findings .....</b>	<b>248</b>
9.1 Introduction.....	248
9.2 Partner influences.....	249
9.3 Child influences.....	252
9.4 Doctor influences.....	255
9.5 Friend influences.....	258
9.6 Parent influences.....	260
9.7 Personal trainers.....	261
9.8 Revisiting the research questions and future work - Key findings from Study 1 and Study 2.....	262
9.8.1 Revisiting the research questions.....	262
9.8.2 Future work.....	265
9.9 Study findings in relation to the Theory of Planned Behaviour.....	270
9.10 Final reflections on the research process, findings and limitations. ....	272
9.11 Conclusions.....	275
<b>References.....</b>	<b>277</b>
<b>Appendix.....</b>	<b>295</b>
1. Personal correspondence between PhD student (KH) and Slimming World, dated 13/02/2018.....	295
2. CASP Qualitative Checklist for Literature Review 1 literature appraisal .....	296
3. JBI checklist for Literature Review 1 literature appraisal .....	297
4. PRISMA checklist for Literature Review 1 .....	299
5. Example of electronic search of database for Literature Review 1 .....	302
6. PRISMA checklist for Literature Review 2.....	304
7. Example of electronic search of database for Literature Review 2 .....	307
8. Example of how NVivo was used to code results section of qualitative research articles for Literature Review 2 .....	309
9. CASP Qualitative Checklist for Literature Review 2 .....	310
10. JBI checklist for qualitative research, Literature Review 2.....	311
11. CASP Randomised Controlled Trial checklist for Literature Review 2.....	312

12.	Personal Correspondence with one of the authors of the Burke et al., 2002 article included in Literature Review 2.....	313
13.	Interview guide for Study 1.....	313
14.	Interview guide for Study 2.....	316
15.	Full approval for Study 1 granted by Oxford Brookes UREC.....	319
16.	Full ethical approval for Study 2.....	320
17.	Recruitment poster for qualitative study with men (Study 1).....	321
18.	Recruitment poster for qualitative study with women (Study 2).....	322
19.	Participant information sheet for Study 1 .....	323
20.	Participant information sheet for Study 2 .....	328
21.	Consent form for Study 1 .....	330
22.	Consent form for Study 2.....	331
23.	Short demographic questionnaire for both qualitative studies (Study 1 and Study 2).....	332
24.	Anonymised example of field notes kept in reflexive diary .....	333
25.	Braun and Clarke 15 steps to qualitative data analysis (Braun and Clarke, 2006, p96) .....	334

## Tables

<b>Table 1</b> BMI classification of weight status .....	15
<b>Table 2</b> Hospital Episode Statistics with a primary or secondary diagnosis of obesity. Source: (NHS Digital, 2017a; NHS Digital, 2018).....	25
<b>Table 3</b> Summary of weight loss groups for men in the UK.....	35
<b>Table 4</b> Summary of gender sensitised weight loss interventions for men and inclusion of health behaviour theory .....	37
<b>Table 5</b> Search terms devised for Literature Review 1 .....	44
<b>Table 6</b> Example of codes, two of four sub-themes and one theme developed during analysis process for Literature Review 1 .....	50
<b>Table 7</b> Table of research articles included in Literature Review 1 .....	54
<b>Table 8</b> Sub-themes of Literature Review 1 .....	59
<b>Table 9</b> Search terms derived for Literature Review 2.....	77
<b>Table 10</b> List of research articles included in Literature Reviews 1 and 2 .....	81
<b>Table 11</b> Example of codes, two sub-themes and one theme developed during data analysis.....	83
<b>Table 12</b> Summary of quantitative literature included in Literature Review 2, highest quality to lowest quality .....	88
<b>Table 13</b> Summary of included qualitative literature in Literature Review 2.....	95
<b>Table 14</b> Summary of weight loss intervention for couples.....	103
<b>Table 15</b> Summary of fathers' weight, BMI, waist circumference among the parent- child weight loss interventions.....	109
<b>Table 16</b> Themes generated in Literature Review 2.....	114
<b>Table 17</b> Amendments made to Study 1.....	143
<b>Table 18</b> Weight classifications of adults in the South West and England.....	147
<b>Table 19</b> Indices of deprivation of participants based on postcode of residence .....	156
<b>Table 20</b> Summary of data analysis procedures (Adapted from Braun and Clarke, 2006, p. 87) .....	161
<b>Table 21</b> Participant characteristics for Study 1 .....	169
<b>Table 22</b> Additional information regarding male participants obtained during interviews .....	170
<b>Table 23</b> Study 1 themes and sub-themes .....	171
<b>Table 24</b> Participant characteristics for Study 2.....	212



<b>Table 25</b> Additional information regarding female participants obtained during interviews .....	213
<b>Table 26</b> Themes names for Study 2 .....	214
<b>Table 27</b> Abbreviated theme names used in Figure 9 .....	269

## **Figures**

<b>Figure 1</b> Obesity System Map. Foresight Report 2007 .....	17
<b>Figure 2</b> Global prevalence of obesity (BMI $\geq$ 30 kg/m <sup>2</sup> ). .....	19
<b>Figure 3</b> Overweight and obesity among men and women in England and Wales 1993 - 2015.....	21
<b>Figure 4</b> Weight trends among men in England and Wales, 1993 - 2015. ....	22
<b>Figure 5</b> Tiers of weight management services in the NHS. Adapted from: (British Obesity and Metabolic Surgery Society, 2017; NICE, 2014c) .....	31
<b>Figure 6</b> PRISMA flow diagram for Literature Review 1 .....	48
<b>Figure 7</b> PRISMA flow diagram for Literature Review 2 .....	80
<b>Figure 8</b> The Theory of Planned behaviour (Ajzen, 1991) .....	162
<b>Figure 9</b> Diagram of how PhD research projects share common themes .....	267
<b>Figure 10</b> Key to Figure 9 .....	269
<b>Figure 11</b> Key findings from Study 1 and 2 in relation to attitudes, subjective norms and perceived behaviour control of the TBP (Ajzen, 1991) .....	271

## **Abstract**

Background: The prevalence of obesity has been predicted to continue increasing until at least 2050. Obesity is strongly associated with preventable, chronic diseases. Weight gain is often associated with lifestyle choices surrounding high-calorie foods and drinks, physical inactivity and sedentary behaviour; research suggests excess weight is more detrimental among men. Men are underrepresented in weight loss groups and interventions. Few studies explore men's perceptions surrounding diet, physical activity and weight loss in England.

Methods: A literature gap regarding social influences on men's weight loss behaviours was identified, which informed the research conducted for this PhD. Two literature reviews were undertaken to identify key social contacts in men's weight loss experiences. Using semi-structured interviews, two qualitative research studies in the South West of England explored the social relationships that men (*n* 19) and men's female relatives (*n* 16), framed as influencing male weight loss behaviours. Thematic Analysis and the Theory of Planned Behaviour (TPB) were used to analyse data.

Findings: Men who are fathers may be motivated to care for their weight and health to demonstrate their role as a "good father"; men do not seek "support" from friends for weight loss; and that men talk positively about potential weight loss advice a doctor could provide. This research also found that some women perceive men to be sensitive about their body image, and that many women felt they were in control of food and nutrition at home.

Conclusions: Both qualitative studies make an original contribution to the literature: the study among men is thought to be the first interview-based study in the South West of England to explore how social relationships influence men's dietary, physical activity

and weight loss behaviours and experiences; the study among women is thought to be the first study to explore female perspectives of how social relationships influence male weight loss behaviours. These findings could be used in community public health initiatives, weight management services or interventions for men, or in clinical guidelines and policy.

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I am incredibly grateful for the support my father has provided throughout my life.

Thank you, Dad, for believing in me, and for pushing me as much as you have, to be the best that I can be. I know that you and mum both made sacrifices so that I could have a good education. I hope I have done you both proud. To my wonderful husband, Donald, I say a huge “thank you”, for all that you have done to support me throughout my PhD journey, and in our life together. You have been a strong shoulder to lean on and an invaluable source of support. The PhD years have not been easy; I don’t think anyone else would have stood by my side the way you have; I am so thankful that you were there for me. My final acknowledgement is to my mother. I dedicate this PhD thesis to my lovely mum. My mother was forever telling me to “go home and do some work” at the end of a visit with her, I know she was so proud of me, and all that I had achieved so far in my life. She was so excited at the prospect of attending a third graduation ceremony. I miss her each and every day. This thesis is for you, mum.

## **Abbreviations**

95% CI	95% Confidence Interval
BMI	Body Mass Index
CASP	Critical Appraisal Skills Programme
FFIT	Football Fans In Training
GP	General Practitioner (doctor)
HDHK	Health dads, Healthy kids
HSE	Health Survey for England
JBI	Joanna Briggs Institute
LSOA	Lower Layer Super Output Areas
NHS	National Health Service
NS	Non-significant
OECD	Organisation for Economic Co-operation and Development
OSOP	One Sheet Of Paper
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RCT	Randomised Controlled Trial
SD	Standard deviation
SES	Socioeconomic status
SHED-IT	Self-Help, Exercise, and Diet using Information Technology
TPB	Theory of Planned Behaviour
UREC	University Research Ethics Committee
WHO	World Health Organization

# **Chapter 1:** **Introduction**

This chapter begins with an explanation of how obesity is defined and caused. Secondly, the current trends in obesity prevalence, both globally and within the UK, are presented and discussed. This chapter then provides an overview of the health issues relating to excess weight and the cost of this to the UK National Health Service (NHS). The current policy guidelines and recommendations regarding the treatment of obesity are then summarised. Finally, the chapter concludes with a more detailed overview of obesity in men, by examining a sample of the current research and health behaviour models used to explore this topic.

## 1.1 Defining obesity

The World Health Organization (WHO) uses the terms “pre-obese”, “overweight” and “obese” to describe a state of excess weight, and the WHO website defines overweight and obesity as “abnormal or excessive fat accumulation that presents a risk to health” (WHO, 2018a; WHO, 2018b). In the UK, the NHS website on obesity describes it as a state of being “very overweight, with a lot of body fat” (NHS, 2018a). Body Mass Index (BMI) is a measure of weight for height and is commonly used in public health to estimate adiposity and excess weight (Royal College of Nursing, 2018). BMI is calculated by dividing a person’s weight (in kilograms) by the square of their height (in metres) and is used to distinguish between underweight, healthy weight and excess weight, including overweight and obese (see Table 1 below). While BMI is widely used, it does have limitations and can be an inaccurate way to estimate body fat among certain populations (Burkhauser and Cawley, 2008; Romero-Corral et al., 2008).

Despite the limitations of using BMI, strong correlations have been identified between BMI and other, more accurate, methods for measuring body fatness (Gallagher et al., 1996). BMI remains a widely used measure of adiposity; it is a cheap measure and easy to use (Daniels, 2009).

**Table 1** BMI classification of weight status

<b>BMI (kg/m<sup>2</sup>)</b>	<b>Classification</b>
< 18.5	Underweight
18.5 - 24.9	Normal or healthy weight
25.0 - 29.9	Overweight
30.0 - 34.9	Class I obese
35.0 - 39.9	Class II obese
≥ 40.0	Class III obese

Source: (WHO, 2018a)

In addition to BMI, waist circumference is used as a measure of central adiposity and it has been shown to correlate with BMI (Lean, Han and Morrison, 1995). A waist circumference of greater than 94 cm in men and 80 cm in women equates to an increased risk of metabolic complications; a waist circumference greater or equal to 102 cm and 88 cm equates to a substantially increased risk of metabolic complications in men and women respectively (WHO, 2000). Waist circumference is not, however, used to classify a person as overweight or obese and instead indicates a risk to health (NICE, 2014b).

## 1.2 Causes of obesity – link to lifestyle

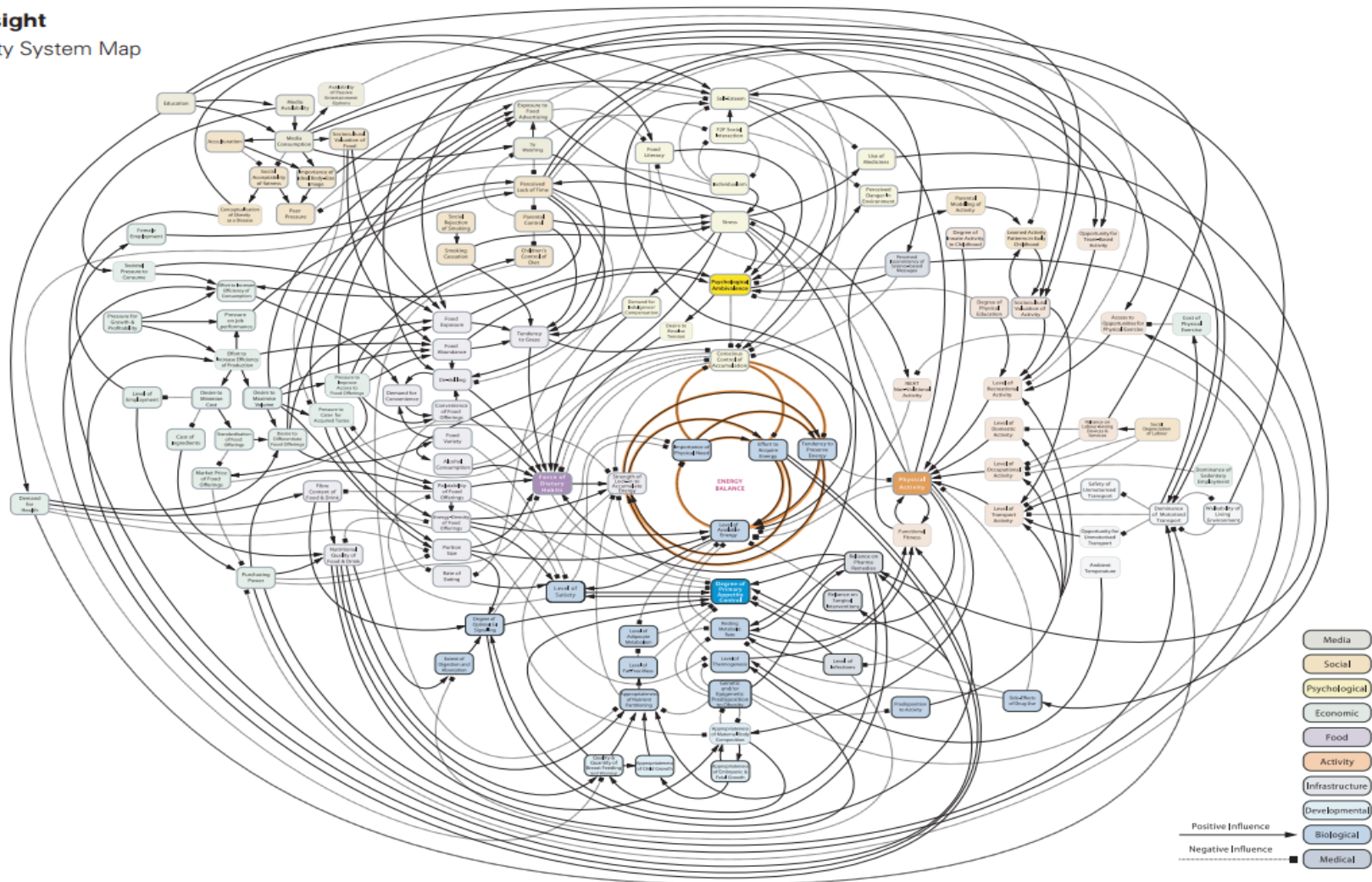
The aetiology of obesity is complex, with numerous inter-related behavioural, societal and environmental factors working together to create an obesogenic environment

(Butland et al., 2016). Some instances of obesity are associated with genetic mutations, for example, in Prader-Willi syndrome (NHS, 2018b). There is also research surrounding food addiction and the interplay between neural mechanisms involved in the homeostatic versus hedonic regulation of food intake (Lutter and Nestler, 2009). However, obesity is often the result of lifestyle choices and behaviours; an energy imbalance between dietary intake, physical activity and sedentary behaviour (Gortmaker et al., 2011). There is a clear link between the development of overweight and obesity with food and exercise behaviours (Shaw et al., 2006) and these lifestyle behaviours are the focus of this PhD. Throughout this thesis, terms relating to dietary intake are used frequently. The terms “dietary intake” or “dietary behaviours” are used to refer to the food a person consumes, whereas the terms “diet” or “dieting” are used to describe a weight loss diet.

The Government-commissioned “Foresight” report regarding obesity was published in 2007 and as a result of this, the obesity system map was created (see Figure 1). The obesity system map demonstrates the complex nature of obesity. At the centre of the map are the words “energy balance” and surrounding this, the key factors influencing energy balance (media, social, psychological, economic, food, activity, infrastructure, developmental, biological and medical) are interconnected and can have a positive or negative influence on each other.



**Foresight**  
Obesity System Map



**Figure 1** Obesity System Map. Foresight Report 2007

Government Office for Science (Vandenbroeck, Goossens and Clemens, 2012)

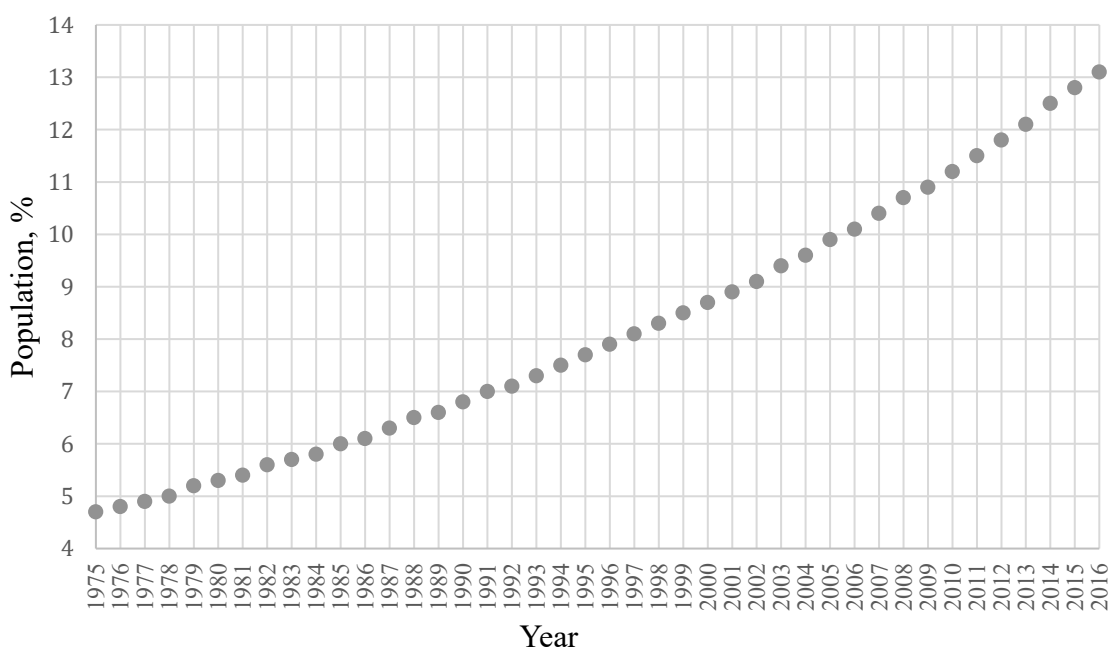
It is thought that obesity incidence has risen due to an increased consumption of fat and sugar from fast food, alcohol, sugar sweetened beverages, large portion sizes of food, and the availability of cheap and energy dense foods (Jeffery et al., 2006; Nielsen, Siega-Riz and Popkin, 2002). The Scientific Advisory Committee on Nutrition (SACN, 2015, p. 80) conducted a systematic review with meta-analysis and found an association between sugar intake and weight gain, noting an: “*inadequate energy compensation (degree of voluntary reduction in intake of other foods or drinks), for energy delivered as sugar*”. A further review by the SACN on the topic of saturated fats and health concluded that there is limited evidence surrounding the impact of reducing saturated fat from the diet on anthropometry (SACN, 2018). However the review does acknowledge that the evidence regarding a reduction of dietary fat on anthropometry may have been stronger if findings were based on reducing total dietary fat intake rather than saturated fat specifically (SACN, 2018).

Obesity could be prevented through strategies that address the production, distribution and marketing of food, and by creating an environment that facilitates and promotes physical activity (WHO, 2014, p. xiv). A lack of physical activity is associated with a decreased life expectancy and with non-communicable diseases, including obesity (Lee et al., 2012). Working on this principle, it has been found that labour-saving devices and motorised transport have also contributed to the rise in obesity in recent decades (Lanningham-Foster, Nysse and Levine, 2003). Behaviours related to increased sedentary time are also considered factors for obesity-related morbidity and mortality (Wilmot et al., 2012).

### 1.3 Prevalence of overweight and obesity

The WHO estimated that worldwide, the prevalence of obesity almost tripled between 1975 and 2016 (see Figure 2 below) (WHO, 2018c). Obesity was once considered a concern among developed countries however evidence suggests this is no longer the case, and it is now also a cause for concern among developing countries (Bhurosy and Jeewon, 2014). The WHO has incorporated obesity into its global targets for non-communicable diseases: Global target 7 is to halt the rise in diabetes and obesity (WHO, 2014).

Global prevalence of obesity (BMI  $\geq 30$  kg/m<sup>2</sup>) among adults (18+ years), 1975 - 2016  
(Age standardised estimates, mean %)



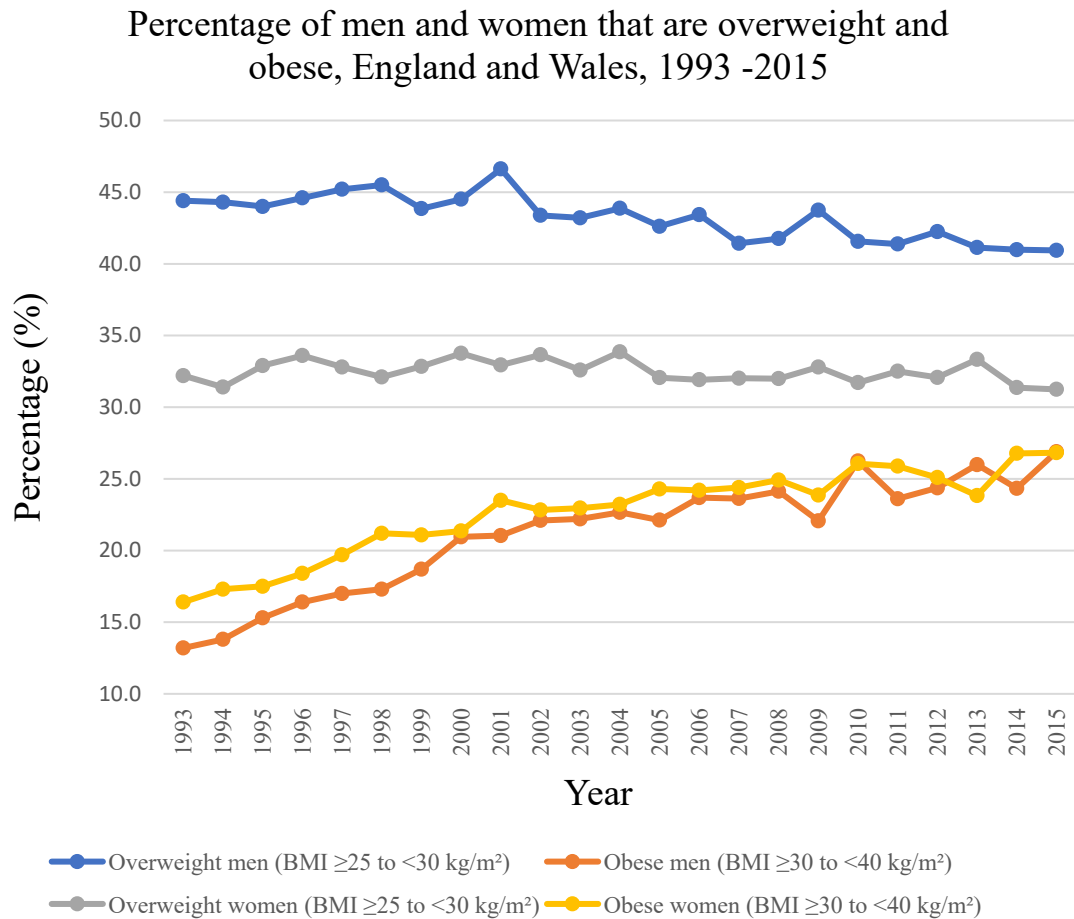
**Figure 2** Global prevalence of obesity (BMI  $\geq 30$  kg/m<sup>2</sup>).

Data source: (WHO, 2017)

In 2016, approximately 39% of adults worldwide aged 18 years and over were classified as overweight and 13% were classified as obese, which equates to more than 1.9 billion adults and 650 million adults, respectively (WHO, 2018c). Obesity has become a major

public health concern with the situation now referred to as an epidemic globally and in the UK (Smith, 2008; Morgen and Sørensen, 2014). The UK is now colloquially known as the 'fat man of Europe' (Academy of Medical Royal Colleges, 2013). Within the 35 member states in the Organisation for Economic Co-operation and Development (OECD), the UK had the 6<sup>th</sup> highest obesity prevalence - the highest in Western Europe - and was reported to have “considerably worse” obesity rates than other OECD member states (OECD, 2017). The prevalence of overweight and obesity has risen drastically in recent decades in England and Wales. In 1980, 8% of men and 6% of women were classified as obese (National Audit Office, 2001). These figures had nearly trebled by 1998 to 17% of men and 21% of women (Goldberg, 2000). In 2016 it was estimated that 26% of men and 27% of women in England and Wales were classified as obese (Conolly and Saunders, 2017).

The Health Survey for England (HSE) is an annual report that estimates the health status of the people of England and Wales. The most recently published HSE (2016) report, found that more men were overweight (BMI 25.0 – 29.9 kg/m<sup>2</sup>) than women; 40% vs. 30% respectively (Conolly and Saunders, 2017). Additionally the survey found that the proportion of men and women who are classified as obese has been similar since 2010 (Conolly and Saunders, 2017). Overall, more men carry excess weight (BMI ≥ 25 kg/m<sup>2</sup>) than women, 68% versus 58% respectively (Conolly and Saunders, 2017). Data from the Health Survey for England 2015 trend tables, as shown in Figure 3, shows that the prevalence of overweight and obesity among both men and women in England and Wales has steadily increased since 1993 (Joint Health Surveys Unit Nat Cen Social Research & UCL, 2016).

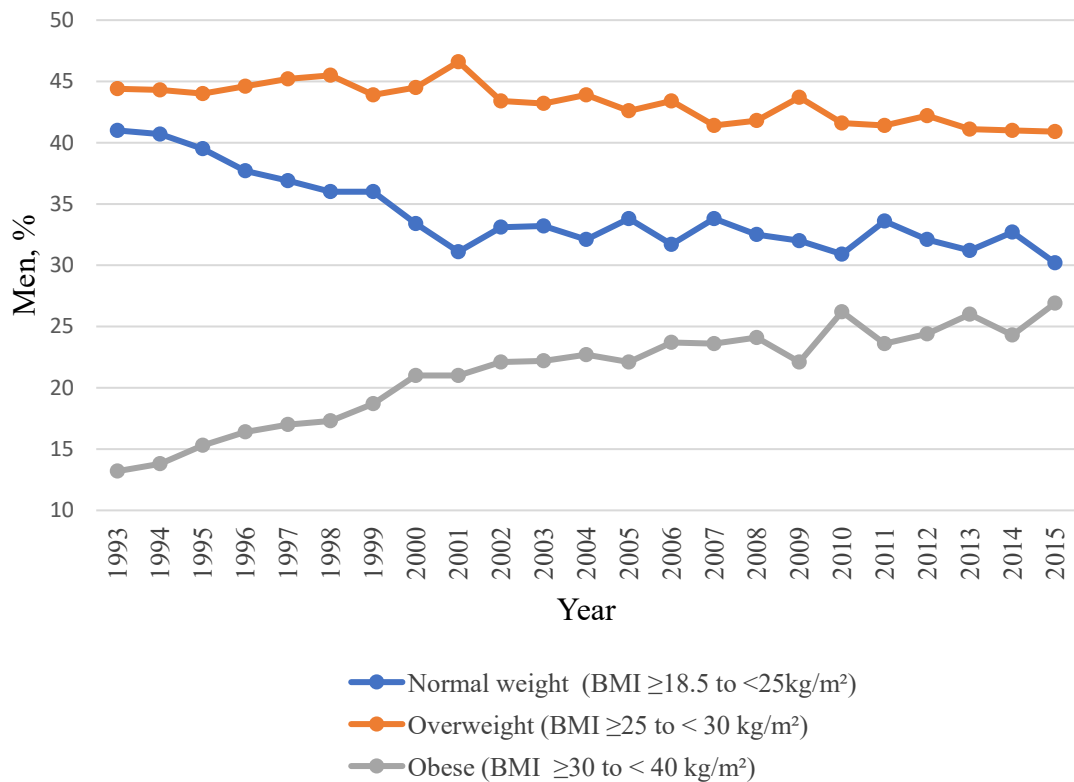


**Figure 3** Overweight and obesity among men and women in England and Wales 1993 - 2015.

Source: Health Survey for England, 2016. (Joint Health Surveys Unit Nat Cen Social Research & UCL, 2016) Re-used with the permission of The Health and Social Care Information Centre, also known as NHS Digital. All rights reserved.

Furthermore, as the proportion of adults carrying excess weight has increased, so the proportion of people with a healthy weight BMI (18.5 – 24.9 kg/m<sup>2</sup>) has decreased; between 1993 and 2015 it decreased from 41% to 30% among men and from 49% to 40% among women (Moody and Neave, 2016). Figure 4 shows how the trend in weight classification of adults changed between the years of 1993 and 2015 among adult men in England and Wales.

### Weight trends among men in England and Wales, 1993 - 2015



**Figure 4** Weight trends among men in England and Wales, 1993 - 2015.

Source: Health Survey for England, 2016. (Joint Health Surveys Unit Nat Cen Social Research & UCL, 2016) Re-used with the permission of The Health and Social Care Information Centre, also known as NHS Digital. All rights reserved.

Data from the Health Survey for England 2015 trend tables shows that the mean BMI of adults in England has continued to increase from 25.8 kg/m<sup>2</sup> in 1998, to 27.4 kg/m<sup>2</sup> in 2015 (NHS Digital, 2016). The proportion of adults with a healthy weight BMI decreased from 40.4% in 1998 to 34.9% in 2015 (NHS Digital, 2016). According to the second edition of the Foresight Tackling Obesity Report published in 2016, it is estimated that by 2035, 47% of men and 36% of women could be classed as obese; by 2050 these figures are predicted to rise to 60% of men and 50% of women in the UK (Butland et al., 2016). These statistics demonstrate that for many years, men have been disproportionately affected by excess weight, the prevalence of excess weight is

predicted to continue to increase, and the prevalence of excess weight is predicted to remain higher among men than women. The Black Report, published in 1980, illustrated how social class and health were associated; such that those of a lower class were more likely to be smokers, to eat more sugar and less fruit, and to engage in less leisure time physical activity than those of a higher social class (Black, Townsend and Davidson, 1982). This is of importance since, as discussed earlier in this thesis, dietary intake and physical activity are associated with overweight and obesity (Shaw et al., 2006). Socioeconomic status (SES) is also associated with BMI, such that those with a higher SES have a lower BMI compared to those with a lower SES (Bann et al., 2017). However, other research shows that neighbourhood deprivation and SES are not associated with BMI in men (Stafford et al., 2010).

#### 1.4 Health impact of overweight and obesity

Hippocrates observed that “sudden death is more common in those who are naturally fat than in the lean” (Chadwick and Mann, 1950, p. 154). Overweight and obesity are strongly associated with an increased risk of mortality (Aune et al., 2016). The Framingham Heart Study in 1948 was one of the first epidemiological studies to associate lifestyle factors with health conditions (Mahmood et al., 2014). The information gained from this study has been highly valuable and allowed researchers to identify obesity as a risk factor for cardiovascular disease and cancer (Hubert et al., 1983). Obesity has also been identified as a risk factor for Type 2 diabetes (Chan et al., 1994). It was estimated in 2011 that over the next 20 years, obesity-related diseases would result in an increase of 544,000 – 668,000 cases of diabetes, 331,000 – 461,000 cases of coronary heart disease and strokes, and 87,000 – 130,000 cases of cancer in the UK (Wang et al., 2011). Obesity comorbidities are not limited to physical conditions: a

review by the National Obesity Observatory found a bi-directional relationship between obesity and mental health conditions such as depression (Gatineau and Dent, 2011). Additionally, excess weight confers greater health risks among men; an increase in BMI is associated with a greater risk of mortality in men than in women (Di Angelantonio et al., 2016). The health risks associated with obesity include asthma, arthritis, cardiovascular disease, stroke, diabetes, high blood pressure, sleep apnoea and pregnancy complications including gestational diabetes mellitus (Chu et al., 2007; Forno and Celedón, 2017; Mokdad et al., 2003). Furthermore, a review article published in Nature found evidence of an association between excess body weight and cancers of the oesophagus, gallbladder, stomach, liver, pancreas, small intestine, colon and rectum (Kant and Hull, 2011).

### 1.5 Financial cost of obesity in the UK

It was estimated that in 2016/17 the NHS carried out 6760 bariatric operations (NHS Digital, 2017b). Obesity surgery is offered to people who have a BMI  $\geq 40$  kg/m<sup>2</sup> or for those with a BMI between 35-40 kg/m<sup>2</sup> and who have other conditions such as cardiovascular disease or Type 2 diabetes. The cost of obesity surgery is very high; Roux-en-Y gastric bypass surgery is one of the more common types of bariatric surgery performed (67%) and is estimated to cost approximately £6000 per patient (NICE, 2014a) and therefore the bariatric surgeries of 2016/17 may have cost the NHS up to £40.5 million. In 2015/16 there were 524,725 admissions in NHS hospitals where obesity was recorded as the primary or secondary diagnosis, of which 175,401 were male (see Table 2). This is a large increase among all persons (1086%) and an increase of 872% among men in 11 years (see Table 2). While the increase in men is less than women, the overall increase is vast and further highlights the severity of the obesity



epidemic. The rise in hospital admissions due to obesity ultimately results in greater costs to the NHS.

**Table 2** Hospital Episode Statistics with a primary or secondary diagnosis of obesity. Source: (NHS Digital, 2017a; NHS Digital, 2018)

Year	All persons <sup>1</sup>	Female (%)	Male (%)	Number of all persons <16 years old
2005/06	52,019	30,552 (58.7)	21,432 (41.2)	1,727
2006/07	67,211	39,411 (58.6)	27,791 (41.3)	1,896
2007/08	80,914	48,829 (60.3)	32,080 (39.6)	2,104
2008/09	102,987	63,457 (61.6)	39,524 (38.4)	2,229
2009/10	142,219	89,657 (63.0)	52,517 (36.9)	2,400
2010/11	211,783	136,566 (64.5)	75,190 (35.5)	2,762
2011/12	266,666	173,803 (65.2)	92,828 (34.8)	2,842
2012/13	292,404	192,795 (65.9)	99,579 (34.1)	3,115
2013/14	365,577	242,118 (66.2)	123,423 (33.8)	3,011
2014/15	440,288	290,747 (66.0)	149,490 (34.0)	3,357
2015/16	524,725	349,279 (66.6)	175,401 (33.4)	3,415
2016/17	616,961	408,630 (66.2)	208,290 (33.8)	4,092

1. "All persons" includes a small proportion of recorded cases where gender was unknown

It was found that the cost of overweight and obesity to the NHS in 2006/07 was £5.1 billion (Scarborough et al., 2011). The cost to the NHS associated with excess weight is projected to be £5.3 billion in 2025 and £9.7 billion in 2050 (Butland et al., 2016).

These figures do not take into consideration the cost of other weight-related conditions; it is estimated that the cost of diabetes, coronary heart disease, stroke, and other related diseases will increase from approximately £17.4 billion in 2001 to £22.9 billion in 2050 (McPherson, Marsh and Brown, 2007). The combined medical cost of treating obesity-

related diseases is estimated to increase by £1.9 – 2.0 billion per year by 2030 (Wang et al., 2011). As a part of the Foresight Tackling Obesity report, the future trends in obesity were predicted and modelled (McPherson, Marsh and Brown, 2007). These models have predicted that the wider societal cost of an elevated BMI will increase from £7.0 billion per year in 2001, to £37.2 billion per year in 2025 and to £49.9 billion per year in 2050 (McPherson, Marsh and Brown, 2007). Furthermore, the Foresight Tackling Obesity report estimated that a greater percentage of the NHS budget will be used to treat and manage obesity as time progresses (McPherson, Marsh and Brown, 2007).

## 1.6 UK policy on obesity

This section provides a brief timeline of past and present dietary, physical activity and obesity-related policy and prevention strategies. It also summarises the current NHS and NICE guidelines for the treatment and management of obesity in adults.

### 1.6.1 A brief history of obesity-related policies and campaigns

The UK Government has many campaigns and policies designed to improve the health of the nation. In 1999, the UK Government produced a document, “Saving lives: Our Healthier Nation”, in which four major causes of mortality and morbidity were identified, and targets set for their reduction through the identification of risk factors (Department for Health, 1999). The four main targets were; cancer, coronary heart disease and stroke, accidents, and mental health (Department for Health, 1999). Within this document, obesity was identified as a risk factor for coronary heart disease and stroke, and a target was set to reduce the death rate in people under the age of 75 years by at least 40%. The report discussed nutrition, obesity and physical activity as factors

that contributed to coronary heart disease and stroke, and also highlighted the need for more physical activity and sport opportunities. It included a pledge to introduce exercise on prescription, and tailored sports programmes for those who were classified as obese (Department for Health, 1999). In 2001, the National Audit office placed a firm emphasis on obesity as a public health target, rather than as a factor for another disease as the “Saving Lives: Our Healthier Nation” report had (National Audit Office, 2001). In 2002 the UK Government introduced the “5-a-day campaign” to promote the consumption of five different portions of fruit or vegetables each day (NHS, 2018c). The campaign used photographs of fruit and vegetables to illustrate what one portion constituted. This was followed by the 2009 “Change 4 Life” campaign which had the slogan of “Eat Well, Move More and Live Longer”, and utilised bright colours and Plasticine-like characters as a means of also engaging children in their health campaigns (Cross-Government Obesity Unit, 2009). In 2011, the “Healthy Lives, Healthy People: A call to action on obesity in England” report was produced by the Department of Health, which was described as “*a radical shift in the way we tackle public health challenges*” because “*so many of the lifestyle-driven health problems we see today are already at alarming levels*” (Department of Health, 2011, p. 3). The report outlines how National Government will facilitate weight loss through various physical activity and healthy eating initiatives across the lifespan. The physical activity guidance for adults was updated in 2011 to: at least 150 minutes of moderate intensity activity, or 75 minutes of vigorous intensity activity, over the course of a week (Department of Health Physical activity Health Improvement and Protection, 2011).

In 2013 Public Health England, the NHS and other collaborators produced the Public Health Outcome Framework (PHOF) for 2013-2016 and within this, identified four key domains relating to public health; the “health improvement” domain addressed diet and excess weight among children and adults and suggested that these would be addressed

through health improvement programmes commissioned by local authorities and the NHS (Public Health England, 2012). Another objective of the PHOF was to reduce preventable mortality, and mortality from cancer and cardiovascular disease among many others (Public Health England, 2012). Since it is known that obesity is associated with cancer and cardiovascular disease (Wang et al., 2011), the PHOF objectives indirectly address obesity prevalence as a public health issue.

In 2013 the responsibility for the prevention and management of obesity was transferred from Primary Care Trusts to local authorities, and an emphasis was placed on reducing inequalities because deprivation, obesity and obesity-related morbidities are associated (Local Government Association, 2013; Evans et al., 2000; Robertson, Lobstein and Knai, 2007). In 2014, Public Health England produced a report “From evidence to action” whereby obesity, particularly among children, was listed as one of seven health improvement priorities for 2016 to 2019 (Public Health England, 2014b). The “everybody active, every day” Public Health England campaign attempted to address physical activity using four strategies: to create an active society and change norms and attitudes; to encourage professionals to promote behaviour change; to create environments that facilitate and promote physical activity, and to create interventions based on community needs (Public Health England, 2014a).

In 2016 the “Eatwell plate” was renamed and updated to the “Eatwell guide” and provided guidance on healthy food choices and the proportion of food types that people should have, on average, on each plate (Public Health England, 2016b). In 2016 Public Health England launched the “One You” campaign, which acknowledged the association between lifestyle behaviours and preventable mortality, so was designed to encourage people to address their unhealthy lifestyle behaviours and to improve their health (Public Health England, 2018b). Resources are available on the “One You” website, which can be downloaded and used by members of the public, businesses and

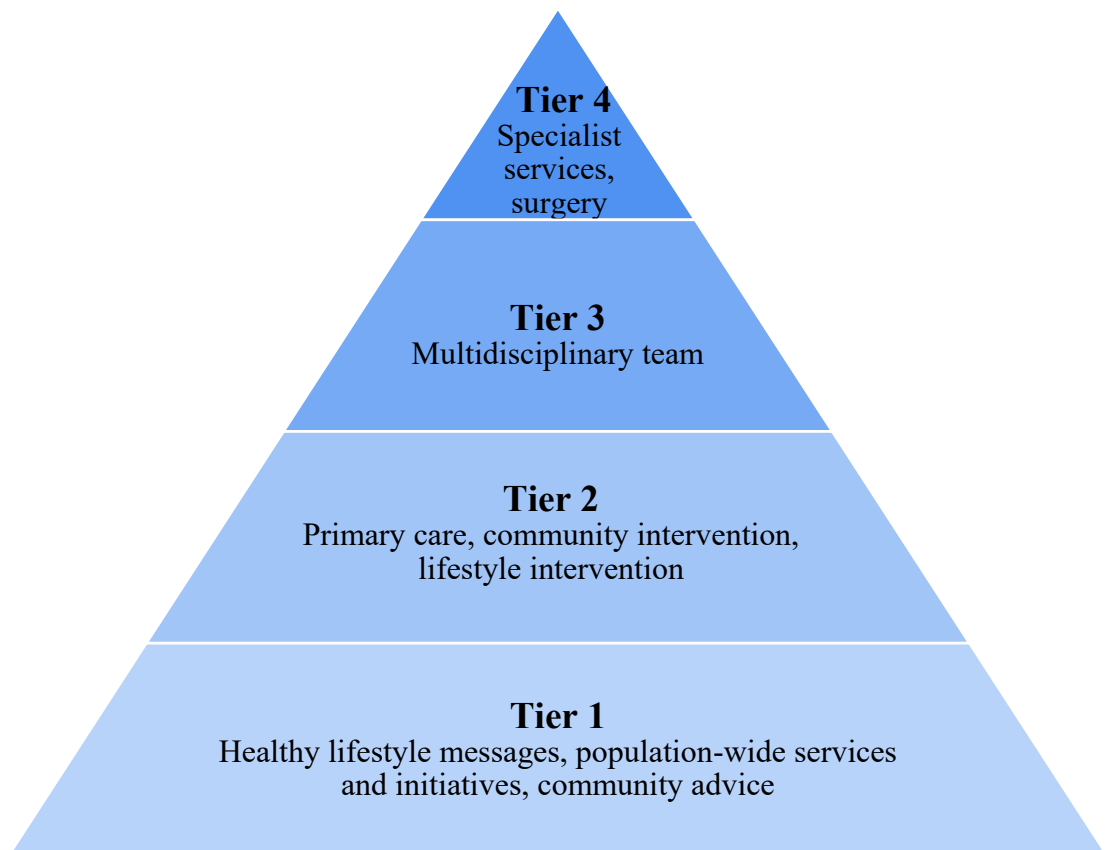
organisations to prompt and promote healthier behaviours. Additionally, the “Making Every Contact Count” mission was introduced which sought to utilise contact time that organisations and people had with other members of the population, as an opportunity to share health information, to signpost people to health-related services, to make referrals to services or to provide support (Public Health England, 2016c).

In order to promote active transport and physical activity, a Cycling and Walking Investment Strategy was developed in 2017 (Department for Transport, 2017). In 2017, it was also announced that a new obesity policy research unit would be set up in London (Department of Health & Social Care, 2017). Public Health England have recently designed a new framework, called “All Our Health”, which was designed to assist health professionals in the identification, treatment and management of health conditions, including obesity (Public Health England, 2018a).

A high consumption of sugar has been linked to poorer health outcomes and to obesity (Elliott et al., 2002) and in 2018 a sugar tax levy came into effect in the UK. A report by Public Health England found that by introducing a sugar tax and increasing the price of high sugar products by 10-20 % or more, this would influence purchasing and reduce consumption of sugar (Public Health England, 2015, p. 25). There have been numerous policy recommendations and environmental strategy suggestions relating to dietary intake which include but are not limited to: Taxation of fast food; a change in pricing strategies to promote the purchasing of healthier food; a ban on advertising of fast food from TV, radio and mass media; and portion size reduction (Davey, 2004). These are recommendations and have not necessarily been put into action. This section highlights the vast array of documents and campaigns produced to encourage healthy food choices and physical activity among the population; however, as discussed in section 1.3, the proportion of the population with a BMI  $\geq 25$  kg/m<sup>2</sup> has continued to increase.

## 1.6.2 NICE and NHS guidelines

There are many different sets of clinical guidelines by the National Institute for Health and Care Excellence (NICE) surrounding the treatment and management of overweight and obesity among adults. These include; obesity prevention (NICE, 2006), the identification, assessment and management of obesity (NICE, 2014b), lifestyle services for overweight or obese adults (NICE, 2014c) and preventing excess weight gain (NICE, 2015). These documents provide a number of recommendations and clinical pathways regarding the management of excess weight among adults. Recommendations vary from lifestyle interventions and behaviour change interventions to weight loss surgery. The NICE recommendation for public health professionals with an overweight or obese patient is that the patient's families or carers are provided with information regarding targets for health outcomes other than weight loss, such as increased physical activity and healthier eating (NICE, 2014b). Additionally, the Royal College of Physicians has produced a document recommending that in the treatment of obesity, the GP has a role in "*recognising how family issues are relevant to health behaviour*" and outlines that those patients who have undergone bariatric surgery should attend support groups (Wass and Finer, 2013, p. 10). Currently there is a 4-tier framework for the commissioning and provision of weight management services within the NHS (Figure 5).



**Figure 5** Tiers of weight management services in the NHS.  
Adapted from: (British Obesity and Metabolic Surgery Society, 2017; NICE, 2014c)

Tier 1 and Tier 2 weight management services provide an opportunity to improve health using lifestyle interventions and behaviour change strategies as an outpatient and can be in a community setting. Tier 1 involves advice from health care professionals (NHS England, 2016). Tier 1 services could also include prompt and nudge strategies and general public health messages about healthy eating, being active or losing weight. Tier 2 weight management services are provided by the public, private or voluntary sector; are based in the community, work places or at primary care sites; and can be delivered face-to-face or online (NICE, 2014c, p. 8). Tier 3 weight management services can take place in a primary, secondary or community care setting and involve a multi-disciplinary team to address weight management. Tier 4 weight management services include surgical interventions for severe or complex obesity (NHS England, 2016). The

commissioning of Tier 2 and Tier 3 services is carried out by different organisations: A recent survey of local authorities found that it was primarily councils that commissioned Tier 2 weight management programmes for adults, and clinical commissioning groups that commissioned Tier 3 weight management programmes (Local Government Association, 2018). The survey also found that among the councils who completed the survey, almost all had existing Tier 1 weight management services for adults (91%), and most had Tier 2 weight management services (86%). There were fewer Tier 3 and Tier 4 services available among localities; 72% and 78% offered these services, respectively (Local Government Association, 2018). This demonstrates the lack of weight loss services available for those with more complex obesity or with greater weight management needs. These figures, however, should be interpreted with caution as only 56% of councils who were invited to take part in the survey provided a response (Local Government Association, 2018). Tier 1 and Tier 2 services therefore are where the findings from this PhD research would bear the most value and use. Tier 1 and Tier 2 services also provide an opportunity to improve health without the need to directly engage with health care professionals; engaging in health-enhancing behaviours is something that men are stereotyped to avoid doing (Courtenay, 2000).

## 1.7 Weight loss among men

This chapter has provided an overview of the prevalence and health risks of obesity. Further to this, it has been estimated that the chance of an obese person returning to a healthy body weight is 1 in 210 for men and 1 in 124 for women (Fildes et al., 2015). A focus on factors that might facilitate weight loss therefore seems justifiable and appropriate. In particular, this PhD focuses on weight loss among men. As discussed,



there are more men in England carrying excess weight than women (Conolly and Saunders, 2017).

A recent report found that, of men and women classed as overweight or obese in England, more than 52% of men, and 31% of women, thought they were the “right weight” (Baker, 2018, p. 5). An analysis of the National Health and Nutrition Examination Survey data from the USA also found a similar misperception of weight status among men (Kuchler and Variyam, 2003). These reports demonstrate that overweight or obese men may not perceive that they are overweight or obese when they are medically classified as such. Furthermore, of the samples of men and women categorised as overweight or obese, 68% of men and 80% of women were trying to lose weight, demonstrating that overweight men may not believe they need to lose weight, and therefore do not engage in weight loss behaviours (Baker, 2018). Men are among the minority at some commercial weight loss groups: through personal correspondence with the commercial weight loss group “Slimming World”, it is known that 7% of the people signed up to Slimming World are male, and that *“Slimming World supports around 60,000 men to lose weight and lead healthier lives. There are three men attending each group on average, and 96% of our groups have at least one man in them.”* (Slimming World, personal correspondence, 2018, Appendix 1). A systematic review of weight loss trials using diet, exercise or behaviour change for weight loss found that; more studies had exclusively recruited women than men, reasons for recruiting women only included that women were more likely to diet, that men were harder to recruit, and that studies reported that obesity disproportionately affected women (Pagoto et al., 2012). Furthermore, it is estimated that approximately 10% of GP referrals for commercial weight loss groups are for men (Ahern et al., 2011; Stubbs et al., 2011).

While the NHS does provide a free 12-week diet and exercise weight loss programme for people with a BMI  $\geq 25$  kg/m<sup>2</sup> (NHS, 2018d) this service is not specific to men. Additionally, a recent systematic review concluded that weight loss interventions should be designed differently for men and for women (Robertson et al., 2016). The Men's Health Forum, in conjunction with Haynes publishing group and Public Health England, designed a booklet for professionals titled: "How to make weight-loss services work for men", as well as a booklet for men on how to lose weight (Men's Health Forum, 2014). Within the booklet for professionals, the barriers to engaging men in weight loss are highlighted. These barriers relate to men's perceptions about dieting, their weight status and enacting masculinity (Men's Health Forum, 2014).

There have been a number of weight management services designed for men that take place outside of a research context which are often focused around football. In particular, the "Man vs. Fat Football" programme is now currently available in many UK locations; as of the 20<sup>th</sup> July 2018 Man vs Fat Football has 48 "live" leagues and 118 planned leagues. Furthermore, through personal correspondence with "Man vs Fat", it is reported that an online weight loss group for men is due to be launched in September 2018. Table 3 provides a brief overview of some of these weight management programmes. It should be noted that the majority of these are focused around football.

**Table 3** Summary of weight loss groups for men in the UK.

<b>Area/Region</b>	<b>Name</b>	<b>Sport</b>	<b>Design</b>	<b>Website</b>
Bedfordshire & Hertfordshire	Beezee Bodies - Gutless	NA	12 week programme	<a href="http://beezeebodies.com/gutless/">http://beezeebodies.com/gutless/</a>
Bristol	Fans 4 life	Football	10 week programme	<a href="http://www.fans4life.com">www.fans4life.com</a>
Hampshire	Guts for the Game	Football	12 week programme	<a href="http://www.hampshirefa.com/news/2018/mar/09/guts-for-the-game">http://www.hampshirefa.com/news/2018/mar/09/guts-for-the-game</a>
Scotland	Football Fans In Training (FFIT)	Football	12 week programme	<a href="https://ffit.org.uk/">https://ffit.org.uk/</a>
EU and UK-wide	EuroFIT	Football	12 week programme	<a href="https://healthystadia.eu/eurofit/">https://healthystadia.eu/eurofit/</a>
UK-wide	Man vs Fat Football	Football	14 week programme	<a href="http://www.manvsfatfootball.org">www.manvsfatfootball.org</a>
Watford and Radlett	Man Alive – gut buster programme	NA	12 week programme	<a href="https://manalive.co.uk/12-week-gut-buster">https://manalive.co.uk/12-week-gut-buster</a>
Watford	Shape up	Football	12 week programme	<a href="http://www.watfordfcsetrust.com/shape">www.watfordfcsetrust.com/shape</a>
Wigan	Trim down shape up	NA	12 week programme	<a href="http://www.wigan.gov.uk/Resident/Health-Social-Care/Lose-Weight-Feel-Great/Service-Information/Trim-down-shape-up.aspx">www.wigan.gov.uk/Resident/Health-Social-Care/Lose-Weight-Feel-Great/Service-Information/Trim-down-shape-up.aspx</a>

## 1.8 Health behaviour theories

The Medical Research Council guidelines for developing and evaluating complex interventions promote the use of health behaviour theory in the design of interventions (Craig et al., 2008). Health behaviour theory provides a framework for the development

of behaviour change techniques. The use of health behaviour theory also aids the evaluation of interventions targeting specific behaviours. Some evidence suggests that interventions based on theory are not more effective than those which are not (Prestwich et al., 2014). However, this could be due the incomplete or partial use of health behaviour theory in the development or evaluation of an intervention (Prestwich et al., 2014). The Medical Research Council says that the use of a health behaviour theory can enable researchers to “*identify determinants of the target behaviour, define intervention points, select appropriate behaviour change techniques, and develop measures of change in the determinants of behaviour*” (Craig et al., 2008, p. 17). Health behaviour theories have also been used in the interpretation of qualitative research findings, as a way to identify facilitators and barriers to interventions (Dugdale et al., 2017). The following table (Table 4) provides a brief overview of current and past gender-sensitised weight loss interventions for men, and whether health behaviour theory was incorporated in the study design. The most commonly reported health behaviour theory among this type of weight loss literature was Social Cognitive Theory (Bandura, 1978).

**Table 4** Summary of gender sensitised weight loss interventions for men and inclusion of health behaviour theory

<b>Trial</b>	<b>Health behaviour theory</b>
FFIT (Gray et al., 2013) (on which EuroFIT, Hockey Fans in Training, and Rugby Fans In Training are based)	Social Cognitive Theory Control Theory
HAT TRICK (Caperchione et al., 2017)	Social Cognitive Theory Self-Determination Theory
Premier League Health (Pringle et al., 2013)	Not stated
Preventing Obesity Without Eating like a Rabbit (POWER) (Morgan et al., 2011a)	Social Cognitive Theory
Self-Help, Exercise and Diet using Internet Technology (SHED-IT) (Morgan et al., 2010)	Social Cognitive Theory
Healthy Dads Healthy Kids (HDHK) (Morgan et al., 2011b; Morgan et al., 2014)	Social Cognitive Theory Family Systems Theory
DADEE (Dads And Daughters Exercising and Empowered) (Morgan et al., 2018)	Social Cognitive Theory Self-Determination Theory

Health behaviour theories can be categorised in different ways; some are interpersonal or focus on the individual, some are intrapersonal, and some are community-wide (Gilbert, Sawyer and McNeill, 2014; National Cancer Institute, 2005). Additionally, while there are many health behaviour theories, each with differently named constructs, a review of five widely used health behaviour theories found that they shared similarities in their constructs (Noar and Zimmerman, 2005). To summarise: the inclusion of a health behaviour theory in the design phase of research could enhance the effectiveness of an intervention if used fully; health behaviour theories can be used in both qualitative and quantitative research to provide a framework for conceptualising or

interpreting findings; and current weight loss interventions among men do often utilise health behaviour theory.

## 1.9 Thesis rationale and aims

Obesity is a preventable cause of mortality and morbidity, a global epidemic (WHO, 2000), and a public health concern in England (National Audit Office, 2001). Research addressing excess weight is justified because the probability of returning to a healthy weight once a person becomes obese is low, and because both overweight and obesity are largely preventable causes of morbidity and mortality. Evidence suggests that there is an association between childhood obesity and having an obese parent (McLoone and Morrison, 2012). Therefore, research surrounding adult obesity may be of relevance to childhood obesity (McLoone and Morrison, 2012) and could benefit childhood obesity research. Children living in the most deprived areas, like adults, are also more obese than their peers living in the least deprived areas (Baker, 2018).

The purpose of this PhD research is to generate new information that could be used to better inform weight loss interventions so that they are more acceptable and more appealing to men, and to provide current information that could be used by local authorities, organisations or clinical commissioning groups regarding possible the weight loss barriers and facilitators that men may experience. Although the prevalence of childhood obesity has now stabilised (van Jaarsveld and Gulliford, 2015), the prevalence of obesity among adults remains high and has not yet been predicted to decrease in the future (McPherson, Marsh and Brown, 2007). More recent projections that modelled future BMI changes suggested that the proportion of adults classified as underweight, healthy weight and overweight will decrease, and the proportion of adults classed as obese will continue to increase (Bhimjiyani et al., 2018). Currently, there is a

lack of qualitative literature in England regarding overweight or obese (BMI  $\geq 25$  kg/m<sup>2</sup>) men's experiences and perceptions regarding diet and physical activity in a weight loss context. The purpose of this thesis is to fill such a gap and to explore social factors surrounding male weight loss. The use of health behaviour theory is an important component in intervention design and evaluation (Craig et al., 2008); while this PhD research does not intend to design such an intervention, the use of health behaviour theory should enable these findings to be transferred into other weight management services or interventions for men in the future.

### 1.10 Overview of thesis

Following this introductory chapter which summarises the current trends, policy and research on male weight loss (Chapter 1), two literature reviews are presented. The first literature review (Chapter 2) synthesises the qualitative literature regarding men's perceptions of weight loss diets, physical activity and exercise for weight loss, and weight loss groups or interventions. The second literature review focuses on how family members influence male weight loss behaviours and includes an analysis of both qualitative and quantitative research (Chapter 3). Following a summary of both literature reviews, the overarching research question for the thesis is generated, and from this, a series of more focused research questions are identified.

The research methods that were used for the research studies are presented in Chapter 4, where issues relating to research design, data collection and data analysis are addressed. Two interview-based qualitative research studies were designed as a part of this PhD research to explore how social relationships were perceived to influence men's weight loss behaviours. The findings of the first qualitative study which was conducted among men (Chapter 5) is followed by the discussion of these study findings (Chapter 6). The

findings from the second qualitative study conducted as a part of this PhD, which recruited female participants, are then presented (Chapter 7) and are immediately followed by the discussion of study findings (Chapter 8). The final chapter of the thesis provides a general discussion of both studies in relation to each other and conclusions regarding the findings of the research (Chapter 9). Within this final chapter the future uses of research findings are presented.

Throughout this thesis the terms “social contacts” and “social relationships” are used however they are not used interchangeably. The term social relationship is used to describe the social interactions that people have with someone who they are in some way bonded with, such as a close friend, a partner, a child or a parent. The term social contact is used to describe a social interaction that occurs in either a professional capacity, for example with a doctor or personal trainer, or with someone who is less familiar and more like an acquaintance. The term of “social influence” is used as a general term to incorporate both social contacts and social relationships.

The following chapter of this thesis (Chapter 2) seeks to understand men’s perceptions regarding diet and physical activity for weight loss, and their perceptions of weight loss groups. A preliminary search of the available literature yielded a small amount of relevant qualitative literature on men’s weight loss perceptions and experiences.

Therefore, this review sought to systematically sort and assess what research had already been conducted and what literature gaps remained. To achieve this, a review of the literature was undertaken which was reported using the “Preferred Reporting Items for Systematic Reviews and Meta-Analyses” (PRISMA) checklist and quality of literature assessed using qualitative research appraisal tools.



## **Chapter 2:** **Male perceptions of diets and exercise for weight loss, and weight loss groups: a review of qualitative literature**

### 2.1 Introduction

The following chapter presents one of the literature reviews that was undertaken as a part of this PhD. It is referred to throughout the thesis as Literature Review 1. This review was undertaken in 2016, after the data collection for Study 1 and 2 had been completed, but alongside the data analysis for Study 1. The purpose of this review was to amalgamate the available qualitative research regarding men's perceptions of diets and exercise for weight loss, and their perceptions of weight loss groups. While this review is not classified as a systematic review and it did not exhaust all available literature including grey literature, it is a review that utilized systematic methods in the literature searching, sorting and analysis process. A decision was made to focus on this specific topic because there remained a knowledge gap even though systematic reviews have been conducted on this topic (Archibald et al., 2015; Robertson et al., 2014). One systematic review had conducted database searching up to 2012 and had explored this topic among obese men (mean or median BMI of 30 kg/m<sup>2</sup>) using lifestyle and drug therapy to manage excess weight (Archibald et al., 2015). Another systematic review limited the included of literature to men with a BMI  $\geq 30$  kg/m<sup>2</sup>, or BMI  $\geq 28$  kg/m<sup>2</sup> plus cardiac risk factors for obesity, but included mixed-sex studies (Robertson et al., 2014). This presented a literature gap for a review which synthesised the views of overweight and obese men (BMI  $\geq 25$ kg/m<sup>2</sup>) and which explicitly sought to explore social influences on men's weight loss behaviours. Therefore, the current literature review was undertaken to explore this topic among overweight and obese men of any race or

ethnicity who were aged between 18-65 years. Unlike the review by Robertson (2014) which did not exclude participants above a certain age, the current review did introduce an upper age limit for participants. This is because older adults experience age-related changes in body weight, muscle mass, bone density and appetite (Jafari-Nasabian et al., 2017). It was therefore considered that if these participants were included in the literature review, it would reduce the transferability of findings of this qualitative review to other populations of overweight and obese men. To ensure the findings related to overweight as well as obese men, samples were included where the participants had a mean BMI  $\geq 25$  kg/m<sup>2</sup>. Mixed sex samples were excluded, to ensure the review findings were exclusively related to men's perceptions and experiences. The following research question was developed using the SPIDER tool (Cooke, Smith and Booth, 2012): To explore and assess the available qualitative research regarding overweight and obese men's perceptions about diet and exercise for weight loss, and weight loss groups or interventions.

**(S)** Sample: overweight or obese men

**(PI)** Phenomenon of Interest: men's talk regarding food and exercise modifications for weight loss, and weight loss groups or interventions.

**(D)** Design: Literature review using systematic methods

**(E)** Evaluation: The Critical Appraisal Skills Programme (CASP) qualitative checklist (CASP, 2018a) and the Joanna Briggs Institute (JBI) qualitative checklist (Lockwood, Munn and Porritt, 2015) (Appendices 2 and 3)

**(R)** Research type: qualitative research or mixed methods research where qualitative research is presented separately

The SPIDER tool was used instead of the PICO tool (Richardson et al., 1995) to develop the research question due to the qualitative nature of the review, and limited usefulness of PICO to develop qualitative research questions (Cooke, Smith and Booth, 2012). To the best of the researcher's knowledge, there are no other reviews which explore this topic in an overweight and obese ( $\text{BMI} \geq 25 \text{ kg/m}^2$ ) male-only sample. The findings of this review will provide new perspectives on how social influences can impact male weight loss. Qualitative literature is an appropriate medium through which to explore men's attitudes and experiences surrounding weight loss and weight loss groups; qualitative research focuses on subjectivity rather than objectivity, and how people make meaning from their experiences and interactions (Braun and Clarke, 2013; Pope, Ziebland and Mays, 2000). The findings of the review may provide key insights which could be used to inform future policy and interventions targeting male weight loss services and behaviours.

## 2.2 Methods

This review followed the PRISMA guidelines (Moher et al., 2009) (Appendix 4). The PRISMA guidelines were used to improve the transparency and detail regarding how the review was conducted and reported. The PRISMA flow diagram (Figure 6) illustrates how records were screened and then selected or excluded for the review. The review was not registered with PROSPERO. This is discussed in more depth in the section titled "Data Extraction and Screening" on page 47.

### 2.2.1 Search Strategy

Previous systematic reviews were screened to identify relevant subject headings and key words in order to develop search terms. Search terms were then tested and modified in

one electronic database to improve the relevance of articles retrieved. Search terms with truncations and quotation marks were used to ensure relevant literature was not missed, and to improve the specificity of searching. The search terms were developed and then grouped by topic, which resulted in six categories (see Table 5). These terms were then used in the electronic database searching:

**Table 5** Search terms devised for Literature Review 1

1	2	3	4	5	6
Qualitative	Weight loss	Men	Diet*	Exercis*	Group*
Interview*	Slimming	Male	Fast*	Training	Commercial
Focus group*	Weight gain	Man	Restrict*	Work out	Program*
Perspective*	Weight reduct*	Men's	Food*	Aerobic	Club*
Perception*	Weight change*	Male's	Nutrition*	Anaerobic	Class*
Experienc*		Man's	Low calori*	Resistance	"Slimming World"
Attitud*				Physical activit*	"Weight Watchers"
View*				Gym	
Belief*				Sport*	

The search terms in each column were searched together and were combined using Boolean operator "OR". Search terms were entered into the databases, and searches were limited to the abstracts of articles; see Appendix 5 for an example of electronic searching of databases. Once each column had been searched for separately, they were combined using Boolean operator "AND". Searches were combined and the date restrictions, from 01/01/1999 to the date that the database searches took place (between 28/09/16 and 03/10/16), were input.

Three searches per database were conducted:

- 1) Columns 1 AND 2 AND 3 AND 4
- 2) Columns 1 AND 2 AND 3 AND 5
- 3) Columns 1 AND 2 AND 3 AND 6

To retrieve relevant citations, the electronic databases MEDLINE, CINAHL, PsycINFO, British Nursing Database and PubMed were searched. Multiple databases were searched to retrieve articles that may not have been included on other databases. A decision was taken not to use Web of Science as one of the chosen databases. The advantages of Web of Science include the provision of citations dating back to 1900, and the option to search for conference proceedings; however this review did not seek to include research this old or citations of this nature. The PubMed website states that over 30,000 journals are indexed in PubMed (National Center for Biotechnology Information, 2019) which was considered to be a large number of citations and journals, and therefore likely to yield relevant literature if such literature was available. PubMed also allowed the user to filter citations by “human”, which results in refined results without losing any potentially relevant citations. Due to the vast size of both PubMed and Web of Science, it was considered that there would likely be overlap in citations if both were searched, therefore only one was searched and PubMed was used instead of Web of Science. Two other databases, CINAHL and BND, were also selected to ensure that the literature relating to health-professionals was included in the searches, and PsycINFO was searched so that behavioural and social science literature was included in searches. The MEDLINE database was searched because the PhD student was not aware at that time that all MEDLINE citations were indexed in PubMed. MEDLINE was included because it was known to index potentially relevant life-science citations.

The year of 1999 was selected as a lower date restriction in line with the publication of the UK Government plan in 1999 which pledged support for healthy eating and physical activity initiatives and acknowledged that obesity was associated with risk for coronary heart disease and stroke (Department for Health, 1999).

#### *2.2.1.1 Inclusion Criteria*

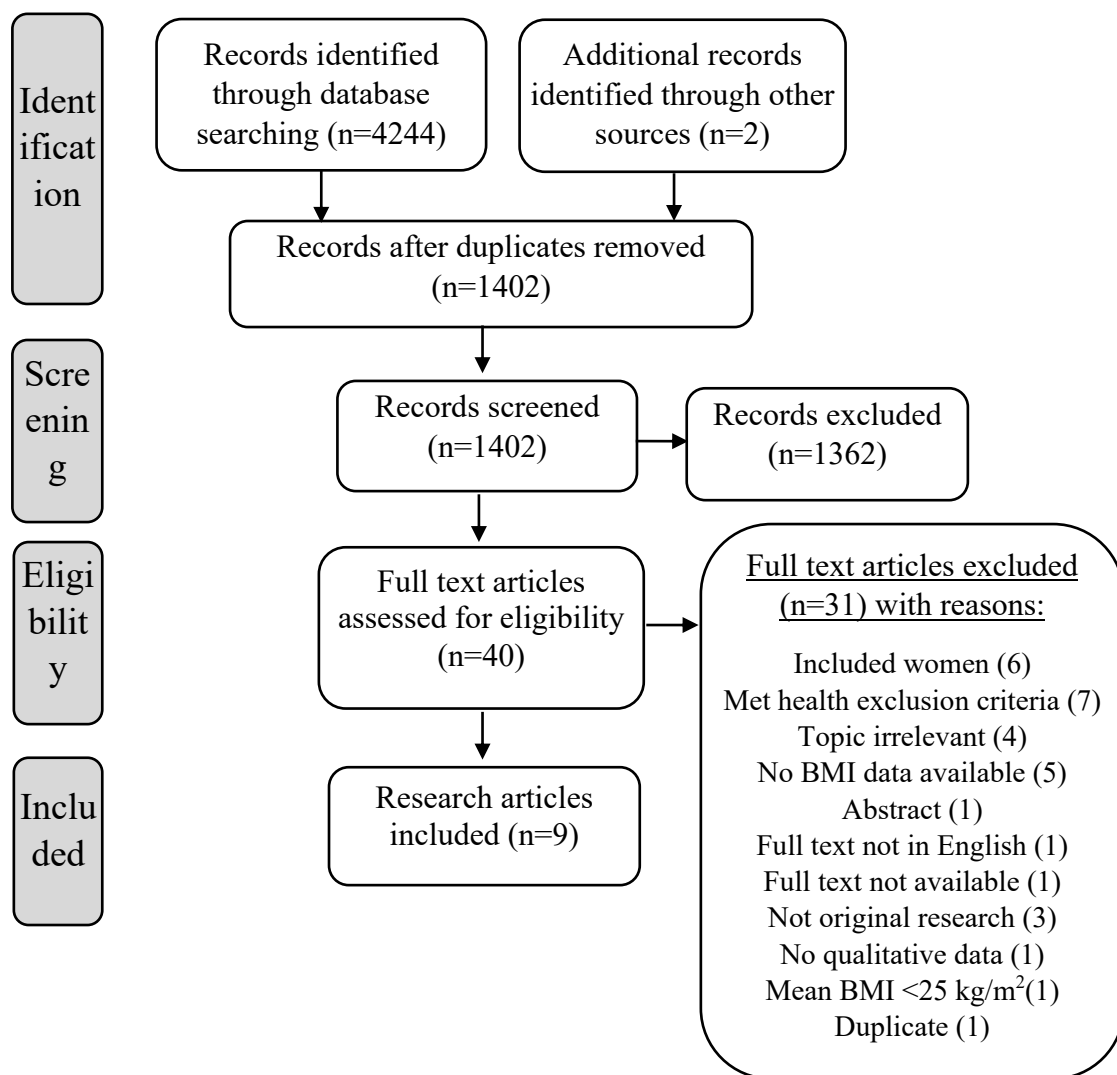
Research articles were eligible for inclusion if they were of qualitative or mixed methods design. They were eligible if they were regarding men's views of diet and exercise for weight loss or views of weight loss programmes and interventions. Samples included men of any race or ethnicity which had a mean BMI  $\geq 25$  kg/m<sup>2</sup> and mean age 18–65 years.

#### *2.2.1.2 Exclusion Criteria*

Exclusion criteria included: any autoimmune, cardiac, renal, metabolic, respiratory disease; cancer; obesity surgery; mental illness; people with intellectual disabilities; recovering alcoholic or illegal drug users; full text unavailable or not published in English; articles that were an abstract, poster, not original research, or if they were systematic reviews. Research articles that had included participants other than eligible men (e.g. female partners) were excluded. A proportion of research articles included in this review were regarding qualitative studies that had been conducted with a subset of men who had taken part in a male weight-loss intervention or programme. Where BMI and age data were only available for the wider intervention sample, providing this met the inclusion criteria and did not meet exclusion criteria the qualitative study was included.

### 2.2.2 Data extraction and screening

The citation screening process is illustrated in Figure 6 below. Database searching yielded 4244 citations. The PhD student (KH) conducted all database searching and citation sorting and was involved in every stage of literature screening and data analysis. The 4244 citations that were retrieved from electronic database searching were uploaded into Endnote and filtered twice for duplicates; first they were filtered electronically using Endnote software, and second they were screened manually by the PhD student (KH). The first stage of citation screening was to read the titles of citations. These were screened for relevance based on the inclusion and exclusion criteria that had been developed by the PhD student (KH) and her supervisors (MC, JA, LH). Next, the abstracts of the research articles that had not yet been excluded were read and screened for relevance by the PhD student (KH). After title and abstract screening, 38 research articles remained and the full texts of these were read and screened for inclusion. Full texts were read independently by two reviewers (KH and MC) and any differences were discussed with reference to the inclusion and exclusion criteria, until agreement was reached as to which articles should be included and which should be excluded. As a result of this process, seven research articles were identified for inclusion in the literature review. The reference lists of the seven research articles were screened for any additional relevant citations. The reference lists were screened first by title of citation, then by abstract, and then by reading the full text. From this process a further two articles were identified for inclusion. In total, nine articles were included in this review. Where data were missing, study authors were contacted via email.



**Figure 6** PRISMA flow diagram for Literature Review 1

### 2.2.3 Analysis

The data analysis strategy used for this literature review was a thematic analysis which was guided by the work of Thomas and Harden (2008) who suggest that this occurs in three distinct stages; coding, development of descriptive themes, and development of analytic themes. The first stage of coding was done line-by-line on hard copies of the included research articles by the PhD student (KH). This step was followed by the development of descriptive themes. The codes that had been generated were compared



for similarities and differences and were then organised into descriptive themes which are referred to as sub-themes throughout this literature review. These sub-themes were written up in a report with quotations from the included research articles to support descriptive themes and discussed by the PhD student with her supervisors. The sub-themes captured the overall meaning behind the codes from which they were developed; the codes and sub-themes were closely linked to the data. Finally, the analytic themes, which are referred to as themes throughout this literature review, were developed. The themes were developed by re-organising the sub-themes and exploring how the sub-themes were related to one another. The themes conceptualise the findings of the data in a new way. An example of some of the codes and two of the descriptive themes that were developed throughout the data analysis process, and how they relate to the analytic themes, are presented in the table below (Table 6).

**Table 6** Example of codes, two of four sub-themes and one theme developed during analysis process for Literature Review 1

<b>Theme 2: “Being a man”</b>	
Sub-theme 5: “Being supported”	Sub-theme 6: “Negotiating masculinity”
<p>Example of codes developed:</p> <p>Responsibility, encouraging, make changes together, facilitative (Maclean et al., 2014)</p> <p>Influence of partner, partners manage their diet, care-giver, diet provided by partner, being cared-for, family support, (Mallyon et al., 2010)</p> <p>Female influence, power, women, common goals (Martinez et al., 2012)</p> <p>More human contact desirable, feedback as helpful, personalised feedback desired, coach not peer support desired (Morgan et al., 2011c)</p> <p>Email feedback valued, need for support, the want to meet with others (Morgan et al., 2011e)</p> <p>Personalised support, weight loss with colleagues, exercise with other men, identify with other men (Sabinsky et al., 2007)</p>	<p>Examples of codes developed:</p> <p>Training not weight loss, feel part of football club, justify actions, fitter not thinner, improved health as side effect, protect masculinity (Hunt et al., 2013)</p> <p>Part of club, enhance masculinity, proximity to club – overcome barriers, FFIT not for women. (Hunt et al.,2014)</p> <p>Food is partner’s responsibility, becoming the experts, mastery, hegemonic masculinity, attribute blame to partner, traditional gender roles in household, depend on partner. (Maclean et al., 2014)</p> <p>Friends, food and social life, social cues around food, gender roles, dieting for science, technology with weight loss, diet provided by women, being cared-for (Mallyon et al., 2010)</p> <p>Norms, masculinity threats, acceptable behaviour for men, avoid feminine food, masculinised bodies, body like machinery, identity, health vs weight (Sabinsky et al., 2007)</p>

The themes and sub-themes were discussed at length by the PhD student with her three supervisors (JA, MC, LH), and were re-worked until all members of the research team were satisfied that they accurately represented and synthesised the findings of the included research articles.

#### 2.2.4 Quality assessment

To avoid researcher bias, and to critically assess the quality of the included research articles, the CASP qualitative checklist (CASP, 2018a) was used (Appendix 2) in conjunction with the JBI checklist for qualitative research (Lockwood, Munn and Porritt, 2015) (Appendix 3), in the analysis process. Two appraisal tools were used instead of one to improve the quality of conclusions reached. The CASP checklist provided a more general overview of important considerations when appraising qualitative research, whereas the JBI checklist interrogated the research in greater depth and considered other aspects that are important to the quality of qualitative research. The quality of included literature was ranked as “low”, “moderate” or “high” based on the outcome of the CASP qualitative checklist and on the guidance received from CASP in personal correspondence with the PhD student.

The overall quality of the included research articles was mixed; the qualitative checklists used to appraise the quality of the included research articles can be found in Appendix 2 and 3. Five of the included research articles were deemed to be of high quality (Hunt et al., 2013; Hunt et al., 2014; Maclean et al., 2014; Mallyon et al., 2010; Martinez et al., 2012), and four research articles were deemed to be of moderate quality (Gray et al., 2013; Morgan et al., 2011c; Morgan et al., 2011e; Sabinsky et al., 2007). None of the included research articles were considered to be of low quality. A strength among some of the research articles was that they included an element of reflexivity (Morgan et al., 2011e; Maclean et al., 2014; Hunt et al., 2013). One of the high-quality research articles also discussed data saturation (Hunt et al., 2013) which enables the reader to understand how the sample size was determined. A further strength, discussed among most research articles, was the use of multiple researchers to assist with data

coding and analysis (Morgan et al., 2011e; Gray et al., 2013; Hunt et al., 2013; Hunt et al., 2014; Martinez et al., 2012; Morgan et al., 2011c; Sabinsky et al., 2007; Mallyon et al., 2010). This is an important aspect of trustworthiness because it helps to mitigate against the impact of one researcher's biases on the conclusions drawn if multiple researchers are used (Lincoln and Guba, 1985). One important feature missing from one research article was the clear presentation of themes (Morgan et al., 2011c). A further weakness identified in two research articles was the lack of context provided with verbatim quotes (Morgan et al., 2011c; Mallyon et al., 2010) and one research article used quotes which were predominantly from only one of the four focus groups that the research team conducted (Martinez et al., 2012). This therefore provided ambiguity as to how the results related to the sample as a whole. A limitation common to all research articles included in this review was the absence of information about how the researchers were culturally or theoretically located in their approach to undertaking qualitative research. The omission of this information limits the ability of a reader to understand how the researchers' own biases and perspectives may have influenced data collection or analysis. Two research articles (Sabinsky et al., 2007; Morgan et al., 2011e) failed to discuss obtaining ethical approval. This was considered a substantial weakness because ethical approval to conduct research is required to ensure the research risks and benefits have been adequately considered and controlled, as per the Declaration of Helsinki (World Medical Association, 2001). One research article did not explain how the interview data had been organised or analysed, therefore, the quality of the data analysis that had been conducted is unknown and the conclusions drawn could be of questionable quality (Sabinsky et al., 2007).

## 2.3 Results

The nine research articles included in this review (Table 7) were based on research studies conducted in the UK (4), Australia (3), USA (1) and Denmark (1); were published between 2007 – 2014; and included the views of 237 men. Five studies had used focus groups (Gray et al., 2013; Hunt et al., 2014; Maclean et al., 2014; Martinez et al., 2012; Sabinsky et al., 2007), five had used interviews (Gray et al., 2013; Hunt et al., 2013; Morgan et al., 2011e; Morgan et al., 2011c; Mallyon et al., 2010), two had used observations and field notes (Gray et al., 2013; Maclean et al., 2014), and one had used a qualitative questionnaire (Morgan et al., 2011c) as the data collection method. Following a thematic analysis of the research article results sections, two themes and six sub-themes were generated. The first theme was named '*A sense of commonality*' and included sub-themes '*Men like me*' and '*Humour*'. The second theme was named '*Being a man*' and included the sub-themes '*Making small changes*', '*Sustainable loss*' '*Being supported*' and '*Negotiating masculinity*'.

**Table 7** Table of research articles included in Literature Review 1

<b>Author, date</b>	<b>Sample characteristics:</b> <b>Country</b> <b>Age (y)</b> <b>BMI (kg/m<sup>2</sup>)</b>	<b>Study design</b> <b>Data collection</b>	<b>Methodology</b> <b>Analysis</b>	<b>Purpose</b> <b>Themes/</b> <b>Key findings</b>	<b>Quality* (high, moderate, low)</b> <b>Strength</b> <b>Weakness</b>
Hunt et al., 2013	UK Intervention participants age range 35 – 65 Mean BMI of intervention participants 34.5	Evaluation of FFIT pilot Mixed methods Semi-structured telephone interviews <i>n</i> 29	Constant comparison Indexing relevant data	Experiences and perceptions about a walking intervention and wearing a pedometer.  Themes: Pedometers as a technology for motivation, self-surveillance, and self-competition, regaining masculine capital and ideals through regaining fitness and losing weight, and bolstering masculine identities through occupancy of a valued masculinised space.	Quality: <b>High</b>  Strength: Interviews reached data saturation. Men recruited from wide range of SES backgrounds. Multiple researchers. Deviant cases included. Included unexpected themes.  Weakness: Self-selection bias to take part in interviews. Does not report age or BMI of qualitative participants. Did not interview intervention drop-outs.
Hunt et al., 2014	UK Age 35 – 65	Part of FFIT intervention 13 focus groups	Thematic approach “One Sheet Of	Explore programme “pull” and “push” factors.	Quality: <b>High</b>  Strength: Details analysis procedures. Multiple researchers used to analyse data. Included deviant

Hunt et al., 2014, <i>cont.</i>	Mean BMI 35.3	<i>n</i> 63	Paper” (OSOP) method	Themes: the “draw” of the football club/club setting, reasons for participating, and satisfaction with and acceptability of FFIT.	cases. Video and audio recorded to improve data analysis accuracy. Included deviant cases. Uses a model of behaviour (COM-B) to explain findings.  Weakness: Does not report age or BMI of qualitative participants. Self-selection bias.
Maclean et al., 2014	UK Age 35 – 65 Mean BMI at start of intervention 34.9	Part of FFIT intervention 9 Focus groups <i>n</i> 39 Observations Field notes	Thematic approach OSOP method	Explore perceived influences of female relatives on their eating behaviours.  Themes: Men’s descriptions of the central role of women in their eating practices and choices, men’s accounts of their experience of making changes to their former eating practices in relations to these women	Quality: <b>High</b>  Strength: Discusses researcher characteristics. Provides rationale for research design. Rigorous analysis and inclusion of deviant cases. Use of multiple researchers. Clearly identified themes. Video and audio recorded focus groups to improve accuracy. Discussed obtaining ethical approval and informed consent. Combined multiple sources of data (focus groups and observations). Reports data management strategies.  Weakness: Self-selection bias of participants. No weight, BMI or age information available about the men that took part in the focus groups. No rationale for sample size. Some focus group sizes below optimum size.
Mallyon et al., 2010	Australia Mean age 45 Mean BMI 31.6	Post-intervention qualitative study One or two semi-structured interviews each,	Grounded Theory Theories of masculinity	Explore men’s experiences of dieting  Findings: how to diet like a man, gendered dieting: science versus shopping, and doing	Quality: <b>High</b>  Strength: Relates findings to relevant theories. Rationale for study design. Considers reflexivity. Details analysis procedures. Multiple researchers used to analyse data. Included deviant cases.

Mallyon et al., 2010, <i>cont.</i>		<i>n</i> 8		other people's gender and social sabotage of men's dieting.	Clearly identified themes. Reports data management strategies. Discussed obtaining ethical approval.  Weakness: Research/researcher relationships not acknowledged. Does not report age or BMI of qualitative participants, these were obtained directly from author. Participants had completed a weight loss intervention and self-selected to take part in post-intervention interviews which introduces bias. Informed consent not discussed. Does not discuss how or why certain participants were selected to take part in interviews.
Martinez et al., 2012	USA Mexican immigrant men Mean age 41 y Mean BMI 28.4	Focus group study 4 Focus groups <i>n</i> 16	Inductive and deductive approach  Socio-ecological model	Perspectives on weight, lifestyle and associated health risks.  Themes: perceptions of weight, diet and physical activity; perceived barriers to healthy living; perceived facilitators to healthy living.	Quality: <b>High</b>  Strength: Objectively measured weight and height. Multiple researchers used to analyse data. Relates findings to relevant model of behaviour. Attempts to acknowledge impact of gender of researcher on data collection. Identified important findings within a potentially hard-to-reach minority group. Addresses issues relating to language and translation.  Weakness: Convenience sample. Poor focus group attendance. No justification for how many people were recruited
Gray et al., 2013	UK Age range 35 –	Part of FFIT process	Thematic approach to	Evaluate experiences of pilot football-based	Quality: <b>Moderate</b>  Strength: Explored experiences among those who



	65 BMI $\geq$ 27	evaluation 4 focus groups <i>n</i> 26 Interviews <i>n</i> 13 Observations	analysis Framework approach	weight loss intervention. Themes: group factors, programme components, points for future consideration and exit reasons.	did and did not complete FFIT. Details analysis process and steps taken to improve quality of analysis. Coding frame allowed for unanticipated themes Weakness: Appropriateness of qualitative methods to explore research question. Does not report age or BMI of focus group participants.
Morgan et al., 2011c	Australia SHED-IT sample characteristics: Mean age 35.9 Mean BMI 30.6 Men who took part in ‘internet’ group	Mixed methods  Part of RCT  Qualitative questionnaire <i>n</i> 12	Thematic analysis  Constant comparison method	To explore acceptability and satisfaction of the SHED IT study  Findings: Men valued the information session content and clarity, human contact was discussed more by those who were non-compliers, the website was a more useful resource than the booklet.	Quality: <b>Moderate</b>  Strength: Purposively sampled men who lost different amounts of weight.  Weakness: Sample size restricted due to funding. Relationship between researcher and research not acknowledged. No themes reported.
Morgan et al., 2011e	Australia Mean age 37 Mean BMI 30.4	Part of RCT  Semi-structured interviews  (face-to-face <i>n</i> 12, telephone <i>n</i> 7)	Thematic analysis  Constant comparison method	Perceptions and experiences of men who enrolled in SHED-IT  Themes: recruitment and appeal of recruitment materials, value of the	Quality: <b>Moderate</b>  Strength: Multiple researchers used to analyse data. Includes men from both trial arms. Considers impact of research on data collected. Considers researcher experience. Provides participant characteristics.  Weakness: No justification for sample size, does
Morgan et al., 2011e,	Men who took part in SHED-IT “internet” and				

<i>cont.</i>	control group			information session and weight loss handbook, and programme experiences.	not report reaching data saturation. Self-selection bias.
Sabinsky et al., 2007	Denmark Aged 25 – 44 Mean BMI of focus groups: 27.6 - 29.8	Focus group study 4 Focus groups <i>n</i> 13 Part-structured, part-unstructured interview guide	Coding framework devised before coding	Perceived motivations and barriers towards weight loss among men, some of whom had applied to be a part of a weight reduction programme.  Themes: motives and perceived barriers towards weight loss.	Quality: <b>Moderate</b>  Strength: Successfully recruited low SES men. Multiple researchers to analyse data. Clearly identified themes generated. Use of audio and video tape to improve accuracy. Included deviant cases. Provides some context to quotations.  Weakness: Failed to discuss ethical approval or informed consent. Poor turn-out for focus groups. Self-reported height and weight. No rationale for how many focus groups, focus group size or number of participants recruited.

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\* Quality rating of “high” “moderate” or “low” based on guidance received from CASP in personal correspondence to PhD student (KH)  
RCT – Randomised Controlled Trial

### 2.3.1 Themes

The table below (Table 8) presents the sub-themes that were developed as a result of the data analysis process, and indicates which sub-themes were generated from which research articles.

**Table 8** Sub-themes of Literature Review 1

	Quality* (low, moderate, high)	Sub-themes					
		Men like me	Humour	Making small changes	Sustainable loss	Being supported	Negotiating masculinity
Hunt et al., 2013	High	✓					✓
Hunt et al., 2014	High	✓	✓				✓
Maclean et al., 2014	High					✓	✓
Mallyon et al., 2010	High				✓	✓	✓
Martinez et al., 2012	High			✓	✓	✓	
Gray et al.,2013	Moderate	✓	✓	✓			
Morgan et al., 2011c	Moderate				✓	✓	
Morgan et al., 2011e	Moderate		✓	✓		✓	
Sabinsky et al., 2007	Moderate	✓	✓			✓	✓

\* Quality rating of “high” “moderate” or “low” used based on guidance received from CASP in personal correspondence with PhD student (KH)

### 2.3.1.1 Theme 1: *'A sense of commonality'*

The theme "*A sense of commonality*" was developed primarily as a result of the data analysis of the FFIT literature: four of the nine research articles included in this review were associated with the FFIT programme and interventions. Within this theme there were two sub-themes named "*Men like me*" and "*Humour*".

#### Sub-theme 1: "*Men like me*"

This sub-theme was based on literature of both high and moderate quality. It is primarily based on the findings from the FFIT research articles included in this review (Gray et al., 2013; Hunt et al., 2013; Hunt et al., 2014) as well as one other research article of moderate quality (Sabinsky et al., 2007). A sense of commonality seemed to be an important factor for men when considering joining a male weight loss group (Gray et al., 2013; Hunt et al., 2013; Hunt et al., 2014; Sabinsky et al., 2007), and men expressed a preference for exercising in groups that comprised of peers of a similar fitness level, physique and age. Men who took part in FFIT also valued the commonality they shared with the coaches delivering the programme (Hunt et al., 2014). Shared goals and interests, particularly sharing an interest in the same football club, and sharing weight loss experiences also brought men at the FFIT intervention groups together:

*"The good things was, straight from the start, we all had something in common with each other. Rather than being sixteen strangers, we'd all something in common, and that was the [football] club and a love for it."*

*(Hunt et al., 2014, p. 7)*

Additionally, it seemed that FFIT participants perceived themselves to be of similar fitness level and size to other participants, and therefore did not feel insecure or

inadequate compared to their peers (Gray et al., 2013; Hunt et al., 2013; Hunt et al., 2014). This had influenced their decision to join FFIT initially:

*“I’m no gonna join a gym or anything like that... [...] it just makes me aw kinda nervous, all these kind... you know, [...] you know wear all the gear and run wi’ their wee jogging bottles and stuff like that.”*

*(Hunt et al., 2013, p.62)*

This sub-theme highlighted the strong sense of commonality and relatedness that was important to men attending a weight management group, in particular among the men attending FFIT.

Sub-theme 2: *“Humour”*

This sub-theme is based largely on the moderate quality literature included in this review. This sub-theme is further weakened by the limited participant quotations provided some the included research articles to evidence their findings. Humour was important when attempting to engage men in weight loss. Humour acted as a means by which men could engage with each other during the weight loss interventions. The men participating in FITT enjoyed the humour and “banter” between participants (Gray et al., 2013; Hunt et al., 2014). This was intertwined with men’s experience of interacting with those who were involved with the specific Football clubs at which the FFIT sessions were being held; being present at the Football club was important to the men attending FFIT:

*“Wee bits of banter, round, and stuff that nobody else could have told you... you just felt as if you were interacting with the guys that were a part of [Club03]”*

*(Hunt et al., 2014, p6)*

Humour and light-heartedness were discussed very briefly as an important element to a weight loss group by men in Denmark (Sabinsky et al., 2007), however, this was immediately followed by comments regarding the need for the programme to also be “*serious and reliable*” (Sabinsky et al., 2007, p. 530). Humour was also a desirable aspect of a weight loss programme as discussed by the men who took part in the SHED-IT weight loss programme in Australia; use of humour in both the recruitment materials and delivery of the programme was appealing to men (Morgan et al., 2011e). This sub-theme identified how men were brought together through humour, which was an important component to them of a weight management group.

#### 2.3.1.2 Theme 2: ‘*Being a man*’

Within this theme there were four sub-themes of “*Making small changes*”, “*Sustainable loss*”, “*Being supported*” and “*Negotiating masculinity*”.

##### Sub-theme 3: ‘*Making small changes*’

This sub-theme included research articles that were mostly of moderate quality; as a result, this sub-theme is based on slightly lower quality evidence than other sub-themes in this review, and caution should be taken when interpreting results. Furthermore, this sub-theme is based upon three research articles and is one of the smallest sub-themes in this review. Small dietary changes were more acceptable to men than drastic changes which were more typically associated with women and crash dieting (Morgan et al., 2011e). Additionally, one of the research articles regarding the FFIT programme highlighted that the programme encouraged weight loss through gradual dietary changes (Gray et al., 2013). Men who took part in the SHED-IT study reported being able to

drink beer and lose weight, which was considered an appealing element to a weight loss programme, and not restrictive:

*“SHED-IT said you can have your beer and lose weight too.”*

*(Morgan et al., 2011e, p. e243)*

The small dietary and exercise changes that were encouraged by the SHED-IT study protocol were seen as feasible and effective. Similarly, in the USA, when small changes to meals were made in line with Mexican men’s cultural eating traditions, this facilitated healthy living and weight management (Martinez et al., 2012). This sub-theme encompassed men’s perceptions of what made a weight loss group or intervention effective and feasible. It included the types of types of dietary and lifestyle changes that were perceived as most acceptable or desirable to men; those that did not require alcohol abstinence or radical dietary changes.

#### Sub-theme 4: *‘Sustainable loss’*

This sub-theme was based upon findings from three of the included research articles and is one of two sub-themes to be based on this few research articles. Sustainability was an important factor in making weight loss interventions acceptable to men. The SHED-IT weight loss programme was perceived by study participants as sustainable and to be *“the opposite to those sorts of crash diets”* (Morgan et al., 2011e, p. e243). Men attending the SHED-IT weight loss programme reportedly valued the direct approach to weight loss such as using facts and equations (Morgan et al., 2011c). Furthermore the programme was considered to be flexible and non-intrusive which encouraged participant recruitment and adherence (Morgan et al., 2011e). The same sample of men

also viewed slimming groups as ineffective for maintaining or facilitating weight loss and liquid meal replacement drinks were seen to be effective but unsustainable:

*“You couldn’t drink shakes for the rest of your life”*

*(Morgan et al., 2011e, p. e244)*

One study among Mexican Immigrant men reported how study participants perceived that physical activity played a role in health, weight loss and sustainable weight control. The men, who were employed in manual labour jobs, perceived the nature of their work meant this was also a way to burn calories:

*“We work in the sun and we know that in one or two hours...you burn it! You burn those calories immediately!”*

*(Martinez et al., 2012, p. 494)*

Men saw a lack of time for exercising as a barrier to weight loss (Morgan et al., 2011e) and suggested that opportunities for physical activity provided in the workplace would encourage and enable sustained exercise. This theme focused on the men’s negative perceptions of traditional weight loss groups and the important role they thought being physically active played in weight management.

#### Sub-theme 5: *‘Being supported’*

The sub-theme *“Being supported”* was the largest sub-theme developed during this review; it is based upon the findings from six of the nine included research articles. This sub-theme is founded upon a mixture of high and moderate quality literature. For this reason, a greater proportion of this sub-theme used the higher quality literature to evidence and illustrate the key findings and concepts. Men’s female partners were seen



to have a pivotal role regarding diet, because although men were prepared to make dietary changes to facilitate weight loss, it seemed that it was often their partner's responsibility to implement that dietary change in the home (Maclean et al., 2014; Mallyon et al., 2010). Men found it easier to adhere to their diet if their partners also dieted, and men framed their partners as having a key role in the home regarding their nutrition and subsequently, their weight (Maclean et al., 2014; Martinez et al., 2012).

*“The woman is the one that sometimes...the one that gets us chubby.”*

*(Martinez et al., 2012, p. 494)*

In fewer instances, men framed their female relatives as hindering their efforts: Men noted that their partners and mothers would decide what was eaten, how much food was prepared, and had *“absolute power in the kitchen”* (Martinez et al., 2012, p. 494). They believed their own knowledge or perceptions about healthy food were not influential, because they did not make meal choices for themselves within the home (Martinez et al., 2012). Some men felt *“lucky”* to have the support of their wives (Maclean et al., 2014, p. 129) and a sense of being supported was key to enabling men to make dietary and lifestyle changes:

*“my wife is a real Trojan as far as meals and that sort of thing are concerned, because she knows how to cook and she does it all for me, she doesn't have to, but she does”.*

*(Mallyon et al., 2010, p. 337)*

Other forms of weight loss support, such as personal counselling sessions, peer support, group support, general human contact and weight loss instructor support were all seen as desirable and important by male participants (Morgan et al., 2011c; Morgan et al., 2011e; Sabinsky et al., 2007). This theme focused on the influence that partners, peers

and professionals could have on men which could facilitate weight loss. A variety of social contacts were discussed; however, a key feature of this theme was the positive perception that men had regarding the influence of their partner on their dietary intake and weight loss success.

#### Sub-theme 6: *'Negotiating masculinity'*

The final sub-theme of the theme was titled "*Negotiating masculinity*" and the evidence for this theme comes almost exclusively from the high quality research articles.

Furthermore, this theme contained the greatest number of high quality research articles as references, compared to other sub-themes. Therefore, the reader can interpret this theme with confidence.

Men explored the topic of dieting or dietary change in relation to their masculinity, discussing a desire for a lean body, a lean girlfriend, popularity and a better job (Sabinsky et al., 2007). However, talk about dieting or weight loss was seen as "gay", vain, un-cool or feminine (Sabinsky et al., 2007; Mallyon et al., 2010):

*"... it's just a little too un-cool to have a need for slimming. That's something women are talking about..."*

*(Sabinsky et al., 2007, p. 528)*

Weight loss diets were framed as something that contravened traditional male eating habits by including little or no meat, no alcohol and "*green fodder*" (Sabinsky et al., 2007, p. 529). It was simply "*not acceptable for them [participants] to prefer a carrot for a piece of cake or a big piece of meat*" (Sabinsky et al., 2007, p. 529). Men felt obliged to defend their masculinity while participating in the diets, in one instance by framing it in terms of "*science*" (Mallyon et al., 2010):

*“I always explain it’s a research project cause I want people to know that I’m not going on a diet because God! That’s vanity! So I say it’s a research project, I’m doing it for science.”*

*(Mallyon et al., 2010, p. 336)*

It should be noted that men felt able to talk openly about taboo issues such as dieting behaviours and weight loss experiences with other members of FFIT, without damaging masculinity (Hunt et al., 2014). Taboos about weight loss spilled over into physical activity, with men suggesting that the focus of this should be on improving fitness rather than losing weight (Sabinsky et al., 2007). This sub-theme encompassed how men framed dieting and their weight loss in relation to masculinity. It identified how men felt constrained to discuss typically feminine issues, such as dieting, in the presence of other men, and how public performances of gender were a barrier to making healthy dietary choices.

## 2.4 Discussion

### 2.4.1 Discussion of literature

This is the first review to thematically synthesise qualitative literature specifically surrounding male weight loss among otherwise-healthy overweight and obese men (BMI  $25 \geq \text{kg/m}^2$ ). This discussion will compare the findings generated from this review in relation to other literature not included in the review; this includes articles that were retrieved during database searching however were screened out due to meeting exclusion criteria. The themes generated were “*A sense of commonality*” and “*Being a man*”. These themes predominantly related to masculinity, sustainable and successful weight loss, and referred to the internal conflict men may experience between being masculine and being healthy. Regarding weight loss groups and interventions, this

review found that men generally had positive experiences of gender-sensitised or male-only weight loss interventions such as FFIT and SHED-IT (Morgan et al., 2011c; Morgan et al., 2011e; Hunt et al., 2014; Hunt et al., 2013; Gray et al., 2013). These groups included an element of camaraderie, employed a non-threatening approach, and encouraged small and sustainable lifestyle changes. Men typically perceived commercial weight loss groups to be ineffective or feminine, and it is known men can be reluctant to attend these types of groups (Sherrington, 2015). The development of a “Weight Watchers at Home” programme in Australia was reported to be well received by a sample of men in 2008 (Broom and Dixon, 2008); this approach allowed men to lose weight privately at home, thus removing men’s need to attend a community-based weight loss group and be seen as publicly attempting to lose weight. Evidence suggests that weight loss groups should be designed differently for men and women (Robertson et al., 2016) and a gender-sensitised approach seemed very well received by these study participants.

A key finding of this review, which was explored in the theme “*A sense of commonality*”, was the keenness of men to attend a weight loss intervention with other men they could relate to; in physical likeness, socially and culturally. This theme could be interpreted with confidence as it was generally based on high quality FFIT literature, however a caveat is that it may not be transferable to other contexts as was based primarily on Scottish men’s experiences in a football setting. Within the FFIT research articles, recruitment was limited to men with a BMI  $\geq 27$  kg/m<sup>2</sup> in the pilot study or BMI  $\geq 28$  kg/m<sup>2</sup> in the main study and non-intervention delivery of FFIT (Gray et al., 2013; Hunt et al., 2014). This brought men of a similar body shape and size together and excluded other, leaner men that study participants may have consider an “Adonis” (Bunn et al., 2016). This protected men from feeling insecure at being surrounding by

other men who may have embodied physical aspects of masculinity that they did not (Bunn et al., 2016).

Another key finding of this review which was based on a number of research articles of which most were rated as high quality and was explored in the sub-theme “Negotiating masculinity”, was that men frame their weight loss behaviours in such a way that they protect or enhance their masculinity (Hunt et al., 2013; Hunt et al., 2014; Mallyon et al., 2010). For men, a larger body is typically considered to be more masculine than a slim body (Monaghan and Malson, 2013). Men may be drawn to weight loss groups that do not compromise their masculinity, such as those which focus on physical activity and fitness (Hunt et al., 2013) rather than dieting or weight loss (Broom and Dixon, 2008; Sabinsky et al., 2007). It has been noted that *“rejecting what is constructed as feminine is essential for demonstrating hegemonic masculinity in a sexist and gender-dichotomous society”* (Broom and Tovey, 2009, p. 16). Although the men in this review framed physical activity as an effective behaviour to manage weight, other research has found that some men reject this premise due to the associated gain in muscle mass from exercising (Monaghan, 2008).

Men discussed the range of influences that female partners had on their food intake. This review found that women’s control of the home food environment was perceived by men to influence their weight loss efforts (Martinez et al., 2012; Maclean et al., 2014). This finding has also been documented in other qualitative research where, within the home, the female partner typically takes on the role of housewife, which involves providing care and cooking meals for the family (Lupton, 2000); with some research dating back to 1982, highlighting this long-established tradition (Murcott, 1982). Quantitative literature has found a positive association between the health behaviours of one person upon their partner (Jackson, Steptoe and Wardle, 2015), but also an association between men being married and gaining weight (Jeffery and Rick,

2002; Sobal, Rauschenbach and Frongillo, 2003). It seems that men report that female partners have control over their food within the home environment, therefore it also seems logical that partners should be considered in weight loss guidelines and policy. It was recently noted that the *“need to understand the contextual influences that subvert, neutralise, intensify or otherwise influence interventions is increasingly well recognised, yet the role that context plays in the design and evaluation of health and social care interventions has remained understudied.”* (Raine et al., 2016, p. 106) and this statement is confirmed, and reiterated, by the findings of this review.

One of the sub-themes of this review was titled *“Humour”*. Other research focusing on how men navigate discussions surrounding healthcare found that humour can be used by men to jokingly discuss health issues without appearing to have a concern for health, and thus feel or appear emasculated (Williams, 2009; Verdonk, Seesing and de Rijk, 2010). This review has found that humour can be used as a tool to enable men to form bonds with other men and to engage in weight loss behaviours or interventions. The atmosphere created within the FFIT sessions, and the use of humour, also enabled participants to distance themselves from masculine activities such as excessive alcohol consumption, and to discuss body image and weight with their male peers, which would otherwise be seen as damaging to masculinity (Courtenay, 2000). While this sub-theme is based only on the literature from four research articles, three of which were rated as moderate quality, it is more geographically diverse, and does suggest that humour should be considered as a key component of a male-only weight loss group or intervention because it may facilitate the recruitment of men who are otherwise reluctant to engage in weight-loss behaviours.

## 2.4.2 Limitations of Literature Review 1

While this review excluded some research articles that may have been of relevance to male weight loss because they included female participants, this process ensured that the findings of the literature review were contextualised fully to male weight loss experiences. Additionally, the inclusion of only papers in English language may have restricted the findings of this review. Grey literature has been defined as “literature that is not formally published in sources such as books or journal articles” (Cochrane Collaboration, 2011). Grey literature was not included in this review and therefore some additional research articles of relevance to this topic may have been missed. Further limitations include the potential for researcher bias upon the themes and findings generated, the small number of research articles included in the review, and the mixed quality of literature included in the review which could impact overall credibility of conclusions. Steps taken to minimise this risk included the use of multiple researchers and the use of direct quotations to illustrate key points.

## 2.4.3 Implications for research and practice

This novel review synthesised the findings of other qualitative research. As a result of this literature review, the following can be affirmed: weight loss programmes and interventions for men should include humour, should foster a sense of commonality, and should promote a weight management strategy that is sustainable day-to-day. This literature review also identified a profound need for social relationships to be adequately addressed in the research design of male weight loss interventions, since female partners were described as highly influential upon men’s weight-related behaviours in both positive and negative ways. Many of the included research articles focused on men’s

experience of dieting in the context of a research intervention. Future research may seek to explore men's experiences of dieting and physical activity for weight loss or weight management among men in the community who have not engaged in such programmes, to identify the perceptions these men have regarding their weight. There is also limited literature on the perspective of those providing weight loss support to men, such as men's partners. Given the substantial influence that men report women have over their eating behaviours, future research surrounding the influence of women on male weight loss behaviours would contribute important information to this research topic.



## **Chapter 3:** **How family members influence male weight loss: A review of qualitative and quantitative research**

The literature review presented in Chapter 2 identified the influential role that men's partners played on their dietary intake, physical activity and weight loss behaviours. To explore this finding in greater depth, a second literature review was undertaken to identify how weight loss in conjunction or with the support of a family member influenced changes in anthropometry (weight, waist circumference) and how family members were perceived to influence weight loss efforts. This review is referred to as Literature Review 2 throughout this thesis. This review contains three smaller reviews of qualitative and quantitative literature. As with Literature Review 1, this is not classified as a systematic review as did not exhaust all available literature including grey literature, however it is a review that utilized systematic methods in the searching, sorting and analysis process. This review was registered with PROSPERO.

### **3.1 Introduction**

It is well established that the relationship status of a person, and changes to this relationship status, have an impact upon weight and weight loss; there is a clear trend towards weight gain in men who become married, and weight loss in men who become divorced (Sobal, Rauschenbach and Frongillo, 2003; Mata, Frank and Hertwig, 2015). Research conducted in the UK has found that married men and women are less likely to experience long-term illnesses compared to people who are single or who have previously been married (Arber, 1997). Previous qualitative research has found that the influence or support from family members can impact men's eating and activity behaviours (De Souza and Ciclitira, 2005). The Royal College of Physicians outlines a

role for general practitioners in “*recognising how family issues are relevant to health behaviour*” (Wass and Finer, 2013, p. 41); thus, identifying family members as an influence on health behaviours. A recent systematic review was conducted that focused on the management of obesity in men (Robertson et al., 2014). The review concluded that the evidence regarding the impact of partners, family members and friends on men who were participating in weight loss programmes was inconsistent (Robertson et al., 2014). The review also found that men’s friends could motivate and demotivate men to lose weight, that partners could be supportive to men, but that the social role that food played in people’s lives was a barrier for reducing dietary intake or engaging in healthier eating behaviours (Robertson et al., 2014). The review by Robertson (2014), as discussed in Chapter 2, was limited to people with a BMI  $\geq 28\text{kg/m}^2$ . Thus, there remains a literature gap regarding what influence family members may have on overweight and obese (BMI  $\geq 25\text{ kg/m}^2$ ) men’s weight loss efforts, and how these influences are perceived by men. Two older systematic reviews found that spouse involvement in a weight loss programme enhanced the amount of weight lost among the intervention participant (Black, Gleser and Kooyers, 1990; Glenny et al., 1997). A more recent systematic review explored family member involvement in weight loss interventions; however, the findings of the review may have limited transferability to a male weight-loss context because the research articles reviewed contained a high proportion of female participants (McLean et al., 2003). To the best of the PhD student’s knowledge, no other reviews exploring social support for weight loss have been conducted since the aforementioned review. The purpose of Literature Review 2 was to update the current evidence base on the effect that family members have on male weight loss, the impact of family member support on male weight loss, and to understand how men perceive family members to influence their dietary, physical activity or weight loss behaviours. This review included both qualitative and

quantitative literature so that the questions regarding effect sizes as well as perspectives could be answered by this review. By including both qualitative and quantitative literature, the subjective and objective data regarding this topic could be analysed and included.

There were two aims to this literature review: The first aim was to identify how family members influence weight loss in overweight and obese men. The second aim was to explore overweight and obese men's perceptions about the influence their partners and children have upon their weight. Using the Population, Intervention, Comparator and Outcome (PICO) framework, the following research questions were developed:

- i) What influence do partners or children have on overweight or obese men's weight or BMI, in a joint lifestyle intervention versus a control group, usual care or no intervention?
- ii) What influence do men perceive family members to have on their weight loss?

## 3.2 Methods

This review was registered with PROSPERO (ID CRD42017081271) before any database searching had taken place. This review followed the PRISMA guidelines (Appendix 6). The PRISMA guidelines were used to improve the transparency and detail regarding how the review was conducted and reported. The PRISMA flow diagram (Figure 7) shows how records were screened and then either included or excluded in this literature review. This process is discussed in more depth in the section titled "Data Extraction and Screening" on page 78.

### 3.2.1 Search strategy

Literature on a similar topic to the review was identified and read for key subject headings and keywords to develop search terms. The Medical Subject Headings (MeSH) thesaurus was also explored for relevant search terms. The search terms were trialled and modified to improve the relevance of articles retrieved when input into an electronic database. Four electronic bibliographic databases were systematically searched: PubMed, PsycINFO, British Nursing Database and CINAHL. A rationale for why these databases were used is provided in the previous chapter (Chapter 2, page 45). Unlike Literature Review 1 which employed searches of both MEDLINE and PubMed, MEDLINE database was not searched in Literature Review 2. This is because all MEDLINE citations are indexed in PubMed, and so to avoid the unnecessary duplication of citations retrieved, and because PubMed is a larger database than MEDLINE, only PubMed was searched. These databases were selected to ensure a broad range of literature was searched. Search terms were focused around five core topics: family members, weight, men, diet, and physical activity. Search terms with truncations and quotation marks were used to ensure relevant literature was not missed, and quotation marks were used to improve the specificity of searching. The search terms in each column were searched together, combined using the Boolean operator “OR”. Search terms were input into the databases, and searches were limited to the abstracts of articles (Appendix 7). Search terms were grouped by topic, which resulted in five categories (see Table 9) being input into the databases. Once each column had been searched for separately, they were combined using Boolean operator “AND”. Following this, the date restrictions from 01/01/1999 to the date that the searches took place were applied. Database searching took place between the 17/11/2017 and 20/11/2017. Database searching took place after Literature Review 1 had been written, and after all

of the PhD research study data collection had taken place and while the data analysis was in progress. Two searches per database were conducted and search terms combined as follows:

- 1) Columns 1 AND 2 AND 3 AND 4
- 2) Columns 1 AND 2 AND 3 AND 5

**Table 9** Search terms derived for Literature Review 2

1	2	3	4	5
Famil*	weight	Male*	Diet*	Exercis*
Partner*	Slimm*	Men	Food	“Physical activity”
Child*	Obes*	Man	Calori*	“Physically active”
“Social support”	Overweight	Men’s	Nutrition*	Sport*
Couple*	Health	Man’s	Eat*	Aerobic
Spous*	Lifestyle	Father*	“Portion size”	Anaerobic
wives		Dad*		training
wife		Husband*		gym
Relative*		Boyfriend*		Fit*
Marri*				
Kid*				
Parent*				

### 3.2.2 Inclusion Criteria

Research articles were eligible for inclusion if they were of a qualitative, quantitative or mixed-methods study design. Samples could include men of any race or ethnicity with a

mean BMI  $\geq 25$  kg/m<sup>2</sup> and mean age 18–65 years. An upper age limit was introduced since it was hypothesised that older adults may experience different barriers and facilitators surrounding dietary intake, physical activity and weight loss compared to younger adults due to age-limiting changes in bone density, appetite and muscle mass (Jafari-Nasabian et al., 2017). The required outcome measure for the quantitative literature was male weight loss among joint weight loss interventions (father and child, male and partner, male and parent). Qualitative literature was sought that explored how men perceived family members to influence their weight and weight loss behaviours.

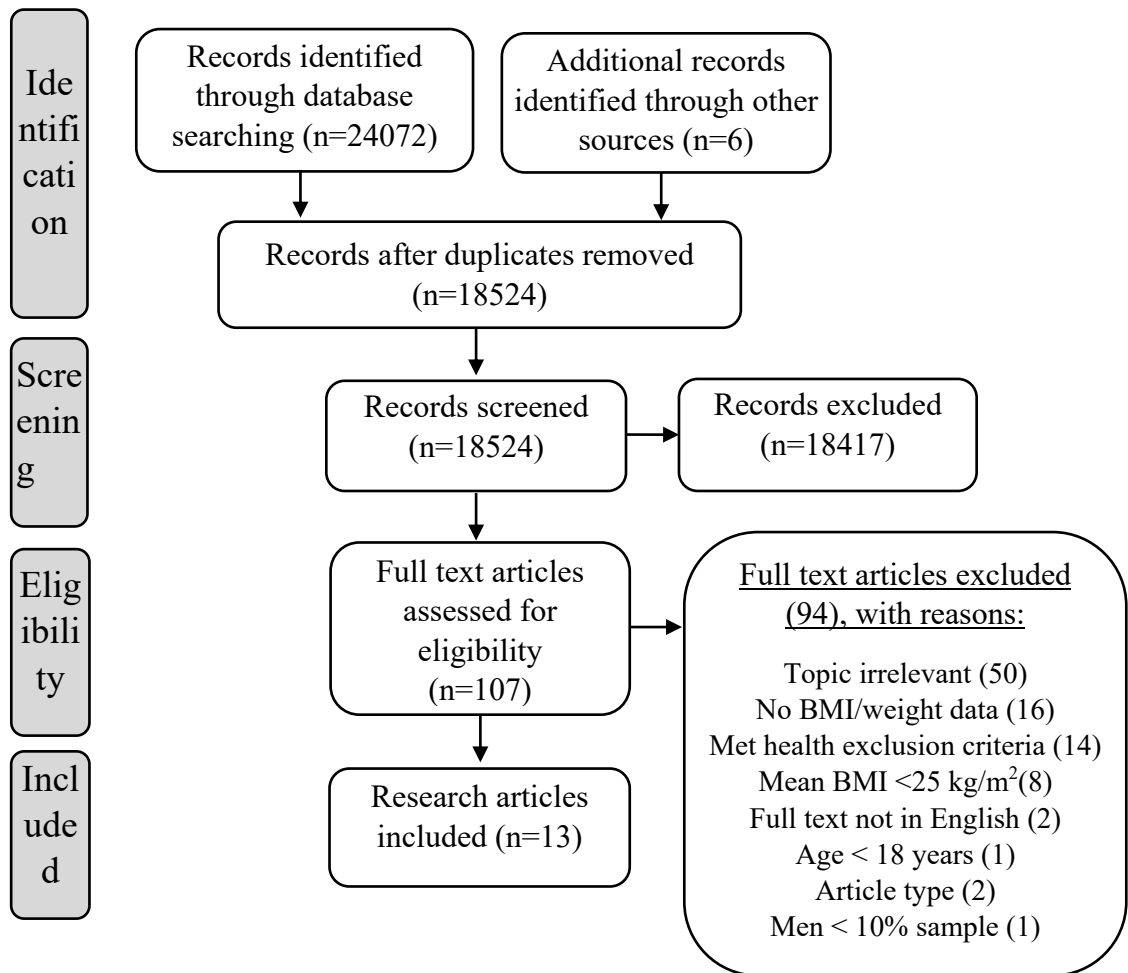
### 3.2.3 Exclusion Criteria

Research articles were excluded if participants had: any autoimmune, cardiac, renal, metabolic, respiratory disease; cancer; undergone obesity surgery; any mental illness; an intellectual disability. Articles were also excluded among recovering alcoholic or illegal drug users, and if the topic was family weight loss intervention where fathers were not engaged in weight loss. The exclusion criteria regarding health and disability were introduced so that the findings of the review could be more broadly transferable to large scale intervention or health promotion campaign that targets the healthy overweight or obese male population, without undue risk to health. Citations were also excluded if the full text was not available in English; if it was an abstract only, a poster, not original research or was a systematic review. Articles where less than 10% of participants were male were also excluded due to lack of relevance to men.

### 3.2.4 Data Extraction and Screening

Database searching yielded 24072 citations. As with Literature Review 1, the PhD student (KH) also conducted all database searching and citation sorting and was

involved in every stage of literature screening and data analysis for Literature Review 2. The citations that were retrieved from database searching were uploaded into Endnote and filtered twice for duplicates; first, electronically using Endnote software, and second, manually, also in Endnote, by the PhD student (KH). The titles of citations were screened for relevance by the PhD student based on the inclusion and exclusion criteria that had been developed by the PhD student and her supervisors (MC, JA, LH). It is possible that a large number of citations were retrieved because search terms were very broad, however this was done deliberately in order to capture potentially relevant articles through the database searching process. The abstracts of the remaining citations were screened for relevance by the PhD student. Following this, the full texts of the remaining citations were screened for relevance independently by the PhD student (KH) and one of her supervisors (MC). Following this screening process, seven research articles were identified for inclusion. The reference lists of the included articles were read and screened by the PhD student. The reference lists were screened first by title of citation, then by abstract, and then by reading the full text. Following this process a further six research articles were identified for inclusion. In total, 13 articles were included in this review (Figure 7).



**Figure 7** PRISMA flow diagram for Literature Review 2

Due to similarities in the research topic between Literature Review 1 presented in Chapter 2, and Literature Review 2, four research articles were screened and included in both reviews. A list of research articles included in each review is provided (Table 10) and research articles that appear in both reviews have been marked with an asterisk.



**Table 10** List of research articles included in Literature Reviews 1 and 2

<b>Research articles included in Literature Review 1 (Chapter 2)</b>	<b>Research articles included in Literature Review 2 (Chapter 3)</b>
Gray et al., 2013	Burke et al., 1999
Hunt et al., 2013	Burke et al., 2002
Hunt et al., 2014	Burke et al., 2003
Maclean et al., 2014*	Morgan et al., 2011b
Martinez et al., 2012*	Morgan et al., 2014
Mallyon et al., 2010*	Quattrin et al., 2012
Morgan et al., 2011c	Rodearmel et al., 2006
Morgan et al., 2011e	Faw, 2014
Sabinsky et al., 2007*	Maclean et al., 2014*
	Mallyon et al., 2010*
	Martinez et al., 2012*
	Sabinsky et al., 2007*
	Thomas, 2008

\* Research articles included in both Literature Review 1 and Literature Review 2

### 3.2.5 Analysis of quantitative data

The primary outcome measures of interest to this review were weight and BMI. Waist circumference was the secondary outcome measure. Data extracted from the quantitative research articles included; age, weight, BMI and waist circumference. A descriptive summary of quantitative results is followed by Tables 12 and 13 which details the reported changes in BMI, weight and waist circumference. Results will be presented and discussed by category: i) spouse-partner weight loss ii) parent-child weight loss.

### 3.2.6 Analysis of qualitative data

The analysis process for the review of qualitative literature was guided by the work of Thomas and Harden (2008) as in the previous chapter (Chapter 2). The results sections

from each of the included qualitative research articles were imported into NVivo software and coded line-by-line by the PhD student (KH). An example of how the results sections were coded is provided in Appendix 8. This step was followed by the development of descriptive themes by the PhD student. The codes and themes that were developed were closely linked to the data. The descriptive themes and quotations from research articles were written up into a report by the PhD student and disseminated to members of the research team. The themes were discussed by the PhD student with members of the research team until a consensus was reached, and it was agreed that the themes were a fair representation of the data. Finally, the analytic themes were developed. These themes were developed by exploring how descriptive themes were related, and by grouping like-themes together. This review presents six analytic themes that conceptualise the findings of the data in a new way. The table below (Table 11) provides an example of some of the codes that were used to develop two of the descriptive themes and one of the analytic themes for this literature review.

**Table 11** Example of codes, two descriptive themes and one analytic theme developed during the data analysis process for Literature Review 2

<b>Theme 5: “Difficulties in communicating needs while protecting family relationships”</b>	
Sub-theme: “Hinderance from family members”	Sub-theme: “Damage to relationships”
<p>Example of codes developed:</p> <p>Resistant to change, feeding, mothers, try to negotiate change, large portion sizes served, over-feeding by mothers, unhealthy partner behaviours (Maclean et al., 2014)</p> <p>Family unhelpful (Faw, 2014)</p> <p>Fault, blame, over-feeding by mothers, large portion sizes served (Mallyon et al., 2010)</p> <p>Food etiquette, acceptance of food provided, withholding comments, excessive portion sizes, feeding by females (Martinez et al., 2012)</p> <p>Interference, pressure to succeed (Thomas, 2008)</p> <p>Reluctance to lose weight until single, family food traditions, prioritise family time not exercise (Sabinsky et al., 2007)</p>	<p>Example of codes developed:</p> <p>Relationship expectations, threatened by change, conflict, disappointment (Maclean et al., 2014)</p> <p>Avoiding arguments, confrontation (Faw, 2014)</p> <p>Rejection of care, damage bond with female relative, feel like a disappointment (Mallyon et al., 2010)</p> <p>Difficult rejecting influences, can't complain, respectful, (Martinez et al., 2012)</p> <p>Others sabotage efforts (Thomas, 2008)</p>

### 3.2.7 Quality assessment

To assess the quality of the included research articles, the CASP checklist for qualitative research (CASP, 2018a) (Appendix 9), the JBI checklist for qualitative research (Lockwood, Munn and Porritt, 2015) (Appendix 10) and the CASP RCT checklist (Appendix 11) were used (CASP, 2018b). Two qualitative checklists were

used since the CASP checklist provides a more general overview of qualitative research design and the JBI checklist asks additional, in-depth questions about the qualitative research methodology employed.

### 3.3 Results

#### 3.3.1 Study design and summary of included literature

Thirteen research articles were included in this review; a summary of the included quantitative literature can be found in Table 12 and a summary of the included qualitative literature can be found in Table 13. The research included in this literature review included one study of mixed methods design (Burke et al., 1999), six qualitative research studies (Faw, 2014; Maclean et al., 2014; Mallyon et al., 2010; Martinez et al., 2012; Sabinsky et al., 2007; Thomas et al., 2008) and six quantitative research studies (Burke et al., 2002; Burke et al., 2003; Morgan et al., 2011b; Quattrin et al., 2012; Rodearmel et al., 2006; Morgan et al., 2014). The included research articles were based on research in Australia (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003; Mallyon et al., 2010; Thomas et al., 2008; Morgan et al., 2011b; Morgan et al., 2014), the USA (Quattrin et al., 2012; Faw, 2014; Rodearmel et al., 2006; Martinez et al., 2012), the UK (Maclean et al., 2014), and Denmark (Sabinsky et al., 2007). Research articles were published between 1999 and 2014. Among the quantitative literature included in this review, three research articles reported the findings of weight loss interventions for couples (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003), two research articles were on the topic of family-based weight loss interventions for overweight children which included parents and at least one child (Rodearmel et al., 2006; Quattrin et al., 2012), and two research articles were regarding weight loss interventions for overweight fathers which included their children (Morgan et al.,

2011b; Morgan et al., 2014). A decision was made to include the two research articles (Rodearmel et al., 2006; Quattrin et al., 2012) that focused on childhood weight loss among children at risk of obesity because it included fathers in the weight loss intervention. The childhood obesity research was included because it demonstrated the potential for this type of intervention to elicit weight loss among men. This decision made it more difficult to analyse the findings as a whole due to the diversity of included research, so instead results are presented separately. Since the literature on this topic was also scarce, a decision was made to be inclusive as to the types of research included in the review, providing it did not meet exclusion criteria. This was in order to obtain a greater understanding surrounding the effectiveness of different types of weight loss interventions that included men.

### 3.3.2 Quality appraisal of included literature

#### 3.3.2.1 *Quality of the included quantitative literature*

A summary of the quantitative literature is presented in Table 14. The quality of the included research articles was evaluated using the CASP RCT checklist and was ranked as “low”, “moderate” or “high” based on guidance from CASP received in personal correspondence. Seven research articles were included in the quantitative literature review, of which; two were of high quality (Morgan et al., 2011; Morgan et al., 2014), four were of moderate quality (Burke et al., 1999; Burke et al., 2003; Rodearmel et al., 2006; Quattrin et al., 2012) and one was of low quality (Burke et al., 2002) (see Table 12 and Appendix 11). A strength discussed among most of the included research articles was that participants had been randomised to the intervention groups. One study successfully blinded the assessors to participant group allocation (Quattrin et al., 2012), however, several other research studies had not successfully blinded all assessors to

participant group allocation which was considered a limitation because this had the potential to introduced researcher bias (Morgan et al., 2011b; Morgan et al., 2014). One research article did not discuss blinding assessors to the groups to which participants had been randomised (Rodearmel et al., 2006). A strength demonstrated by several research articles was that they reported exact p values and confidence limits (Rodearmel et al., 2006; Morgan et al., 2011b; Morgan et al., 2014; Quattrin et al., 2012). This, rather than stating whether a p value was above or below a given significance level, provides precise information as to the significance of the study findings and the significance of the change. The stronger studies also reported effect sizes (Morgan et al., 2011b, Morgan et al., 2014) which allows comparisons of effect sizes with other study results. One research article did not report numerical data regarding BMI or weight change (information was provided in a graph with no numerical data) and had incorrectly labelled the x axis of several graphs which was confirmed through correspondence with one of the study authors (see Appendix 12) (Burke et al., 2002).

The CONSORT 2010 Statement (Schulz, Altman and Moher, 2010) comprises a list of “minimum requirements” for the reporting of RCTs. One of the items on this checklist is that research articles should report how the sample size was determined and any calculations used to aid this decision. Some studies reported the power calculations that were used to estimate the minimum number of participants required to determine an effect size at a given probability (usually  $p=0.05$ ). Reporting these calculations aids the reader to determine whether a sufficient number of participants were recruited. Sample size calculations are important because they enable researchers to determine whether with their given sample size a statistically significant change is probable, and to reduce the risk of a type ii statistical error whereby a significant effect within a population is not detected although is present. A strength reported in several research articles was that

power calculations were used to estimate sample size (Morgan et al., 2011b; Morgan et al., 2014; Quattrin et al., 2012; Burke et al., 2003; Burke et al., 1999).

The use of objective measures of physical activity were reported in several studies (Morgan et al., 2011b; Morgan et al., 2014; Rodearmel., 2006); objective measures remove the “human error” element of self-reporting physical activity levels, are more accurate, and remove the potential for participants to intentionally or unintentionally misreport activity levels (Elley et al., 2003). Objective measures of physical activity can include pedometers, whereas a subjective measure could include a physical activity questionnaire. Participants were asked, in several research studies, to self-report their dietary intake. Objective measures of dietary intake are much more difficult to achieve; instead, nutrition research frequently relies upon dietary recall, food diary completion or food frequency questionnaire completion by participants which can have variable response rates or levels of accuracy (McNaughton et al., 2005).

The duration between the end of behaviour change intervention and follow up should be based on “*a clear understanding (or at least clear assumptions) of the rate and pattern of change*” (Craig et al., 2008, p.13). Without a sufficient duration between the end of the intervention and the follow-up assessment, it is therefore difficult to know the true cost-effectiveness of an intervention, or how long the behaviour change effect will last. Data regarding intervention follow-up was absent from many of the included research articles (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003; Quattrin et al., 2012; Rodearmel et al., 2006) and therefore the long-term effectiveness of these interventions remains unknown.

**Table 12** Summary of quantitative literature included in Literature Review 2, highest quality to lowest quality

Author, date	Country Couples' or parent-child weight intervention Sample size Age, years (SD)	Strengths	Weaknesses	Quality* (high, moderate, low)
Morgan et al., 2011b	Australia  Father and child weight loss intervention  <i>n</i> 53 fathers plus children  Age fathers: 40.6	Attempt to blind assessors. Anthropometric measures taken by trained staff. Objectively measured physical activity. Exact p values and confidence intervals reported. Effect size (Cohen's d) reported. Uses a flow diagram to show the movement of participants through the study to illustrate retention and explains reasons for non-completion. Reported that assessors were trained. Discussed sample size calculation and statistical power of study. Wide range of measurements taken relating to health. Discussed obtaining ethical approval, informed consent from adults and child assent to take part.	Self-reported dietary and activity levels included in analysis. 19 of 53 participants lost by the 6-month follow, up leaving 24 participants, yet states that needed 18 in each group at 6-month follow up based on analysis calculations. Does not report change in physiological measurements at end of intervention. No long-term follow up.	Quality: <b>High</b>



Morgan et al., 2014	<p>Australia</p> <p>Father and child weight loss intervention</p> <p><i>n</i> 93 fathers plus children</p> <p>Age fathers: 40.3</p>	<p>Objectively measured physical activity. Participants and assessors were blinded at baseline. Exact p values and confidence intervals reported.</p> <p>Detailed participant flow diagram to illustrate participants retention. Effect size (Cohen's d) reported. Uses a flow diagram to show the movement of participants through the study and explains reasons for non-completion. Reported that assessors were trained. Discussed sample size calculation and statistical power of study. Wide range of measurements taken relating to health. Discussed obtaining ethical approval, informed consent from adults and child assent to take part.</p>	<p>No long-term follow up. Use of questionnaires to assess dietary intake. Does not report change in physiological measurements at end of intervention.</p>	<p>Quality: <b>High</b></p>
Burke et al., 1999	<p>Australia</p> <p>Couples' weight loss intervention</p> <p><i>n</i> 34 men, <i>n</i> 34 women</p> <p>Age men: 29.1 (SD 6.2)</p>	<p>Use of multiple questionnaires to improve diet record validation. Discusses sample size calculation and statistical power of study. Reports changes in outcome variables separately for men and women. Discussed obtaining ethical approval and informed consent.</p>	<p>No information regarding how many couples included in focus groups, how people were selected for focus groups, or who was involved in the analysis process. Unclear whether ethical issues were addressed in focus group. Does not report who delivered the intervention to participants or who took physiological measurements. Does not report statistical</p>	<p>Quality: <b>Moderate</b></p>

Burke et al.,  
1999, *cont.*

significance (p value) of all physiological changes. Does not describe how participants were randomised.

Burke et al.,  
2003

Australia

Couples weight loss  
intervention

*n* 137 men, *n* 137 women:  
111 couples completed  
testing and 81 attended for  
follow-up.

Age men:  
low level group: 29.8 (SD  
8.7)

high level group: 30.9 (SD  
8.3)

Control group: 31.5 (SD  
9.5)

Successfully recruited a large number of couples (137 couples). Many measures of health were reported, three time-point measurements taken including 1-year follow up. Wide range of measurements taken relating to health. Discussed how participants were randomised. Discussed obtaining ethical approval and informed consent. Uses a flow diagram to show the movement of participants through study and explains reasons for non-completion.

Self-selection of participants; those motivated to join in. Results cannot be applied to wider community. Cannot be applied to couples living together more than 2 years. Limited behaviour changes at 12 months. Physical activity measured using a 7-day and 14-day recall and not objectively measured using a pedometer/accelerometer. Does not report statistical significance (p value) of all physiological changes

Quality:  
**Moderate**

Quattrin et  
al., 2012

USA

Family-based weight loss  
intervention

Quattrin et

Height and weight measured by trained professional, on calibrated equipment. Discusses sample size calculation and statistical power of study. Reported exact p values.

Results not presented separately for mothers or fathers. Weight change not reported. Estimated needed 105 to detect 85% power however only 96 families completed intervention. No follow-up

Quality:  
**Moderate**

al., 2012, <i>cont.</i>	<p><i>n</i> 96 parents plus their child in &gt;85<sup>th</sup> percentile for weight.</p> <p>24/96 fathers</p> <p>Age parents: 37.2 (SD 5.0) among intervention group, 36.4 (SD 5.0) among control group</p>	<p>Described how children were accessed. Described randomisation process. Parent and child weight measured by researcher. Uses a flow diagram to show the movement of participants through the study and explains reasons for non-completion. Discussed obtaining ethical approval and informed consent.</p>	<p>period included in intervention. Attempt to blind parents to randomisation group. Paediatricians blinded to intervention groups. No information on whether children obtained their activity and reduction of screen-time goals.</p>	
Rodearmel et al., 2006	<p>USA</p> <p>Family-based weight loss intervention</p> <p><i>n</i> 159 parents, 37 % male.</p> <p>105 families randomised to intervention (82) or control (23).</p> <p>Age fathers: Intervention: 42.1 (SE 1.0) Control: 43.7 (SE 2.2)</p>	<p>Calibrated self-reported physical activity with objectively measured step count at baseline. Included completion rates for participants included in study. Reported exact p values. Discussed obtaining ethical approval and informed consent.</p>	<p>Self-reported dietary intake. No follow up after intervention end. Participants not equally randomised to trial arms which reduced power of the study. Did not discuss blinding assessors to trial arms. Unclear whether adult height and weight was self-reported or measured by a member of the research team. Does not describe how participants were randomised.</p>	<p>Quality: <b>Moderate</b></p>
Burke et al.,	Australia	Successfully recruited a large	Does not present effect size, confidence	Quality:

2002	<p>Couples' weight loss intervention</p> <p><i>n</i> 137 Men <i>n</i> 137 Women</p> <p>111 couples completed testing and 81 attended for follow-up.</p> <p>Age men: 29.8 (SD 8.7); low level group, 30.9 (SD 8.3) high level group; 31.5 (SD 9.5) control group.</p>	<p>number of couples (137 couples). Recorded physiological changes at three time points including 1-year follow up.</p>	<p>intervals or any numerical data for changes in BMI among participants. Poor follow-up (81 of 137 couples). Results not generalisable to wider community. Physical activity measured using a 7-day and 14-day recall and not objectively measured using a pedometer/accelerometer. Does not report statistical significance (p value) of all physiological changes. Does not describe obtaining ethical approval or informed consent. Does not describe how participants were randomised.</p>	<b>Low</b>
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KEY: SD – Standard deviation, SE – Standard error, 95% CI – 95% confidence interval \* Quality rating of “high” “moderate” or “low” used based on guidance received from CASP in personal correspondence with PhD student (KH)

### 3.3.3.2 *Quality of qualitative literature*

The quality of included literature was appraised using the CASP qualitative checklist (CASP, 2018a) and the JBI qualitative checklist (Lockwood, Munn and Porritt, 2015) (see Appendices 9 and 10). The quality was ranked as “low”, “moderate” or “high” based on guidance from CASP which was received in personal correspondence with the PhD student (KH) (Table 13). Three research were of high quality (Maclean et al., 2014; Martinez et al., 2012; Mallyon et al., 2010), three were of moderate quality (Faw, 2014; Sabinsky et al., 2007; Thomas et al., 2008), and one was of low quality (Burke et al., 1999). One research article failed to report obtaining ethical approval (Sabinsky et al., 2007), and another did report that it had obtained approval but did not state this was from an ethics committee (Thomas et al., 2008). This was considered a limitation because ethical approval to conduct research with human participants is an essential process in ensuring the research risks and benefits have been adequately considered and controlled (World Medical Association, 2001). Two research articles provided no context or participant information when reporting quotations (Thomas et al., 2008; Faw, 2014). This was considered a limitation because it was unclear how these findings related to directly to men. Another weakness of one of the research articles was that the research article did not include a justification for which participants, or how many participants, were selected to take part in focus groups following the weight loss intervention they had participated in (Burke et al., 1999). The size of focus groups in two research studies was less than is recommended (Krueger and Casey, 2014) (Maclean et al., 2014; Sabinsky et al., 2007) which was seen as a limitation to study findings. Several research articles did not discuss the use of multiple researchers in the data analysis process (Burke et al., 1999; Faw, 2014, Sabinsky et al., 2007) or data saturation (Burke et al., 1999; Sabinsky et al., 2007; Mallyon et al., 2010) which brings the credibility of findings and conclusions drawn into question. One research article

contained a short discussion surrounding the impact that the researcher's gender could have had on the data collection (Martinez et al., 2012); the inclusion of this discussion was seen as a strength and demonstrated reflexivity. Another research article of high quality noted that female researchers were conducting the interviews, and that participants may have recognised one of them from previous involvement in a weight management intervention (Maclean et al., 2014). However the impact that a female researcher conducting research with male participants was not explicitly acknowledged or discussed (Maclean et al., 2014). A limitation to all of the included research articles was that none reported the theoretical or cultural perspectives of the researchers, and there was no discussion about how this or the researcher's own biases may have impacted the data collected or conclusions drawn.

**Table 13** Summary of included qualitative literature in Literature Review 2

<b>Author date</b>	<b>Country</b>	<b>Study design</b> <b>Methodology</b> <b>Data collection</b> <b>Analysis</b>	<b>Aim</b>	<b>Findings or themes reported</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Quality* (high, moderate, low)</b>
(Maclean et al., 2014)	UK <i>n</i> 39 age range 35-65 BMI $\geq$ 28 100% male	Qualitative  Focus groups  Observations Field notes  Thematic approach  OSOP method	To explore perceived influences of female relatives on their eating behaviours	Men's descriptions of the central role of women in their eating practices and choices; men's accounts of their experience of making changes to their former eating practices in relations to these women	Discussed researcher characteristics. Provides rationale for research design. Rigorous analysis and inclusion of deviant cases. Use of multiple researchers. Clearly identified themes. Video and audio recorded focus groups to improve accuracy. Discussed obtaining ethical approval and informed consent. Combined multiple sources of data (focus groups and observations). Reports data management strategies.	Self-selection bias of participants. No weight, BMI or age information available about the men that took part in the focus groups. No rationale for sample size. Some focus group sizes below optimum size.	Quality: <b>High</b>
Mallyon et al.,	Australia	Qualitative	To explore men's	How to diet like a man; gendered	Relates findings to relevant theories.	Omissions from research article:	Quality: <b>High</b>

2010	<i>n</i> 8 Mean age 45 Mean BMI 31.6 100% male	Post-intervention qualitative study  One or two semi-structured interviews with each participant <i>n</i> 8 Grounded Theory	experiences of dieting	dieting: science versus shopping; doing other people's gender and social sabotage of men's dieting.	Rationale for study design. Considers reflexivity. Details analysis procedures. Multiple researchers used to analyse data. Included deviant cases. Clearly identified themes. Reports data management strategies. Discussed obtaining ethical approval.	Research/researcher relationships discussion, informed consent, age or BMI of qualitative participants (BMI obtained directly from author)  Participant self-selection bias - participants from a prior weight loss intervention and self-selected to take part in post-intervention interviews. Does not discuss how or why certain participants were selected to take part in interviews.
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Martinez et al., 2012	USA <i>n</i> 16 Mean age 41 Mean BMI 28.4	Qualitative Focus groups Inductive and deductive approach Socio-ecological model	To explore perspectives on weight, lifestyle and associated health risks.	General perceptions of weight, diet, and physical activity; perceived barriers to healthy living; perceived	Objectively measured weight and height. Multiple researchers used to analyse data. Relates findings to relevant model of behaviour. Attempts to acknowledge impact of	Convenience sample. Poor focus group attendance. No justification for how many people were recruited	Quality: <b>High</b>
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*cont.* 100% male

facilitators to healthy living.

researcher's gender on data collection. Identified important findings within a potentially hard-to-reach minority group. Addresses issues relating to language and translation.

Faw, 2014	USA <i>n</i> 25 Mean age 21.2 Mean BMI 27.1 16% male	Qualitative Grounded theory In-depth interviews Constant comparative method	To explore support-seeking strategies, the success of support-seeking strategies, for managing non-support, commonalities in strategy use	Avoidance of seeking family support. Covert attempts to lose weight with family. Lack of support seeking was associated with lack of weight loss	Discussed reaching data saturation. Stated which methodology used. Discussed obtaining study approval and participant consent. Provides rationale for study design.	Omissions from research article: how ethical issues were considered, how many themes were generated, respondent validation, use of multiple researchers, relationship of research to participants, context regarding quotations provided (gender, age).	Quality: <b>Moderate</b>
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Faw, 2014, *cont.*

Experiences relate to young adults so limited use outside of this population.

						Weight and height self-reported.	
Sabinsky et al., 2007	Denmark <i>n</i> 13  Age 25-44  Mean BMI of focus groups: 27.6 - 29.8 100% male	Qualitative Focus groups Part-structured, part- unstructured interview guide  Thematic analysis	To explore men's barriers to dieting. Men had taken part in a weight loss study.	Perceived motives and perceived barriers towards weight loss.	Recruited low SES men. Multiple researchers to analyse data. Clearly identified themes generated. Use of audio and video tape to improve accuracy. Included deviant cases. Provides some context to quotations.	Did not discuss ethical approval or informed consent. Poor turn-out for focus groups. Self-reported height and weight. No rationale for how many focus groups, size of focus groups or number of participants included.	Quality: <b>Moderate</b>
Thomas, 2008	Australia <i>n</i> 76  Mean age: 47  Mean BMI 42.5 Men 17% of sample.	Qualitative  Open-ended interviews  Constant comparative method	Explore attitudes towards dieting, exercise and losing weight among obese people who have attempted to lose weight. Explore why their weight loss attempts were unsuccessful	People living with obesity have been 'socially conditioned' to turn to diets as an obesity cure, they blame themselves when diets fail; Exercise or PA is difficult for obese people, Social networks have both a	Described analysis process. Rationale for study design. Reached data saturation, discussed role of each researcher. Discussed inter-rater reliability as means of confirming themes. Use of multiple researchers. Include member checking.	Participant characteristics not provided and no longer accessible. No context provided with participant quotations. No clear themes reported.	Quality: <b>Moderate</b>
Thomas, 2008, <i>cont.</i>							

			and what would aid their efforts to lose weight.	positive and negative effect on healthy lifestyle efforts			
Burke et al., 1999	Australia  <i>n</i> not reported for focus groups  Age: Not reported for focus groups  BMI: Not reported for focus groups  % male: Assumed 50%	Mixed methods  Focus group  Reports using “qualitative techniques” to analyse focus group data	To explore perceptions of the couples-based weight loss pilot programme	Perceptions that a couples-based approach was better than an individual approach	Brief overview for why focus groups selected. Discussed an approach for analysing and reporting data. Provides some participant characteristics with each quotation (gender). Detailed how data was recorded.	No rationale for how participants were selected or number of participants in focus groups. No clear structure to how results presented. Does not discuss data saturation. Does not include deviant cases - reports that it included the most useful illustrations in report. No participant characteristics for those included in focus groups.	Quality: <b>Low</b>

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KEY: SD – Standard deviation, SE – Standard error, 95% CI – 95% confidence interval \* Quality rating of “high” “moderate” or “low” used based on guidance received from CASP in personal correspondence with PhD student (KH)

Results of literature reviewing are presented in three sections:

- i) Quantitative literature synthesis regarding weight loss interventions for couples
- ii) Quantitative literature synthesis regarding parent and child weight loss interventions
- iii) Qualitative literature synthesis regarding men's perceptions about the influence of family members on male weight loss

### 3.3.3 Quantitative literature synthesis regarding weight loss interventions for couples

This section synthesises the findings from three research articles that were published as a result of one research study (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003) (See Table 14). The earliest study (Burke et al., 1999) was a pilot study which informed a later research study, on which two research articles were based (Burke et al., 2002; Burke et al., 2003). While the two latter research articles are based on the same study, both were included in this review as they each provide different data about the research that was conducted. Additional unpublished information regarding BMI changes of participants from the non-pilot study was obtained from one of the study authors but was not included in Table 14 because it combined male and female results.

#### *3.3.3.1 Programme purpose, content and delivery*

The three research articles included in this section were all designed to promote healthy lifestyles among couples who had been living together for two years or less (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). The pilot study had two trial arms (control versus intervention), and the proceeding study had three trial arms (control

versus low level intervention versus high level intervention). The interventions consisted of six modules about nutrition, physical activity, smoking and alcohol consumption. The modules were delivered at two-week intervals and were delivered either face-to-face delivery or via postal modules to complete at home; 3 face-to-face sessions and 3 postal modules for the high-level trial arm and for the intervention arm of the pilot study, 1 face-to-face session and 5 postal modules for the low-level trial arm participants (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). It was only stated in one paper that the control group was offered the intervention at the end of the study period (Burke et al., 1999). One article stated that the control group received no intervention (Burke et al., 2003). No further information about the control groups was provided.

### *3.3.3.2 Participant characteristics, measures and outcomes*

This section will present the reported changes in body weight, BMI and waist circumference, a summary of which is presented below in Table 14. The participants in the pilot study and main study were couples who had not been living together for more than two years and were not planning a pregnancy during the study period (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). Participants were excluded if they had what was termed a “serious disease” such as heart disease, diabetes and severe asthma (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). There were no BMI, weight or age criteria regarding inclusion or exclusion for couples (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003).

All studies measured the baseline BMI of participants (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). Baseline weight was only reported in the pilot study (Burke et al., 1999). One study measured baseline waist circumference (Burke et al., 2003). The pilot study reported that there were no significant changes in anthropometry between the

control group and intervention group (Burke et al., 1999). The BMI changes among participants in the main study were only available as a graph in Burke et al (2002) which, through personal correspondence with a study author, it was confirmed that the x axis in the published report had been mislabelled (See Appendix 12 for explanation). The changes in BMI are reported as non-significant between groups at the end of the intervention ( $p=0.33$ ) and follow-up ( $p=0.28$ ) (Burke et al., 2003). Changes in BMI were not significant between groups, when analysed as a whole or when analysed by gender (Burke et al., 2002; Burke et al., 2003). Further data from the study author was obtained regarding BMI change however the figures reported are for men and women combined and have therefore not been included in Table 14. No post-intervention or follow up BMI data was available for men-only. Changes in waist circumference were non-significant at the end of the intervention ( $p=0.31$ ) and follow-up ( $p=0.30$ ) (Burke et al., 2003).

**Table 14** Summary of weight loss intervention for couples

<b>Author, date</b>	<b>Study design, duration and content</b>	<b>Measure</b>	<b>Baseline</b>	<b>End of study</b>	<b>Follow up</b>	<b>Statistical significance</b>
Burke et al., 1999	Mixed methods	Weight (kg), mean (SD)	Intervention: 80.6 (76.6 - 84.5 95% CI)	Intervention: 78.4 (73.7 - 83.1 kg 95% CI)	No data	Stated as NS
	2-arm RCT; intervention vs control (wait list).		Control: 80.6 (76.4 - 84.4 95% CI)	Control: 80.3 (75.5 - 85.1 kg 95% CI)		No data provided
	16 weeks	BMI (kg/m <sup>2</sup> ), mean (SD)	Intervention: 26.3 (24.8 - 27.8 95% CI)	Intervention: 25.1 (23.7 - 26.5 95% CI)	No data	Stated as NS
	Content: Nutrition, physical activity, stopping smoking and alcohol drinking guidelines		Control: 25.1 (23.9 - 26.2 95% CI)	Control: 25.1 (23.8 - 26.5 95% CI)		No data provided
Burke et al., 2002*	3-arm RCT: control, low level	BMI (kg/m <sup>2</sup> )	High-level intervention: 27.0	Graphical data only	Graphical data only	No data provided

	intervention, high level intervention		Low-level intervention: 26.9			
			Control: 26.6			
Burke et al., 2003*	BMI (kg/m <sup>2</sup> ), mean (SD)	High-level intervention: 27.0 (SD 3.7)	High-level intervention: “decreased”	High-level intervention: “increased”	High-level intervention: “increased”	End of intervention p=0.33**
		Low-level intervention: 26.9 (SD 4.2)	Low-level intervention: “decreased”	Low-level intervention: “increased”	Low-level intervention: “increased”	Follow up p=0.28**
		Control: 26.6 (SD 3.9)	Control: “increased”	Control: “increased”	Control: “increased”	
Burke et al., 2003*	Waist circumference (cm), mean (SD)	High-level intervention: 88.5 (SD 8.9)	High-level intervention: “decreased”	High-level intervention: “increased”	High-level intervention: “increased”	End of intervention p=0.31**
		Low-level intervention: 88.7 (SD 10.6)	Low-level intervention: “decreased”	Low-level intervention: “increased”	Low-level intervention: “increased”	Follow up p=0.30**
		Control: 90.3 (SD 12.1)	Control: “increased”	Control: “increased”	Control: “increased”	

KEY: 95% CI - 95% confidence interval. NS - non-significant. SD - Standard deviation \* - Part of same research study

\*\* - P value reported is changes between groups



### 3.3.4 Quantitative literature synthesis regarding parent-child weight loss interventions

This section synthesises the research presented in four research articles (Morgan et al., 2011b; Quattrin et al., 2012; Rodearmel et al., 2006; Morgan et al., 2014). Two research articles focused on the Healthy Dads Healthy Kids (HDHK) interventions in Australia (Morgan et al., 2011b; Morgan et al., 2014) and two research articles were weight loss interventions for children in the USA who were at risk of obesity and involved one or both of their parents (Quattrin et al., 2012; Rodearmel et al., 2006).

#### *3.3.4.1 Programme purpose, content and delivery*

Two of the four research studies were designed to promote healthy eating, weight loss and physical activity among overweight and obese fathers (Morgan et al., 2011b; Morgan et al., 2014). The remaining two studies were weight loss interventions for children at risk of obesity and included one or both of their parents (Rodearmel et al., 2006; Quattrin et al., 2012); one study required the child to have at least one parent with a BMI  $\geq 27$  kg/m<sup>2</sup> (Quattrin et al., 2012). Study durations ranged between seven weeks (Morgan et al., 2014), and six months (Quattrin et al., 2012). Intervention location was reported in two research articles; a University recreation centre (Morgan et al., 2011b) and at local schools (Morgan et al., 2014).

Three research articles reported the duration of each face-to-face session; 60 minutes (Quattrin et al., 2012), 75 minutes (Morgan et al., 2011b) and 90 minutes (Morgan et al., 2014). Children also attended three (Morgan et al., 2011b), four (Morgan et al., 2014), or all (Rodearmel et al., 2006; Quattrin et al., 2012) of the face-to-face sessions. The contact that participants had with researcher or intervention facilitators ranged between three face-to-face sessions (Rodearmel et al., 2006) and ten face-to-face

sessions with eight follow-up telephone calls (Quattrin et al., 2012). Study aims included: to increase daily step counts, cereal consumption and fruit consumption (Rodearmel et al., 2006); weight loss between 0.5 – 1.0 pounds in children and 1.0 – 2.0 pounds in parents per week, to limit screen time among children to less than 2 hours per day, and for children to do 60 minutes of physical activity per day (Quattrin et al., 2012); weight loss among fathers, education about healthier behaviours, encouraging men to be healthy role models for their children (Morgan et al., 2011b; Morgan et al., 2014). The childhood obesity research studies control groups either received information-only (Quattrin et al., 2012), or the opportunity to attend three group meetings, to monitor steps per day and cereal consumption, and were instructed to maintain usual eating behaviours (Rodearmel et al., 2006). The control groups for the HDHK studies received the intervention after the study period (Morgan et al., 2011b; Morgan et al., 2014).

#### *3.3.4.2 Participant characteristics, measures and outcomes*

Families were eligible to participate in the weight loss interventions if one of the children in the family had a BMI  $\geq 85^{\text{th}}$  percentile for weight (Quattrin et al., 2012; Rodearmel et al., 2006); and at least one parent with a BMI  $\geq 27 \text{ kg/m}^2$  (Quattrin et al., 2012). Among the HDHK studies, fathers were eligible for inclusion if their BMI was between  $25.0 - 40.0 \text{ kg/m}^2$  (Morgan et al., 2011b; Morgan et al., 2014). Fathers were excluded if they had heart disease in past five years, diabetes, orthopaedic or joint problems that would be a barrier to physical activity, or recent weight loss of  $\geq 4.5 \text{ kg}$  (Morgan et al., 2011b; Morgan et al., 2014). Fathers were also excluded if they were taking medication which could have impacted their body weight, or if their child was severely obese (Morgan et al., 2011b). The children that took part in the research studies

were aged 2-5 years (Quattrin et al., 2012), 5-12 years (Morgan et al., 2011b; Morgan et al., 2014) and 8-12 years (Rodearmel et al., 2006).

A summary of changes in weight, BMI and waist circumference are presented in Table 15. Most research articles reported age and baseline BMI of male participants (Morgan et al., 2011b; Rodearmel et al., 2006; Morgan et al., 2014), however, only two research articles reported the BMI changes separately for men (Morgan et al., 2011b; Morgan et al., 2014). Three research articles reported the weight change of men (Morgan et al., 2011b; Morgan et al., 2014; Rodearmel et al., 2006). Two research articles reported waist circumference at the umbilicus (Morgan et al., 2011b; Morgan et al., 2014). One study recorded waist circumference at the widest point (Morgan et al., 2014) and one recorded waist circumference at narrowest point (Morgan et al., 2011b).

Men who were randomised to the intervention groups reduced their weight significantly more than those randomised to the control groups ( $p < 0.001$ ) (Morgan et al., 2011b; Morgan et al., 2014). Parents who were randomised to the intervention group lost significantly more weight than the parents who were randomised to the control group ( $p = 0.0390$ ), however this result was non-significant for fathers ( $p = 0.6149$ ) when analysed separately by gender (Rodearmel et al., 2006). Statistical significance was not reported among one study (Quattrin et al., 2012).

The BMI of men randomised to the intervention group had reduced significantly by the end of the intervention ( $p < 0.001$ ) (Morgan et al., 2011b; Morgan et al., 2014) and at the follow-up ( $p < 0.001$ ) compared to the control group (Morgan et al., 2011b). Two research articles reported BMI changes for parents (Rodearmel et al., 2006; Quattrin et al., 2012). The research articles by Quattrin (2012) and Rodearmel (2006) reported that parent BMI had reduced significantly by the end of the intervention, compared to the control group,  $p < 0.0001$  and  $p = 0.0352$  respectively. The decrease in BMI was reported

to be significant for mothers ( $p=0.0274$ ) but non-significant for fathers (0.6352) when analysed separately by gender (Rodearmel et al., 2006). There was a significant reduction in waist circumference measured at the umbilicus ( $p<0.01$ ) (Morgan et al., 2011b; Morgan et al., 2014), narrowest point ( $p<0.01$ ) (Morgan et al., 2011b) and at the widest point ( $p<0.01$ ) (Morgan et al., 2014) among the men randomised to the intervention group compared to the control group.

**Table 15** Summary of men’s weight, BMI and waist circumference measurements among the parent-child weight loss interventions

Study	Study design and duration	Measure	Baseline	End of intervention	Follow up	Statistical significance
Morgan et al., 2011b	Quantitative Father and child weight loss intervention Two-arm RCT; Intervention vs control group (wait list)	Weight (kg), mean (SD)	Intervention: 106.7 (SD 13.7)	Intervention* -6.7 (-8.2, -5.1 95% CI)	Intervention* -7.6 (-9.2, -6.0 95% CI)	Significant difference at 3 and 6 months (p<0.001)*
			Control: 105.0 (SD 13.4)	Control* -0.4 (-1.9, 1.1 95% CI)	Control* 0.0 (-1.4, 1.6 95% CI)	
					Mean difference between groups at 6 months: 7.6 (5.4, 9.9, 95% CI) Cohen’s <i>d</i> = 0.54	
	Eight face-to-face sessions (75 mins each)  Duration: three months  Follow up at six months	BMI (kg/m <sup>2</sup> ), mean (SD)	Intervention: 33.3 (SD 3.7)	Intervention* -1.8 (-2.4, -1.3 95% CI)	Intervention* -2.3 (-2.8, -1.8 95% CI)	Significant difference at 3 months and 6 months (p<0.001) *
		Control: 33.1 (SD 4.1)	Control* 0.0 (-0.5, 0.5 95% CI)	Control* 0.0 (-0.5, 0.4 95% CI)		
		Waist circumference (umbilicus)	Intervention: 111.2 (SD 10.5)	Intervention* -6.2 (-8.2, -4.3 95% CI)	Intervention* -7.5 (-9.4, -5.7 95% CI)	Significant difference at 3 months and 6

Morgan et al., 2011b, <i>cont.</i>		(cm), mean (SD)	Control: 111.1 (SD 9.7)	Control* -0.5 (-2.3, 1.4 95% CI)	Control* -0.7 (-2.4, 1.1 95% CI)	months ( $p < 0.001$ ) *
					Mean difference between groups at 6 months: 6.9 (4.3, 9.5, 95% CI) Cohen's $d = 0.62$	
		Waist circumference (narrow) (cm), mean (SD)	Intervention: 104.7 (SD 8.9)	Intervention* -4.4 (-6.0, -2.7 95% CI)	Intervention: -5.5 (-7.3, -3.7 95% CI)	Significant difference at 3 months and 6 months ( $p < 0.001$ ) *
			Control: 104.4 (SD 7.8)	Control* 1.0 (-0.6, 2.6 95% CI)	Control: 1.2 (-0.5, 2.8 95% CI)	
					Mean difference between groups at 6 months: 6.6 (4.2, 9.1, 95% CI) Cohen's $d = 0.67$	
Morgan et al., 2014	Quantitative  Two-arm RCT; Intervention vs control group (wait list)  Seven weekly face- to-face sessions (90 mins each)	Weight (kg), mean (SD)	Intervention: 103 (SD 14.1)	No data	Intervention* -3.3 (-4.3, -2.4, 95% CI)	Significant group x time effect at 14 weeks ( $p < 0.001$ )
			Control: 100.5 (SD 14.1)		Control* 0.1 (-0.9, 1.0, 95% CI)	
					Mean difference between groups at 14 weeks -3.4 (-4.7, -2.1, 95% CI) Cohen's $d = 0.24$	

Morgan et al., 2014, <i>cont.</i>	Duration: seven weeks	BMI (kg/m <sup>2</sup> ), mean (SD)	Intervention:	No data	Intervention *	Significant group x time effect at 14 weeks (p<0.001)
	Follow up at 14 weeks		32.6 (SD 3.7)		-1.0 (-1.5, -0.6, 95% CI)	
			Control:		Control *	
		32.3 (SD 3.9)		-0.0 (-0.3, 0.3, 95% CI)	Mean difference between groups at 14 weeks -1.0 (-1.5, -0.6, 95% CI) Cohen's <i>d</i> = 0.26	
		Waist (umbilicus) (cm), mean (SD)	Intervention:	No data	Intervention *	Significant group x time effect at 14 weeks (p<0.001)
			110.4 (SD 10.8)		-3.3 (-4.2, -2.3 95% CI)	
			Control:		Control *	
			109.0 (SD 9.9)		0.4 (-0.4, 1.3 95% CI)	Mean difference between groups at 14 weeks -3.7 (-4.9, -2.4, 95% CI) Cohen's <i>d</i> = 0.36
		Waist (widest) (cm), mean (SD)	Intervention:	No data	Intervention *	Significant group x time effect at 14 weeks (p<0.001)
			107.4 (SD 10.3)		-2.2 (-3.4, -1.1 95% CI)	
			Control:		Control *	
			106.4 (SD 9.8)		1.9 (0.7, 3.0 95% CI)	Mean difference between groups at 14 weeks

Morgan et al., 2014, <i>cont.</i>					-4.1 (-5.7, -2.5, 95% CI) Cohen's <i>d</i> = 0.41	
Quattrin et al., 2012	Quantitative  Two-arm RCT; Intervention vs information control group  Ten face-to-face sessions (60 mins each), eight telephone calls  Duration: six months Follow up: none	BMI (kg/m <sup>2</sup> ), mean (SD)	No data for fathers only	No data for fathers only	participating fathers* -1.8 ± 1.5	NS changes among fathers vs. mothers (p=0.49)
Rodearmel et al., 2006	Quantitative  Two-arm RCT Intervention vs control group  Three face-to-face sessions  Duration: 13 weeks Follow up: none	Weight (kg), mean (SD)  BMI (kg/m <sup>2</sup> ), mean (SD)	Intervention: 93.7 (SD 1.8)  Control: 93.7 (SD 0.8)  Intervention: 29.7 (SD 0.6)  Control: 29.3 (SD 0.8)	No data for fathers only  No data for fathers only	No data for fathers only  No data for fathers only	NS for fathers (p=0.6149)  NS for fathers (p=0.6352)

KEY: SD – Standard deviation. 95% CI – 95% confidence interval. NS – Non-significant \* - change from, or compared to, baseline



### 3.3.5 Qualitative literature synthesis regarding men's perceptions of family influences on male weight loss behaviours.

#### 3.3.5.1 Summary of qualitative literature

This section synthesises the work of the six qualitative research articles selected for inclusion (Faw, 2014; Maclean et al., 2014; Mallyon et al., 2010; Thomas et al., 2008; Sabinsky et al., 2007; Martinez et al., 2012) and the qualitative section of the one mixed method study included (Burke et al., 1999). Study designs employed focus groups (Burke et al., 1999; Maclean et al., 2014; Sabinsky et al., 2007), semi-structured interviews (Faw, 2014; Mallyon et al., 2010), open-ended interviews (Thomas et al., 2008), observations (Maclean et al., 2014) and field notes (Maclean et al., 2014) to collect data. Four of the included research articles were regarding studies which consisted of male-only samples (Maclean et al., 2014; Mallyon et al., 2010; Sabinsky et al., 2007; Martinez et al., 2012), three others included mixed-sex samples (Burke et al., 1999; Faw, 2014; Thomas et al., 2008). Among the mixed-sex samples, the percentages of men included in the research studies were 17% (Thomas et al., 2008), 36% (Faw, 2014) and 50% (Burke et al., 1999). These research articles featured discussions regarding the influence that parents and parents-in-law, girlfriends, wives, children and brothers had upon weight loss, dietary intake, dieting, physical activity, exercise and weight-related behaviours. The most prominent influence seemed to be that of a wife, girlfriend or partner, which was discussed among all included research articles. As a result, the themes that were generated were mostly focused on the relationships that men had with their partners. The themes generated for this review were: *“Motivation to change and to stick to it”*, *“Together as a couple”*, *“Household norms and how these changed”*, *“Dependence of family members”*, *“Difficulties in communicating needs while protecting family relationships”*, *“Strategies for managing negativity and non-*

support”. Table 16 (below) shows which themes were present in the included research articles.

**Table 16** Themes generated in Literature Review 2

<b>Author, date</b>	<b>Quality* (low, moderate, high)</b>	<b>Theme name</b>					
		<b>Motivation to change and to stick to it</b>	<b>Together as a couple</b>	<b>Household norms and how these changed</b>	<b>Dependence on family members</b>	<b>Difficulties in communicating needs while protecting family relationships</b>	<b>Strategies for managing negativity and non-support</b>
<b>Maclean et al., 2014</b>	High	✓	✓	✓	✓	✓	✓
<b>Mallyon et al., 2010</b>	High	✓		✓	✓	✓	
<b>Martinez et al., 2012</b>	High		✓	✓		✓	
<b>Faw, 2014</b>	Moderate	✓			✓	✓	✓
<b>Sabinsky et al., 2007</b>	Moderate	✓		✓		✓	
<b>Thomas, 2008</b>	Moderate	✓				✓	✓
<b>Burke et al., 1999</b>	Low	✓	✓				✓

\* Quality rating of “high” “moderate” or “low” used based on guidance received from CASP in personal correspondence with PhD student (KH)

### 3.3.5.2 Theme 1: “*Motivation to change and to stick to it*”

This theme focused on how other people could influence, and provide motivation surrounding health-related behaviours and behavioural intentions among men. This

theme was one of the largest themes developed and it is based on the findings from six of the seven included research articles. There was an overall sense that direct and indirect motivation for certain health-related behaviours came from an external source, such as a family member. It was noted that among one study, “*half of the male respondents were persuaded to join the [weight loss] programme by a woman family member or friend*” (Mallyon et al., 2010, p. 335). For some participants, wanting to participate more fully in their children’s lives motivated them to lose weight (Thomas et al., 2008). Another study found that the desire to attract a girlfriend (Sabinsky et al., 2007) or the longing for a long-term romantic relationship (Thomas et al., 2008) motivated participants to lose weight. Partners were seen to help participants improve eating patterns or be more active. One couples-based intervention raised participants’ awareness about their lack of physical activity and successfully motivated them to change their behaviours together:

*“Instead of driving to the video shop we now walk—its only 10 minutes but it makes you feel good.” (Male)*

*(Burke et al., 1999, p28)*

Men attending the FFIT weight loss intervention were also encouraged by partners to avoid eating foods that weren’t a part of their diet plan (Maclean et al., 2014). One research article discussed how a family member had provided motivation or encouragement for a participant to adhere to a weight loss regime by providing them with tangible rewards like a mobile phone, and through positive encouragement and positive reinforcement (Faw, 2014). Some participants embarked on a diet because a family member had also joined a weight loss group (Thomas et al., 2008). Much of this theme focused around diet and weight-related behaviours and behavioural intentions

and highlights how family members were involved in the initial motivation and subsequent maintenance of health behaviours.

#### 3.3.5.3 Theme 2: *“Together as a couple”*

The following theme builds upon the previous theme. Once the motivation to engage in weight-related behaviours had been established, the transition from intentions to behaviours seemed to include the input or support of a romantic partner or other close family member. Partners were seen as an important source of support in a couple-based weight loss programme (Burke et al., 1999). For some participants it seemed that losing weight was done with their partners; some women joined in with men’s dietary changes which was seen as helpful, and some men joined in with their partner’s existing weight loss efforts:

*“Well my wife’s looking to lose weight as well so she’s kinda joined in...”*

*(Maclean et al., 2014, p. 129).*

When a couple engaged in health behaviours together, they were able to navigate potential obstacles to healthy eating outside of the home together, for example; when going out for a meal together, or when food shopping together and by reading food labels together (Burke et al., 1999). Others thought that communication was key between couples to ensure that their shared health goals could be met (Martinez et al., 2012). Overall, participants discussed the possibility of a couples-based weight loss programme favourably (Burke et al., 1999). However, this theme does include lower quality evidence (Burke et al., 1999), so the findings relating to this particular research article should be treated with caution. This theme demonstrates that among those who

discussed the influence of a partner, most participants valued the support, advice and encouragement that their partner provided.

#### 3.3.5.4 Theme 3: *“Household norms and how these changed”*

The ideas and concepts discussed in this theme were focused around traditional gender roles within the home, and the empowerment of men to engage in nutrition-related activities. This theme, in part, follows on from the previous theme which focused on how some couples undertook household nutrition or weight-related tasks or goals. This theme explores how the “normal” household routine could or might change following a period of diet or weight loss among male household members. Within many households, it seemed that women did most of the food work (Maclean et al., 2014; Mallyon et al., 2010; Martinez et al., 2012). Women were framed by men as knowledgeable about some aspects of food intake, for example, understanding food labels (Maclean et al., 2014) and as having the necessary skills to prepare more interesting diet meals (Mallyon et al., 2010). By engaging in food shopping, men attempted to keep unhealthy food out of the shopping basket that would be brought home (Maclean et al., 2014). Sometimes men participated in food shopping but were questioned or corrected by their wife when putting certain foods in the shopping basket (MacLean et al., 2014). Typically, men lacked autonomy and control over what foods were available at home:

*“...my fiancé will do a lot of the cooking, now and she’ll insist upon, because she likes her veg [vegetables] and tatties [potatoes]”*

*(Maclean et al., 2014, p. 127)*

It seemed that for several men, they were successful at dieting and following a given diet plan because their wives or partners were very involved in the provision of the diet foods (Mallyon et al., 2010). Men in Denmark thought that following a weight loss diet would mean deviating from normative behaviours with their friends and family which was seen as a barrier to weight loss (Sabinsky et al., 2007). However, after attending FFIT, men seemed to be more vocal about the foods they ate: several men requested different portion sizes, took part in food shopping more than before, and this represented a change in how households were run (Maclean et al., 2014). Men seemed keen to be involved in ensuring that healthier food was purchased, and that their portion sizes were not, in their opinion, too large (Maclean et al., 2014). In this way it appeared that men became more empowered and assertive when making nutrition decisions that involved themselves. The quality of research upon which this theme was founded were predominantly of high quality and therefore the findings from this theme can be interpreted with greater confidence than other themes. This theme presented the experiences men had of re-negotiating their own involvement in their food choices at home, as well as re-negotiating the involvement that their partner had on their dietary intake.

#### 3.5.5.5 Theme 4: *“Dependence on family members”*

There were many instances where it seemed men were reliant or dependant on a family member for an aspect of their healthy eating or exercise schedule. Frequently, men placed responsibility for a weight loss diet with their partner (Mallyon et al., 2010). It seemed that this occurred particularly among men who enacted hegemonic masculinity, since food shopping and dieting were considered to be feminine behaviours (Mallyon et al., 2010). Men relied heavily on partners to help them make dietary changes in the

FFIT study, the article authors noted: *“The majority of men implied that it was principally their partner’s responsibility to make the necessary changes to their diet to help them lose weight.”* (Maclean et al., 2014, p. 127). Having women prepare diet meals was how two men found it easiest to adhere to their weight loss diets (Mallyon et al., 2010). Conversely, some men had already positioned themselves as not relying on partners for nutritional support: they were already “in control” of family food practices or they led dietary changes in their household and their partners went along with or supported these changes (Maclean et al., 2014). Asking their girlfriend to remind them to go running was how one person maintained their exercise schedule (Faw, 2014). The research article by Faw (2014) did not provide gender for quotations and therefore, although the findings have been provided in a male weight-loss context, they should be interpreted with caution because gender of who is being quoted is unknown. This theme provided an overview of the ways in which men relied on their female partners to facilitate their dietary changes in order for them to lose weight. This related strongly to hegemonic masculinity and how men navigated dieting whilst maintaining their masculinity.

#### 3.3.5.6 Theme 5: *“Difficulties in communicating needs while protecting family relationships”*

This theme was based on all of the high and moderate quality research articles included in this review. This theme, like the first theme, is also based on six of the seven included research articles and is one of the most substantial in terms of size. The focus of this theme was family relationships where food seemed to play a key part in these social relationships for many men. It seemed that there was a propensity for women to serve large portions of food to men, and that men often felt unable to comment on this perceived over-feeding. One man did manage to ask his wife for smaller portion sizes

(Maclean et al., 2014) however others felt unable to comment because it was not considered a sign of respect to decline or complain about food:

*“You can’t complain about food and much less if made by the woman.”*

*(Martinez et al., 2012, p. 494)*

Some women were framed as sabotaging or undermining men’s dieting efforts (Maclean et al., 2014; Mallyon et al., 2010; Thomas et al., 2008). Wives sometimes provided temptation, for example, by bringing chocolate into the home and trying to secretly eat this (Maclean et al., 2014). One man felt that when his wife baked a cake this made it more difficult for him to adhere to a healthy eating schedule. He reportedly discussed this problem with her, but she did not refrain from baking (Maclean et al., 2014). Feeding by mothers, mothers-in-law and wives was a way to provide care and men generally felt unable to make comments about this so as not to damage relationships (Maclean et al., 2014; Mallyon et al., 2010):

*“I’m probably the biggest disappointment for my mother and my mother-in-law anyway in terms of the way I interact with them, but then again that’s another story, but then to reject their cooking, which is probably the last bastion of their bond with me that’s difficult.”*

*(Mallyon et al., 2010, p. 338)*

One research article reported that approximately half of the study participants thought their partners served food portions that were too large or were unhealthy convenience foods (Maclean et al., 2014). One person reported that they had to adapt their diet strategy in the presence of their girlfriend because of her reaction to it in public:

*“For a while I was ordering meals and telling them, “Before you even bring it out to me, put half in a box,” which worked okay, but it’s not something [my*



*girlfriend] is used to. So she'd look at me weird, so I changed that. I try to eat better when I'm not around her, so that when we go out to dinner, it's not as big a deal."*

*(Faw, 2014, p. 273)*

It seemed that most people attempted to avoid arguments with their family members about dieting or weight loss; however, a small number of research articles referred to arguments or heated discussions that participants had had with family members on this topic (Mallyon et al., 2010; Faw, 2014; Maclean et al., 2014). Two research articles featured a discussion on how blame was attributed to a family member for their previous heavier weight (Martinez et al., 2012; Mallyon et al., 2010):

*"I tell her [mother] she's been my problem all my life and it's her fault I was fat!"*

*(Mallyon et al., 2010, p. 338)*

Lastly, some men discussed how they prioritised spending time with their family over doing exercise (Sabinsky et al., 2007). This theme encapsulated the way in which participants blamed or attributed responsibility for their weight, eating habits or lack of success at dieting to their family members. A re-negotiation of feeding roles seemed a difficult process to go through, particularly with female relatives, and confrontation about food and feeding was reported to result in arguments and so was avoided.

#### 3.3.5.7 Theme 6: *"Strategies for managing negativity and non-support"*

Following on from the previous theme wherein relationships were salvaged or protected, this theme focused on the negativity that could exist between people as a result of dietary, physical activity or weight loss behaviours. This theme was based on

one high quality research article, two moderate quality research articles and one low quality research article; the conclusions drawn should therefore be interpreted with some caution. One study found that participants were made to feel guilty by their family members when they had not complied with a weight loss programme or diet (Burke et al., 1999). Approximately one fifth of study participants felt like a “failure” when they did not achieve success on a commercial diet like their friends or family members had done (Thomas et al., 2008). These studies demonstrate the negative feelings that participants can experience when engaging in dieting attempts which involve family members. Many research articles discussed the issue of receiving non-support or weight-loss sabotage by a family member. One person felt unsupported when their girlfriend would resist going to the gym with them (Faw, 2014). There also seemed to be a reluctance among wives for men to continue eating healthily after attending a weight loss intervention:

*“My wife had the approach that “you’ve done your twelve weeks, so you’ve lost your weight now so just walk away.” I said “I cannae walk away [...] I’m no’ packing it in ‘n’ I’ve told her that.”*

*(Maclean et al., 2014, p. 130)*

Furthermore, some people felt that comments made about their appearance, that they looked “sick” or “too thin”, discouraged further weight loss (Thomas et al., 2008). In some instances, men felt that women had become threatened by the weight loss that they had achieved, which introduced insecurities into the relationship (Maclean et al., 2014). This theme identified how the actions and comments by family members, primarily female partners, were received and interpreted negatively by men. Men attempted to adhere to healthier behaviours in the face of non-support or criticism from other people within their social networks.

## 3.4 Discussion

### 3.4.1 Discussion of findings in relation to wider literature

This section comprises a summary of the key findings of this review followed by a discussion of these findings in relation to other research articles not included in the review; this includes articles that were retrieved during database searching however were screened out due to meeting exclusion criteria. The focus of this review was the influence that family members had on male weight loss. The quantitative literature found that father-child interventions were effective at eliciting weight loss among men. The quality and diversity of literature was greater among the literature which included fathers and children; the literature regarding couples-based weight loss interventions was limited to one research group and three research articles, which were, overall, reported poorly. All research articles failed to report long-term follow up of over one year, however both types of interventions show some promise for the inclusion of family members in weight loss interventions. The findings from the qualitative research articles included in this review are founded upon the results section of seven research articles. This review found that female partners seemed to be the primary influence upon men, and that women played a dominating role in men's eating behaviours. The nature of their influence could be construed as beneficial or detrimental, depending on the context. This review found that the majority of partners often had a positive influence, by facilitating the consumption of a healthy diet and by engaging in dieting or weight loss activities with men, however, this review also found that partners made critical comments regarding men's diet or weight loss behaviours and at times were framed as hindering men's progress.

The findings of this review relate to traditional gender roles and the normative role of the woman as the homemaker (Courtenay, 2000; Roos, Prättälä and Koski, 2001; Drummond and Drummond, 2015; Allen, Griffith and Gaines, 2013). Having a partner has been associated with improved eating habits among men (Sharpe and Arnold, 1998), however, having a partner and being married has also been associated with weight gain (Sobal, Rauschenbach and Frongillo, 2003). Other literature has found that healthy eating behaviours pre-marriage among women were seen to have a positive impact on their husband's healthy eating behaviours during the first four years of marriage (Homish and Leonard, 2008). It has also been found that among older couples, men continued to frame wives as supportive, nutrition educators and providers of food (Drummond and Smith, 2006).

The literature regarding social support among samples which include men with comorbidities such as diabetes and hypertension also found that women were the nutritional gatekeepers to the home, and that they were a key part of providing motivation for weight loss (Allen, Griffith and Gaines, 2013; James et al., 2016). Assigning responsibility to women for food preparation was not discussed as emasculating, even though this required men to have less control over their food (Newcombe et al., 2012); control being a key aspect of hegemonic masculinity (Courtenay, 2000).

The wider literature therefore confirms the findings of this review relating to themes wherein the partner had a positive influence on health (“motivation to change and to stick to it”, “together as a couple” and “dependence on family members”). This literature highlights that the influence of spouses can have a positive impact on health and can have a sustained effect throughout adulthood. This highlights the potential long-term benefits of weight loss interventions for couples, such that unlike the influence of

children, who become adults within 18 years, a spouse is a potential weight-loss or healthy lifestyle partner for life.

Family members encourage men to engage in healthy eating and physical activity and to access health care (Snipes et al., 2015). Other research that has explored social support more generally has found that men are reluctant to engage in activities which their peers may deem emasculating (Verdonk, Seesing and de Rijk, 2010). Support from friends and family, in particular their parents, were found to influence college students' intentions to be active and their sedentary behaviour (Deliens et al., 2015). A weight loss trial utilising the social support from friends found weight loss was greater among those with social support than without (Wing and Jeffery, 1999). A review of overweight and obese people's perceptions of weight management found that friends and family encouraged weight loss behaviours among them (Garip and Yardley, 2011). Social support is also an important factor in weight loss maintenance (Elfhag and Rössner, 2005). It seems that the romantic relationship provided a shield to protect from emasculation, and that it was acceptable to diet with a spouse but not with friends (Snipes et al., 2015). Thus, the findings of this review and other published literature surrounding social support demonstrate the potential benefits of including family support.

Most of the quantitative literature included in this review did not provide detailed information about changes in weight, waist circumference and BMI from baseline to intervention end for the male participants. It is therefore difficult to compare the effectiveness and efficacy of these weight loss interventions with each other. Control groups did not explore weight loss without social support, and the impact that children and partners had on weight loss cannot be definitively concluded. Based on available data, what can be concluded is that the father-child interventions in Australia produced the greatest changes in weight, BMI and waist circumference compared to the control

groups and were the most effective interventions for male weight loss (Morgan et al., 2011b; Morgan et al., 2014). There were only two research articles included in this review that focused on weight loss among fathers, which were both by the same research team in Australia, and therefore this finding could be an artefact of intervention design and not the support mechanism employed. It is possible that the father-child weight loss interventions were successful due to the perception that fathers act as role models for their children, and thus strive to be healthy (Verdonk, Seesing and de Rijk, 2010). The introduction of children into a family can be somewhat disruptive to established eating or exercise behaviours (Sharpe and Arnold, 1998), children can be a barrier to health behaviours (Mendoza, 2006), therefore a programme which addresses these issues by combining exercise time with family time may therefore prove acceptable and effective. A recent systematic review of childhood obesity prevention or management interventions involving parents and fathers found that only one study, the HDHK study, specifically targeted fathers (Morgan et al., 2017).

It is not surprising that the trials with the focus on childhood obesity (Rodearmel et al., 2006; Quattrin et al., 2012) did not result in greater changes in anthropometry among men, since men's weight loss was not the focus or primary objective of the research studies. The HDHK trials employed a short duration with multiple contact sessions for fathers and children and this appears to be a key factor in designing a successful weight management programme to men as a similar approach was adopted for the successful SHED-IT study (Morgan et al., 2011c).

The available literature on weight management interventions for couples was very limited and not of a high quality (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). Overall, these interventions were poorly reported and the impact of recruiting a partner in a weight loss intervention is not clear. The interventions were not successful at producing long term weight loss maintenance among participants (Burke et al., 1999;

Burke et al., 2002; Burke et al., 2003). The inconsistencies between correspondence with authors, incorrect labelling of graphs (see Appendix 12) and the lack of data available for men-only means that these results contribute very little to the knowledge base regarding efficacy of couples' weight loss interventions. The qualitative literature, however, has highlighted the propensity for women to facilitate or to hinder healthy eating and physical activity among men.

### 3.4.2 Limitations of Literature Review 2

Perhaps one of the greatest limitations of this review is the limited success of the search terms to retrieve relevant literature. Of the 24072 citations retrieved, seven articles were identified from this list for inclusion, and six were identified from the reference list of these seven included articles. While the retrieval of a large number of citations was considered on the one hand beneficial for ensuring that potentially relevant research articles would be screened, on the other hand the usefulness of the search terms to retrieve what was actually considered relevant research for inclusion was very low. Furthermore, almost as many research articles were identified for inclusion from the reference lists of included research articles than were from the thousands of citations retrieved as a result of systematic database searching. This suggests that the search terms developed were not piloted sufficiently and were not specific enough to retrieve relevant research articles. By reflecting on the success of the search terms, the researcher has learned that more rigorous piloting and further development of search terms would be necessary before beginning database searching.

Grey literature searching was not included in the searching process. By searching for unpublished materials, for example, dissertation theses, or by including conference abstracts, additional information and data surrounding this topic might have been

unearthed. However, because the reference lists of included research articles were also read for relevant citations, this will have improved the quality of the review. This is because additional published research of relevance was identified and included that was not obtained through other means.

Of the 13 articles included in this review, seven were based in Australia. This greatly limits the application of these findings to other cultures and contexts. Two of the research articles included in the qualitative synthesis had mixed-sex samples, however, it was unclear to what extent findings related to men or to women because gender was not reported with participant quotations (Burke et al., 1999; Faw, 2014). Therefore, “participant” or “person” was used in place of “men” when reporting findings. It must, therefore be noted that quotations may have been used or interpreted erroneously when analysed since the gender of the person who’s quote it was, was unknown, and therefore quotations have been used with care and caution. The incorporation of these research articles into the data analysis for this literature review therefore does impact the strength of the findings and conclusions drawn. These research articles did not meet exclusion criteria and were therefore included. They provided additional insights into couples’ weight loss experiences (Burke et al., 1999) and how social contacts and social relationships had an impact on the weight-related behaviours of younger adults (Faw, 2014). While the research article by Faw (2014) was considered to be of moderate quality, the lack of quotation context limits the ability of the researcher to interpret study findings in relation to men’s experiences.

This review excluded all research among participants with comorbidities to enable the transfer of findings into a general population health promotion campaign that targets the healthy overweight or obese male population, with fewer health risks to manage. As a result, very few articles were included in the review. A total of 94 articles were excluded when the full text was read, of which 14 were excluded because they met



health exclusion criteria. The findings of these excluded articles could have been of some relevance; however, the purpose was to explore weight loss among men where illness was not a limiting factor to enable findings to be more broadly transferable. A further limitation to the review is that participants were assumed, if not stated, to be heterosexual, and extracts interpreted in a heterosexual context.

A further limitation to the review is the mixture of research included in one review. Owing to the different types of research included, this review is presented as three smaller reviews and thus the findings harder to amalgamate. A decision was made to include the work by Quattrin (2012) even though it did not report baseline data for fathers only. Instead, BMI change was reported as not significantly different between participating mothers and fathers therefore the results for “parents” (mothers and fathers combined) is in some way likely to be representative of weight loss among participating fathers. For this reason this research article was included and although the data provided is extremely limited, it does contribute towards the knowledge base surrounding male weight loss interventions or programmes which are focused around the whole family instead of fathers only.

### 3.4.3 Conclusions and implications for future research

This review provides an important update as to what is currently known about the effectiveness of weight loss interventions involving men and their family members. The interventions that were most successful at eliciting weight loss among men were those where the primary objective was to reduce men’s weight, compared to the interventions that were designed to address childhood obesity. The interventions that produced the smallest changes men’s in weight, BMI and waist circumference were the couples’

weight loss interventions and the interventions targeting childhood obesity. The childhood obesity interventions included parents but produced insignificant changes among father's BMI and weight, or did not report fathers BMI or weight change (Rodearmel et al., 2006; Quattrin et al., 2012). The weight loss interventions for couples were, overall, poorly reported and did not elicit significant or long-term changes in weight, BMI or waist circumference (Burke et al., 1999; Burke et al., 2002; Burke et al., 2003). Future research regarding weight loss interventions for couples should seek to include a control group where partner support is not included, so that that effect of partner support on weight and waist circumference can be better understood and measured. To explore the influence of including children in weight loss groups for men, a subsequent weight loss intervention for men could include a control group (wait list), an intervention group for men only, and an intervention group for men and their children to attend. It is possible that the gender-sensitised nature of the HDHK programmes that specifically targeted overweight men rather than their family members was pivotal in the successful weight loss among men (Morgan et al., 2011b; Morgan et al., 2014).

This review has identified the lack of research on this subject matter taking place outside of Australia. It is evident that there is a need for qualitative research to provide greater context when reporting findings, such as gender, so that the findings of the research can be applied and understood more fully. Lastly, this review highlights the absence of qualitative research exploring perceptions regarding the influence that spouses and children have on men's weight loss behaviours.

#### 3.4.4 Overall summary of literature review chapters

The main findings from Literature Review 1 highlighted issues surrounding masculinity and social support for weight loss. A key finding from the first review was that social influences were crucial in men's weight loss efforts, and this finding guided the research question for the second literature review chapter. A literature gap was identified regarding what is known about how family members contribute to, or hinder, weight loss among men. The purpose of Literature Review 2 was to hone in on the influence that family members had regarding weight loss and health behaviours in order to better understand how these social relationships could contribute to the increasing prevalence of excess weight among men. The findings from Literature Review 2 identified the poor reporting of quantitative research regarding the success of couples' weight loss interventions and the limited impact that weight loss interventions to address childhood obesity had on men's weight. The review did find, however, that interventions specifically targeting father's weight loss were very successful. The qualitative literature review included in Literature Review 2 identified the influence that men's partners had on their dietary behaviours. The influence that a female relative had on men's dietary behaviours was only primary focus of only one of the included studies (Maclean et al., 2014). Together, both reviews have highlighted both the importance of social influences on men's weight loss success and efforts, which seem to be rarely considered in weight loss programmes, and that there is a lack of literature on this topic.

#### 3.4.5 Overarching aims of the PhD

The first three chapters of this thesis summarise how the prevalence of excess weight among men in England is continuing to increase, that men's family and social contacts seem to play a role on male weight loss behaviours and success, and that social norms and masculinity play a dominant role in how or whether men engage in weight loss

behaviours. Therefore, the aim of this PhD was to explore in depth the social influences relating to weight loss among men in England. By researching this topic, the study findings would contribute new knowledge to what little is known about how social relationships influence men's weight and weight-related behaviours. The overarching research question of this PhD research thus became:

*“How do social relationships influence men's dietary, physical activity and weight loss behaviours?”*

To answer this question, the following research questions were developed:

- i) Which social contacts and social relationships do men discuss in the context of their dietary, physical activity and weight loss behaviours?
- ii) Which social contacts and social relationships do men perceive to influence their dietary, physical activity and weight loss behaviours?
- iii) How do the social contacts and social relationships that men have influence their dietary, physical activity and weight loss behaviours?
- iv) Which social contacts and social relationships do women discuss in relation to men's dietary, physical activity and weight loss behaviours?
- v) How do women perceive social contacts and social relationships to influence men's dietary, physical activity and weight loss behaviours?

These research questions were used to develop two research studies, both qualitative in study design, in order to address the objective of the PhD; to explore how men's social relationships influence their weight.

Aims for the first research study (Study 1):

- i) To identify the social influences in men's accounts of dieting, physical activity and weight loss behaviours.
- ii) To identify the specific people that men believe play a role in their own nutrition, physical activity and weight loss behaviours
- iii) To explore men's perspectives on what, if any, social support they would desire to facilitate weight loss, healthy eating or physical activity.

Aims for the second research study (Study 2):

- i) To explore women's accounts of the social influences involved in male nutrition, physical activity and weight loss behaviours and specifically those of their male partners or their sons.
- ii) To identify the people that women believe play a role in male nutrition, physical activity and weight loss behaviours
- iii) To explore how women think they influence weight loss, healthy eating or physical activity among men.

The first research study was conducted among male participants and will be referred to throughout the thesis as Study 1. The second research study was conducted among female participants and will be referred to throughout the thesis as Study 2. A detailed explanation of the research study designs is provided in the Methods chapter (Chapter 4).

This literature review chapter had introduced what is already known regarding the influence of family members on men's weight loss. It goes on to summarise what has been gained in knowledge by both of the literature reviews that the PhD student (KH)

has undertaken as a part of the research degree. This chapter concludes by summarising how the findings from Literature Review 1 and Literature Review 2 informed the development of the overarching PhD research question. Following this, additional research sub-questions were devised as a way to address the overarching research question. The next chapter presents the research methods used to answer the research question, the studies that were designed to address the research question and the ways in which study data were collected and analysed.

## **Chapter 4:**

### **Methods**

#### 4.1 Introduction

This chapter addresses the research methods that were used to answer the research question of “How do social relationships influence men’s dietary, physical activity and weight loss behaviours?”. This chapter details why a qualitative study design was adopted in order to answer the research question and provides a rationale for the research methods used. The chapter discusses why Thematic Analysis was selected as a data analysis method and provides a rationale for why semi-structured interviews were used for the data collection process. Issues relating to ethical approval, and researcher and participant safety are then explored. This chapter then explains the data collection and analysis procedures that were employed, and how the data collected was stored, organised and interpreted. The chapter concludes with a discussion on reflexivity and the ways in which the researcher’s characteristics and own biases may have influenced the research project.

#### 4.2 Ontological and epistemological position

Ontology is the term used to describe the nature of reality (Guba and Lincoln, 1994). This research took a relativist ontological position, to explore the data subjectively from the participants’ perspectives, and to accept that there are many “truths”; each participant speaks what is true to their experience, and this is their own reality and their own truth. A relativist approach allows for many realities unlike the realist paradigm which assumes there is there is an objective truth to be discovered and measured (Crotty, 1998). Furthermore, a realist epistemological position was not adopted because

this often employed in quantitative methods in the quest to unearth a single truth (Braun and Clarke, 2013).

Epistemology is the term used to describe the nature of knowledge; it addresses the *“relationship between the knower or would-be knower, and what can be known”* (Guba and Lincoln, 1994, p. 108). Epistemological approaches typically fall on the spectrum between positivist approaches and constructivist approaches (Guba and Lincoln, 1994, Table 6.2, p. 112). This research took a constructivist approach; a social constructivist approach assumes that *“reality is socially constructed”* (Green and Thorogood, 2009, p. 15), and therefore this research recognised that participant’s knowledge is constructed through interactions with people and the social environment. It identifies the social and cultural influences on human behaviours and acknowledges the *“humanness”* of participants (Lincoln and Guba, 1985, p. 27). Creswell (2009, p. 8). explains that *“constructivist researchers often address the processes of interaction among individuals”* and this approach was appropriate to meet the needs of the research question.

## 4.3 Study design

### 4.3.1 Rationale for a qualitative study design

Qualitative research is described in its simplest form as research that uses words as data (Braun and Clarke, 2013, p. 2) and that focuses on *“meaning, not numbers”* (Braun and Clarke, 2013, p. 20). A core component of qualitative research is subjectivity; quantitative research values objectively measured phenomena. Qualitative research can be used to understand human interaction, how people interpret these interactions, and how people make meaning from them (Pope, Ziebland and Mays, 2000). A qualitative design was appropriate since the research sought to explore the subjective experiences and perceptions of people surrounding men’s dietary, physical activity and weight loss



behaviours. Qualitative research can be viewed by other researchers as an “add-on” to quantitative research rather than a research method in its own right, and is often published in lower impact journals than quantitative research (O’Cathain et al., 2014). However, NICE suggest that the planning and development of a behaviour change intervention, those designing the intervention should address “*what contextual factors need to be taken into account (what are the barriers to and opportunities for change and what are the strengths/potential of the people you are working with)?; which social factors may directly affect the behaviour, and can they be tackled?*” (NICE, 2007, p. 14). A qualitative study design is also appropriate when exploring under-researched topics; qualitative research can provide “*preliminary insights*”, thick description and context into a research problem and therefore guide future research (Hesse-Biber and Leavy, 2011, p. 10). Furthermore, a qualitative approach enabled the research to capture the “*subtleties and complexities about the research subjects and/or topic are discovered that are often missed by more positivistic enquiries*” (Anderson, 2010, p. 2). An important finding of both literature reviews was that there is limited literature around this research topic and therefore qualitative research methods were selected because this provided the “*opportunity to ask new and open-ended questions*” (Hargrove, 2016, p.17); by asking these questions the researcher therefore had the potential to unearth novel and important information regarding male weight loss influences. Therefore, a qualitative study design was uniquely suited for answering the research questions.

#### 4.3.2 Rational for using Thematic Analysis

Approaches to qualitative data analysis can broadly be organised into three categories: sociolinguistic methods, which explore the use and meaning of language; methods typified by grounded theory that focus on developing theory; and methods such as

content and thematic analysis, that describe and interpret participants' views (Smith and Firth, 2011). Thematic Analysis (Braun and Clarke, 2006) was selected as the method for data analysis. Thematic analysis has been defined as "*a method for identifying, analysing and reporting patterns (themes) within data*" (Braun and Clarke, 2006, p.79). Thematic Analysis it is a stand-alone data analysis method rather than a methodology which permitted greater theoretical flexibility when exploring and analysing the data since it is not theoretically-bound. Howitt (2016) elaborates on the usefulness of this theoretic flexibility when analysing data: "*Thematic analysis, unlike grounded theory, is not aimed at theory generation ... the themes developed in thematic analysis are not expected to be related or inter-connected in some way, whereas the categories identified from a grounded theory analysis do need to be explored in terms of their relationships with each other.*" (Howitt, 2016, p.175). Thematic Analysis is an appropriate method to use to explore experiences, understandings and perceptions, and to explore, question and identify patterns and themes across the dataset as this study sought to do (Braun and Clarke, 2006). A Thematic Analysis, as prescribed by Braun and Clarke, was undertaken such that the analysis process went beyond organising and sorting the data as might be the objective of a thematic content analysis, and instead provided a detailed interpretation of the data (Howitt, 2016). Furthermore, Thematic Analysis is an appropriate research method for situations wherein "*a researcher seeks to learn about individuals' thoughts, beliefs, attitudes and opinions involving real-world experiences and occurrences.*" (Coleman, 2016, p. 58). It has also been noted that this form of analysis is well-suited for research questions where existing data is limited, and rich detail is sought after (Braun and Clarke, 2006). The data analysis method prescribed by Braun and Clarke is particularly useful for inexperienced researchers because it ensures that a thorough and systematic approach to data analysis is undertake (Braun and Clarke, 2013).

Grounded Theory (Glaser and Strauss, 1967; Charmaz, 2006) is a methodology with fixed ontological and epistemological assumptions and is typically used in research which involved a transition or adjustment in a person's life. Furthermore, this methodology seeks to generate theory, which was not the aim of this research. Other methods that were discounted included discourse analysis and conversation analysis, given the focus was not to analyse linguistics. Framework analysis (Ritchie and Lewis, 2003), while also not bound to a particular epistemological standpoint, was not used as can be considered more descriptive than analytic, and is a more useful strategy when managing larger datasets (Gale et al., 2013). Gale (2013) goes on to note that *"It is therefore essential that studies using the Framework Method for analysis are overseen by an experienced qualitative researcher, though this does not preclude those new to qualitative research from contributing to the analysis as part of a wider research team"* (Gale et al., 2013, p.2). Since the data collection, analysis and report write-up were to be led by the PhD student (KH) who had a small amount of previous qualitative experience, the use of Framework Analysis was not considered appropriate. Framework analysis offers less flexibility than Thematic Analysis regarding the prescribed matrix format that the data are indexed and charted in. Additionally, it does not necessitate the systematic coding of the whole dataset which therefore is less well suited to exploratory research. Interpretive Phenomenological Analysis (IPA) (Smith, Flowers and Larkin, 2009) was also not used because it is typically better suited to small sample sizes, it focuses on participant articulation of experiences, and is more psychologically-based rather than socio-culturally oriented as the current research was. However, while IPA was not used as a research methodology, the findings were explored with a phenomenological perspective, to explore how men conceptualise and experience weight management in a social context.

#### 4.3.3 Rationale for face-to-face, semi-structured interviews

Interviews are said to be the most common method of data collection for qualitative research (Jamshed, 2014). Qualitative interviews can be broadly categorised as structured, semi-structured or unstructured (Qu and Dumay, 2011). Semi-structured interviews were the most appropriate type of interview to meet the research aims. It was anticipated that enough about the topic would be known from a preliminary review of the literature, such that an interview schedule could be prepared based and questions structured in a logical order (Richards and Morse, 2012). This type of interview permits flexibility in the order that questions are asked and the use of additional planned and unplanned prompts to probe topics in greater depth (Kajornboon, 2005; Richards and Morse, 2012). It has been noted that *“probes and follow up questions are important aspects of a semi-structured interview as they allow a fuller explanation of topics of interest, ensuring the specific dimensions of a question area are explored in all interviews”* (Bourgeault, Dingwall and De Vries, 2010, p. 319). Within a semi-structured interview, questions can be re-worded to aid participant understanding and to clarify what is being asked. Semi-structured interviews allow the researcher to retain control over the topic discussed compared to unstructured interviews which are usually participant-led, while still retaining flexibility so participants are able to discuss issues of importance to them (Braun and Clarke, 2006). Unstructured interviews have the potential to be problematic for a less-experienced researcher to lead (Doody and Noonan, 2013). Using a qualitative study design with semi-structured interviews allowed the researcher to explore in-depth the topics with each participant and identify any “connections” between each participant (Seidman, 2006, p. 52).

Individual interviews were used instead of focus groups because they provide the opportunity for each participant to talk in depth uninterrupted and ensure that each

participant voice is heard (Braun and Clarke, 2013). Focus groups can be useful for exploring group interactions, whereas one-to-one interviews provide a confidential space to discuss personal or sensitive issues (Pope and Mays, 2008).

Face-to-face interviews provided the opportunity to build rapport between the participant and the researcher, and to capture and observe data such as body language or facial expressions that would have been lost if telephone interviews had been used (Jackle, Roberts and Lynn, 2006). There are limitations to conducting interviews instead of focus groups, such that focus groups do enable the researcher to gather the views of multiple people at once, thus saving time, however they produce different data to individual interviews. As highlighted by Literature Review 1, discussing diet with other men was not seen as masculine, and was generally avoided when possible. Therefore, to avoid this, and owing to the potentially sensitive nature of a discussion about social relationships and weight, one-to-one interviews were selected as method for data collection.

The interview guides (Appendices 13 and 14) were informed by current literature gaps, and were prepared using structured, open-ended questions to facilitate the continuity of questioning across participants and the collection of relevant data. By asking open-ended questions, the participant can provide a detailed response and discuss what is important to them, unlike a closed-question or a question with a fixed response (Braun and Clarke, 2013). The researcher used eye contact, nodding, verbal prompts and verbal affirmations to encourage participants to talk freely and fully during their responses (Corbetta, 2003; Doody and Noonan, 2013).

The interview schedule was guided by health behaviour theories including the Theory of Planned Behaviour (TPB) (Ajzen and Fishbein, 1980; Ajzen, 1991) and Self-Determination Theory (Deci and Ryan, 1985) in order to explore people's attitudes,

self-efficacy, knowledge, and control beliefs regarding the interview topics. As discussed in Chapter 1, the Medical Research Council recommends the use of health behaviour theory in the design of complex interventions (Craig et al., 2008). It was considered that by using health behaviour theory throughout the research process, this may improve the transferability of results, enabling them to be mapped from one context to another, or to be used in the design stage of a future intervention. Therefore, health behaviour theory was considered both in the design of the interview schedule and in the interpretation of data. Health behaviour theory was to explore the research findings in greater depth and to explore how the constructs of these health behaviour theories (attitudes, subjective norms, perceived behavioural control, motivation, self-efficacy) related to actual behaviours and behavioural intentions.

#### 4.3.4 Ethical Approval and Ethical Considerations

##### *4.3.4.1 Ethical approval*

Full ethical approval for Study 1 was granted by the University Research Ethics Committee (UREC) at Oxford Brookes University in March 2015 (Ethical Approval Number 150910) (Appendix 15) and recruitment ran from April to December 2015. Several amendments were made to the study between these dates to optimise recruitment, which were approved by the UREC (Table 17).

**Table 17** Amendments made to Study 1

<b>Amendment number</b>	<b>Change made</b>	<b>Date approved by UREC</b>
1	Interview location change to University setting Participant information sheet re-worded at collaborator's request	22/04/2015
2	Eligibility based on location changed BMI reduced from 28 kg/m <sup>2</sup> to 24 kg/m <sup>2</sup> to allow for the inclusion of those who were overweight (BMI ≥ 25 kg/m <sup>2</sup> ) or nearing this classification.	09/07/2015
3	Recruit participants via social media and online	15/07/2015
4	Recruitment location changed Interview location changed from University setting Interview schedule amended after three interviews to include questions around the role of social support in relation to male weight loss	29/09/2015
5	Inclusion of short demographic questionnaire Increase voucher from £5 to £15	05/10/2015

Full ethical approval for Study 2 was granted by the UREC at Oxford Brookes University in October 2015 (Ethical Approval Number 150957) (Appendix 16) and recruitment ran from October 2015 to January 2016. No significant amendments were made to study 2, other than changing the estimated sample size needed from 10 to 20 volunteers. This change was both requested to the UREC, and approved by the UREC, in December 2015.

#### *4.3.4.2 Ethical considerations*

There were many ethical issues that were taken into consideration when designing both research studies. This section discusses issues surrounding anonymity, confidentiality, informed consent and data security.

As discussed in the next section, participants were recruited from one county in the South West of England, and interviews were conducted in public places. From a design perspective, this introduced possible issues surrounding anonymity. In order to make the participant aware of these issues they were discussed in the participant information sheet that all participants were provided with before completing a consent form.

To anonymise transcripts and reduce the likelihood of participants being identifiable, names and places were removed from the transcript and instead replaced with, for example [partner's name] or [local town]. To improve researcher safety, interviews were conducted in public places, which resulted in the topics being discussed in an environment where other people could hear the conversation or was somewhere where the participant was known. For this reason, the participants were free to choose a public location and a time that met their requirements for privacy and to avoid familiar faces if this was a concern. One participant mentioned that she had chosen a specific café a few miles away from her home to avoid local "gossips". Often, cafés were chosen as the interview location by participants, and the participant and researcher would sit in a discrete part of the café; the researcher would also wear casual clothes so as to "fit in" with how other people were dressed. To improve privacy for participants during interviews in public spaces, a voice recorder with a microphone was used to better detect the participant's voice when speaking at normal volume.

All persons interested in participating who contacted the researcher were first provided the relevant information sheet by post or electronically (Appendices 19 and 20). If people showed an interest in the study and willingness to participate after reading the



information sheet, they were asked to confirm their eligibility to take part, and then an interview date, time and location was agreed. When meeting at the agreed location for the interview, the researcher offered all persons the opportunity to re-read the information sheet and ask questions before completing the consent form (Appendices 21 and 22) and providing informed consent to take part. Participants were given the choice to participate and to subsequently withdraw from the research studies if they then chose to. It was considered important that participants made an informed decision regarding their involvement in the research studies. Participants who agreed to participate then completed a short SES status questionnaire so that more contextual information was available during the data analysis process (Appendix 23) and after this, the interview began and was audio recorded.

Once the interviews had been completed, there were ethical considerations surrounding data security and the handling of the interview data. The interview audio files were uploaded securely to the Oxford Brookes University server using a USB cable. Audio files were deleted once the anonymised transcripts had been created and checked for accuracy. Anonymised transcripts were stored on Google Drive, accessible using 2-step authentication to improve security, and additionally in a file on the University server. Transcripts were also uploaded into NVivo 11 software as a part of the data analysis process. The NVivo file was password protected to improve the security of this data and the password was shared only with PhD supervisors. The completed consent forms and participant demographic questionnaires were stored separately in a locked filing cabinet at Oxford Brookes University.

#### *4.3.4.3 Ensuring participant and researcher well-being*

This section discusses how the safety and well-being of the participants and the PhD student (KH) were ensured. Participants were directed to the NHS Choices website if they had medical questions for the researcher during their interactions with the PhD student (KH). Steps were implemented to ensure researcher safety, as detailed in the document “A Code of Practice for the Safety of Social Researchers” (Social Research Association, 2006). These included, but were not limited to; using private transport, conducting interviews in public places, ensuring a trusted contact knew where she was going and at what time she was expected to make contact again, and carrying items such as a torch, mobile phone and attack alarm. There were no known safety incidents involving the researcher or the participants. On two occasions the researcher noticed that the interview duration had exceeded the anticipated duration and over-ran; the researcher explained the situation to the interviewee, paused the interview very briefly, and sent a text message to her trusted contact that she was well and that the interview was over-running.

#### 4.4 Participant selection, recruitment and characteristics

##### 4.4.1 Rationale for recruiting participants from one county in the South West of England

For pragmatic reasons, and due to the higher than average proportion of adults with excess weight compared to the national average, this PhD research was focused on one county within the South West of England (see Table 18). While the proportion of adults carrying excess weight in the South West of England is 0.1% less than the national average, the county of focus within the South West of England has an above average prevalence of overweight (BMI 25.0 – 29.9 kg/m<sup>2</sup>) and excess weight (BMI ≥ 25.0 kg/m<sup>2</sup>) which can be seen in Table 18 (Public Health England, 2016a).

**Table 18** Weight classifications of adults in the South West and England

	<b>Healthy weight (BMI 18.5 – 24.9 kg/m<sup>2</sup>)</b>	<b>Overweight only (BMI 25.0 – 29.9 kg/m<sup>2</sup>)</b>	<b>Obese (BMI ≥30.0 kg/m<sup>2</sup>)</b>	<b>Excess weight (overweight and obese, BMI ≥ 25.0 kg/m<sup>2</sup>)</b>	<b>Percentage difference in excess weight between England average and county average</b>
<b>County of focus</b>	33.5%	41.5%	23.8%	65.3%	<b>+ 0.5%</b>
<b>South West</b>	34.1%	41.1%	23.6%	64.7%	<b>- 0.1%</b>
<b>England</b>	34.0%	40.4%	24.4%	64.8%	<b>+ 0.0 %</b>

Source: (Public Health England, 2016a)

Approximately 20 men were sought for recruitment to Study 1 and 20 women for Study 2. This was based on an approximation of how many people would be required to reach data saturation, and this estimation was informed by other qualitative studies (Allan, Hoddinott and Avenell, 2011; Chambers and Swanson, 2012).

#### 4.4.2. Inclusion and exclusion criteria

This section details the inclusion and exclusion criteria for both qualitative research studies and provides an explanation as to why these specific criteria were introduced.

Participants were eligible to take part in Study 1 if they:

- were male and had a BMI between 24-40 kg/m<sup>2</sup>
- were aged 18-60 years
- had weighed roughly the same for the past six months

- were not currently dieting
- were living within the county in which recruitment was taking place.

Participants were not eligible to take part in Study 1 if they met any of the exclusion criteria:

- had any form of diabetes
- had any heart renal joint or metabolic disease
- were a smoker
- had a respiratory disease that was controlled with medication.

Men were sought for recruitment who were not currently losing weight, such that during the data analysis, possible factors and barriers to weight loss among men who were at risk of, or carrying, excess weight but who were not currently losing weight could be explored. This was considered important since excess weight is a risk to health (Mokdad et al., 2003). It was considered that the sample may include men who were in the pre-contemplation phase of weight loss (Prochaska and DiClemente, 1983), as well as men who were not currently engaging in weight loss behaviours, but due to their weight status potentially classified them as overweight or obese, it was hypothesised they may in the future consider weight loss, and the study sought to elicit perceptions and social influences surrounding this topic.

Men were recruited who were aged 18-60 years old, to capture the experiences and perceptions of people who were of working age rather than of retirement age. The United Nations classification for older adult is aged 60 years and over (United Nations, 2018). This research therefore sought to include those who were not classified as older adults, since older adults can experience age-related changes in appetite, bone density,

muscle mass, and sarcopenic obesity (Jafari-Nasabian et al., 2017) which could be a limiting factor regarding their dietary and physical activity experiences and influences.

The BMI inclusion criteria for Study 1 stipulated that men were eligible if they had a BMI between 24.0 and 40.0 kg/m<sup>2</sup>. Information on how to calculate BMI was provided in the information sheet. This inclusion criteria therefore included some men who were classified as healthy weight (24.0 – 24.9 kg/m<sup>2</sup>), as well as overweight and obese (BMI 25.0 – 40.0 kg/m<sup>2</sup>). An upper BMI limit of 40.0 kg/m<sup>2</sup> (Class III obese) was introduced as it was hypothesised that those with a BMI >40 kg/m<sup>2</sup> may have a much greater risk of health conditions or may experience mobility issues relating to excess weight (Cannioto, 2010; Mokdad et al., 2003; Wang et al., 2013a). The BMI inclusion criteria included men with a BMI 24.0-24.9 kg/m<sup>2</sup> who, using BMI classifications, are considered a healthy weight. This was originally to target men who were near the BMI classification for overweight or obese (BMI ≥25 kg/m<sup>2</sup>) and were considered to be at future risk of entering this category. This is the upper end of healthy weight and recent evidence from a large multi-continent meta-analysis found that all-cause mortality among smokers increased after BMI 23 kg/m<sup>2</sup> and after BMI 24 kg/m<sup>2</sup> in people who had never smoked (Aune et al., 2016). By including men who were in the healthy weight range of BMI, the findings of the research study became less transferable to other populations of overweight and obese men because the findings were no longer limited to men carrying excess weight. However, after reflecting on the research process and self-reported BMI by participants, it is possible that some of the men who took part may have been classified as overweight or obese using BMI, but did not wish to identify as being overweight or obese and therefore provided a BMI that was within the healthy-weight range. It might also be possible that men did not measure their BMI accurately, or did not measure their BMI at all. It is possible that men reported having a healthy weight BMI based on their own perceptions of their weight and health; it is known that

weight misperceptions are prevalent among men as well as women (Burke, Heiland and Nadler, 2010).

The sample was limited to those without illness or infirmity. The Physical Activity Readiness Questionnaire (PAR-Q) is often used as a screening tool in physical activity research to determine the risk of participation to participants. The questions on the PAR-Q were used as a guide for exclusion criteria. The purpose of the research was to explore the social influences on weight loss behaviours. Therefore, other possible influences such as those related to health conditions were excluded. It should be noted that while men were recruited who reported meeting the inclusion criteria, and not meeting health exclusion criteria, this was not measured by the researcher and was also self-reported. Therefore, this introduces limitations regarding the reliability of the data reported by participants. It is known that health conditions can be prevalent that are not currently diagnosed; in 2015 Diabetes UK estimated that 1.1 million people in the UK had diabetes that had not been diagnosed (Diabetes UK, 2016). The British Heart Foundation also estimated that 5 million people in the UK were living with undiagnosed high blood pressure (British Heart Foundation, 2019). It is therefore a possibility that the men who took part in this study had identified as being healthy, however, this could have been their perception and they could have had an underlying undiagnosed condition.

As a result of these inclusion and exclusion criteria, it was anticipated that the findings of this research could be applied to a large-scale intervention or health promotion campaign that targets the healthy overweight or obese male population. In reality, as discussed in places throughout the thesis, there are many limitations regarding the transferability of the study findings to contexts or populations outside of this sample.

Participants were eligible to take part in Study 2 if they:

- were partnered or close friends with a male who had considered losing weight, who has attempted to lose weight or who was currently undertaking weight loss.
- aged between 18-60 years
- living in the county in which recruitment was taking place

These inclusion criteria provided an opportunity to engage women who may have been partnered to men who took part in Study 1. Additionally, women were eligible for inclusion if their male relative or partner was currently losing weight. This was thought to provide additional information regarding women's influence, and social influences, upon male weight loss behaviours. The women were recruited using strategies similar to those employed in Study 1. There were no BMI inclusion criteria for women, since the focus of the research was male weight loss and not their own weight, however, self-reported BMI was collected in order to provide context to the interview data collected. Information on how to calculate BMI was provided in the information sheet.

Participants were asked to calculate their own BMI because this was considered less intrusive than asking participants for their weight and height so that that PhD student could calculate this. This decision was made because weight was considered to be a potentially sensitive subject, particularly among women, which is perhaps reflected by the higher prevalence of eating disorders among women compared to men (Hudson et al., 2007; Keski-Rahkonen and Mustelin, 2016). Women were eligible to take part if they were aged 18-60 years, similarly to men, as it was postulated that men and women of a similar age may be partnered. It was not a requirement that women be living with the male relative or friend that they wanted to discuss the social relationships in relation to weight of.

#### 4.4.3 Sampling strategy

Study 1 was originally designed to target men living in the most deprived areas of the target county, since thirteen areas within the target county fell within the bottom 10% for deprivation in England (Strategic Needs Analysis Team, 2016) and deprivation and excess weight have been correlated (Baker, 2018). The sampling strategy was to be based upon participant postcode which, using the Indices of Deprivation, provided a measure of health inequality. Following a poor uptake of men to the research study, which is discussed in greater depth later in this chapter, and a change in focus of the research study, the sampling strategy was changed, and all postcodes were eligible for inclusion throughout the whole county. A convenience sampling approach was later adopted to complete recruitment for Study 1, and a convenience sampling approach was adopted from the start of Study 2 in light of the recruitment difficulties experienced with Study 1.

#### 4.4.4 Recruitment strategy

Participants were recruited in similar ways for both Study 1 and Study 2. Recruitment strategies included recruitment posters (see Appendices 17 and 18) which were placed around the county in shop windows and shopping centres. Participants were also recruited online via social networking websites such as Facebook and Twitter. Additionally, an advert for male volunteers was placed in a local newspaper under the “wanted” section.

The recruitment for Study 1 ran from April 2015 to December 2015. The recruitment for Study 2 ran from October 2015 to January 2016. There were several months where recruitment and data collection for Study 1 and Study 2 overlapped. Study 2 recruitment



started during the same month that the final changes to the Study 1 recruitment strategy were proposed and approved. Changes regarding recruitment strategy were mirrored into Study 2, and participants A total of 19 participants took part in Study 1 and 16 took part in Study 2. It was originally anticipated that only ten interviews might be required to complete Study 2 and reach data saturation. However this was extended with approval from the UREC for up to 20 participants. Recruitment for Study 1 was stopped after 19 participants had been recruited and interviewed, and after 16 participants had been recruited and interviewed for Study 2 because it was estimated that data saturation had been reached.

#### 4.4.5 The anticipated and encountered difficulties of recruitment

The recruitment for Study 1 started in April 2015, and by August 2015, three participants had been recruited and interviewed; approximately 20 participants were being sought to take part. Other research has also found that men can be difficult to recruit and engage in health research (Pagoto et al., 2012). Siedman (2006) notes that: *“the interviewer must strike a balance between too easily accepting a quick expression of disinterest from a potential participant and too ardently trying to persuade a reluctant one that she or he really should participate”* (p. 54). In September 2015, following conversations with other PhD students and with her PhD supervisors regarding recruitment strategies and experiences, the PhD student proposed several changes to the recruitment strategy. These were approved by the UREC and implemented (see Table 17). Key changes to the recruitment strategy were to increase the voucher from £5 to £10 and to change the interview location. From September 2015 to December 2015, 16 more men were recruited and interviewed.

Barriers to recruitment were considered to centre on the topic and nature of the research study. Reflecting on the difficulties experienced with the recruitment of men to Study 1, the PhD student considered whether a “talking” study may have been perceived as less masculine in comparison to a study which might involve taking blood or measuring strength or endurance. It is known that men may frame things that are otherwise damaging to masculinity (such as dieting) in terms of science (Mallyon et al., 2010).

The PhD student also considered that men may have been deterred from engaging in a research study which involved talking about dietary behaviours with a female researcher. The impact of the researcher’s gender, coupled with what is known about perceptions of women and their dietary expertise (Mallyon et al., 2010; Tanner, Petersen and Fraser, 2014), may have deterred males who were otherwise interested in the research topic and study participation. Occasionally, the male participants who were recruited and interviewed shared their reasons for joining in with the research study; many empathised with the research process and recruitment struggles, and so volunteered to help for this reason.

The PhD student initially had fewer concerns about her ability to recruit women to Study 2; the researcher’s own biases and views were that, since diet is a more typically feminine topic, it should not be as difficult to recruit women to talk about diet than it was to recruit men. However it was also anticipated that there may be difficulties with recruitment because weight, body size and dieting were considered to be potentially sensitive or distressing topics for women; the prevalence of eating disorders is higher among women compared to men (Hudson et al., 2007; Keski-Rahkonen and Mustelin, 2016 Solmi et al., 2016). It was therefore considered that this research topic might contain issues that a participant may feel anxious or concerned about talking with the researcher about depending on what their own experiences and relationships with food and dieting were. In light of this, participants were reminded that at if they had further

questions or concerns about any of the topics that had been discussed, to speak with their doctor or to access the NHS choices online resource. The actual recruitment experience for Study 2 was a success and the recruitment and data collection for this study were completed within four months.

#### 4.4.6 Characteristics of participants recruited to study 1 and study 2

Due to the nature of the sampling strategy used, it was the case that a small number of participants knew each other, and in a small number of cases, participants were in relationships with each other. Participants provided their BMI, date of birth, education status, employment status, postcode and marital status on a short SES questionnaire (Appendix 23). A table of participant characteristics for men and women are provided in the results section for the corresponding studies (Tables 21 and 24). All of the study participants completed all parts of the questionnaire, except one woman who did not provide her BMI. The participant's post code was used to calculate the Indices of Deprivation. Available data suggests that those living in the most deprived regions have a lower life expectancy and poorer health outcomes; men living in the most deprived areas are living approximately 10 years less than those living in the least deprived areas (Office for National Statistics, 2018). SES is also associated with obesity (McLaren, 2007). Postcodes are grouped into small areas called lower layer super output areas (LSOA). In 2015 there were 32844 LSOAs in England. The indices of deprivation score can range between 1 and 32844, owing to the fact there are 32844 LSOAs. A score of 1 represents the most deprived area and a score of 32488 represents the least deprived area. Deprivation score is calculated based on income, employment, education, health, crime, barriers to housing and services, and living environment (Office for National Statistics, 2018). LSOAs are then ranked in order of deprivation. This information

provided an overview of the affluence of where participants recruited were residing. Originally one of the aims of the research studies had been to explore perceptions among participants living in the most deprived areas of the county, based on which postcode they resided at, however this was not feasible due to recruitment difficulties. A sub-set of the SES data that was collected was used when analysing interview data. A summary of participant characteristics is provided at the start of Chapter 5 and 7 for men and women respectively. A summary of deprivation status based on postcode is provided below (Table 19) for all participants. Most participants were not living in the most deprived areas of the county.

**Table 19** Indices of deprivation of participants based on postcode of residence

<b>Overall deprivation</b>	<b>Study 1 (men)</b>	<b>Study 2 (women)</b>
0-25 % (most deprived)	1/19	2/16
26-50 %	2/19	2/16
51-75 %	10/19	8/16
76-100 % (least deprived)	6/19	4/16

## 4.5 Data collection and analysis

### 4.5.1 Conducting and recording interviews

A total of 35 semi-structured interviews were conducted. Interviews took place within a meeting room at a local University (*n* 3) or within a public space such as a café or a pub (*n* 32). The benefits versus risks of conducting interviews in a public setting were considered by the PhD student and her supervisors. The benefits of conducting interviews in a public setting meant that the interviews were in a less artificial environment which could have influenced the data collected. Conducting interviews in

public areas across the county provided more geographical flexibility and recruitment opportunities such that more people who were interested in participating and were able to do so. As discussed in the section regarding ethical approval, the strategy of conducting interviews in a public place did raise issues of anonymity and confidentiality. It is possible that due to a public interview location, participants may not have discussed sensitive matters, or may not have discussed them in as much details as they may have liked to. Participants may have had concerns about being over-heard or seen by someone they knew; however, these issues were only raised by one participant at the end of her interview, as a passing comment to the PhD while discussing her decision to be interviewed at a café away from “local gossips”.

Participants were sent an email or a private message on a social networking site the day before their interview to check whether they were still available and willing to participate. The interviews took a semi-structured format; a rationale for this type of interview was provided earlier in this thesis in section 4.3.3. Interviews were recorded on a digital voice recorder (Olympus VN-8500PC, Olympus Corporation, Tokyo, Japan) to ensure an accurate representation of the interview was captured. A small, discrete microphone was attached to the digital voice recorder to improve audio quality by reducing background noise. The voice recorder was a small device, approximately the size of a mobile phone, and was placed on the table during the interview. Interviews in public spaces predominantly took place in supermarket cafés. Interviews lasted on average 46 minutes and ranged between 24 and 77 minutes. A structured interview schedule was used to facilitate consistent questioning across all interviews. The interview schedule for each study included 50 questions, organised into different categories (see Appendices 13 and 14). The interview schedule was developed by the PhD student (KH) and was reviewed and amended by a previous member of the research team before being approved by the UREC.

As noted by Bourgeault, Dingwall and De Vries, “*an important first step to constructing an interview guide is to develop a list of topics to be covered*” (2010, p. 319). To develop the interview schedules, first, the core topics were identified that were surrounding the research question (obesity, diabetes, diet, physical activity, weight loss groups), and from each of these core topics approximately eight questions of importance to the research question were developed. While others recommend a shorter interview guides of approximately 10 questions (DiCicco-Bloom and Crabtree, 2006; Gubrium and Holstein, 2001), the interview schedule that was developed and used by the PhD student contained 50 questions. The length of an interview guide is said to depend on the amount that it is structured (Bourgeault, Dingwall and De Vries, 2010). Probing questions, prompts and structured question we included on the interview schedule to ensure in-depth responses to questions and continuity across interviewing while the PhD student gained experience in this field.

The interview schedules for both qualitative studies included eight questions on the topic of Type 2 diabetes. The questions focused on what the participants understood Type 2 diabetes to be, the impact of Type 2 diabetes on health, and how this could be associated with lifestyle choices. It was deemed relevant to include questions on Type 2 diabetes because at the time the study was designed this was of relevance to the research question. The PhD research question was later revised and then finalised after the data collection had taken place to focus on social interactions and relationships. The data regarding Type 2 diabetes was no longer of relevance to the revised research question and was therefore not included in the data analysis or final write-up of the study findings.

After conducting interviews, the researcher made notes in a research diary regarding how well the interview had gone; what had been difficult, what had gone well, and anything that was considered important to record that might be important such as body

language or facial expressions (Braun and Clarke, 2013). Additionally, the research diary served to record participant observations and other details that might be lost once the audio file had been transcribed, for example, when participants used sarcasm or raised their voice (Braun and Clarke, 2013). These were converted into electronic documents by the researcher and stored securely in an electronic format. A short extract of the field notes can be seen in Appendix 24.

#### 4.5.2 Interview transcription

Interviews were transcribed verbatim by the researcher (*n* 3) and by two professional transcription companies (*n* 4, Vanan Transcription, New York, US; *n* 28, Type it Write, Newcastle-upon-Type, UK). The researcher transcribed the first three interviews to gain experience in qualitative research methods. Professional transcription services were sought for the remaining 32 interview recordings. Vanan Transcription transcribed 8 of the interview recordings but provided a poor accuracy of transcription; Type-it-Write was used for the remaining 24 transcripts. All transcripts were checked for accuracy by the researcher before interview audio files were deleted. The consent form contained a section on assuring participant anonymity which was initialled to confirm their understanding of this, and they also signed the consent form.

#### 4.5.3 Organisation and analysis of the data

Data was analysed using Thematic Analysis (Braun and Clarke, 2006). The data analysis process was assisted by NVivo 11 software (NVivo, QSR International, 2015) which facilitated the management of data, the organisation of codes and the

development of themes (Bazeley and Jackson, 2013). For both studies, the coding process was conducted by the PhD student (KH) and took place within NVivo. It involved the systematic coding, line-by-line, of each transcript for data relevant to the research questions. Codes were reviewed, renamed, collated and developed into preliminary themes. In the data analysis process for Study 1, two transcripts were also coded by one member of the supervisory team (LH), and all codes and themes discussed at length by the supervisory team. One member of the supervisory team (LH) read large portions of the coded data in NVivo. In the data analysis process for Study 2, two transcripts were coded by one member of the supervisory team (LH) early in the coding process, and two transcripts were coded by another member of the supervisory team (JA) toward the end of the coding process. It has been suggested that to ensure trustworthiness of conclusions, approximately 10% of the transcripts should be coded by a second coder (Lombard, Snyder-Duch and Bracken, 2002). The researcher read each transcript many times before beginning coding and developing themes. The themes were reviewed and discussed by all members of the supervisory team several times from beginning to end of the data analysis process to ensure themes were a fair and accurate representation of the data. Braun and Clarke (2006) detail a six-step guide for Thematic Analysis which was also adopted in the data analysis process (see Table 20, below):



**Table 20** Summary of data analysis procedures  
(Adapted from Braun and Clarke, 2006, p. 87)

Step	Stage of Thematic Analysis
1	Familiarisation with the data. Transcribing the data, reading, re-reading, and noting initial ideas and codes.
2	Generating initial codes. Coding the entire data set in a systematic fashion.
3	Searching for themes. Developing candidate themes.
4	Reviewing themes. Checking to see whether candidate themes fit the coded extracts and the data set.
5	Defining and naming themes. Refining the themes and theme names.
6	Producing the report. Selecting vivid, compelling extract examples and relating the analysis to the research question/s.

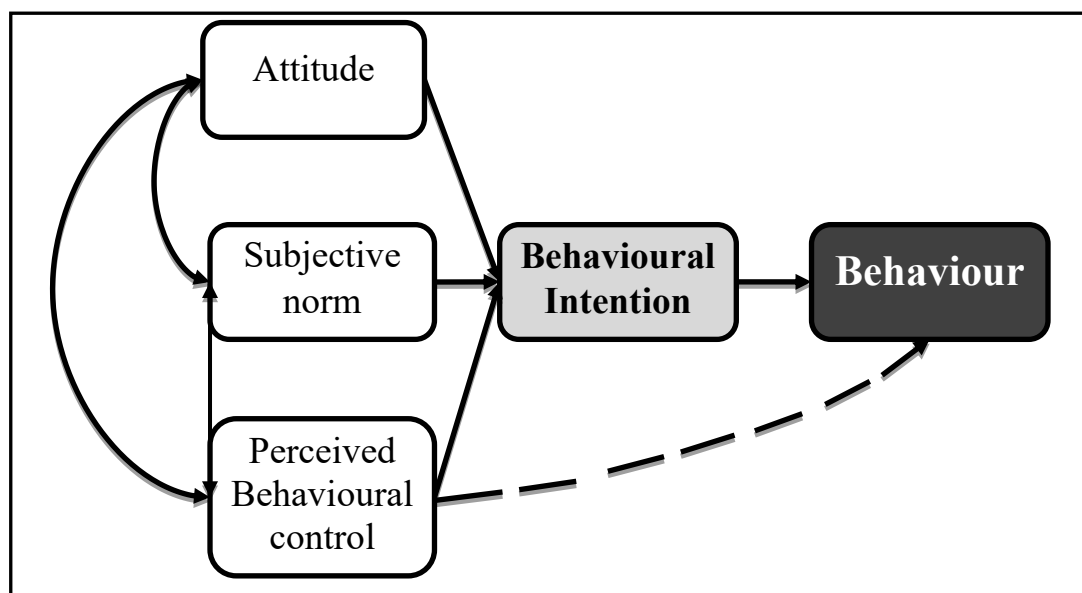
Further to this six-step guide, the Braun and Clarke 15-point checklist for “good thematic analysis” (Appendix 25) was used (Braun and Clarke, 2006, p. 96). Issues relating to quality and rigor of the data collection and analysis are addressed later in this chapter (section 4.5.5).

Chapters 5 and 7 present the findings from Study 1 and Study 2, respectively. Within the study findings chapters, the participant quotations that are provided, to illustrate key findings or deviant cases, have been taken from a wide selection of participants.

Although it may have been the case that some participants articulated their experiences or perceptions more clearly than others, it was considered important to use the full range of quotations available since all participants’ data was included in the data analysis process. As noted by Manning and Kunkel (2013), “*Themes should be essential and derived across data and not incidentally formed from one or two instances, although those one or two instances may highlight possibilities for negative case analysis*” (2013, p.160). Using Thematic Analysis (Braun and Clarke, 2006), the data corpus was analysed line by line therefore ensuring any deviant cases were captured throughout the

analysis process. No attempt was made to 'tidy' the findings by omitting deviant cases or conflicting accounts.

Following a thematic analysis of the interview data, the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991) was selected as a relevant and appropriate health behaviour theory to explore the findings in greater depth. This theory was selected to explore the social influences on men's weight loss behaviours because the findings from the two literature reviews related strongly to the core constructs of the TPB; attitudes, subjective norms and perceived behavioural control (Ajzen and Fishbein, 1980; Ajzen, 1991).



**Figure 8** The Theory of Planned behaviour (Ajzen, 1991)

The reviews highlighted that attitudes towards weight loss behaviours were an important factor in whether men engaged in those behaviours. The literature reviews also highlighted that control and empowerment, or lack of, were important factors regarding men's dietary decisions, and that normative behaviours in line with gender and masculinity had an impact on whether men engaged in dieting, physical activity or with weight loss groups. In the TPB the constructs of attitudes, subjective norms and perceived behavioural control can all influence each other, and

they link into the fourth construct - behaviour intention. Perceived behavioural control and behavioural intention are linked directly to behaviour . The TPB has been used successfully to explain and understand weight loss behaviours (McConnon et al., 2012; Robertson, Mullan and Todd, 2014; Chung and Fong, 2015). It has been argued that the TPB should be “retired” (Sniehotta, Pesseau and Araújo-Soares, 2014) however Icek Ajzen affirms that “*the TPB is in fact not a theory of behaviour change. Instead, it is meant to help explain and predict people’s intentions and behaviour*” and that “*the theory can serve as a useful framework for designing effective behaviour change interventions*” (Ajzen, 2015, p. 133). By exploring the data in relation to a theory of health behaviour, this extends the usefulness of the research such that findings could be used as a framework to guide a future weight loss intervention or a weight loss service for men.

#### 4.5.4 Quality and rigor

There are several different criteria that can be used to evaluate the quality and rigor of a qualitative data analysis. Lincoln and Guba (1985) identified four key aspects to ensuring trustworthiness of conclusions reached; truth value, applicability, consistency and neutrality (Lincoln and Guba, 1985, pp. 294-301). When considering what truth value means, the researcher considers that there are multiple realities and not one “*single tangible reality*” to be measured (Lincoln and Guba, 1985, p. 294). The term “applicability” refers to how well the findings can be applied to other contexts or populations. It is not the nature of qualitative research to provide results that can be broadly generalised since situations have uniqueness however, the transferability of results between two contexts, providing sufficient detail is available, may be possible. Consistency refers to how dependable the research would be if conducted again with the

same or similar participants in a similar context. Unlike quantitative research which may seek to reproduce study results and the notion that “*there is something tangible and unchanging “out there” that can serve as a benchmark if the idea of replication is to make sense*”, qualitative research instead accounts for the variability, for example, by considering interviewee performance, or changes in the interviewees life situation (Lincoln and Guba, 1985, p. 299; Krefting, 1991). The term neutrality refers to how biased the findings of the research study are. Strategies recommended by Lincoln and Guba (1985) and Silverman (2015) to address aspects of trustworthiness that were adopted in this research included: negative or deviant case analysis; multiple researchers; providing thick description and context to verbatim quotes; keeping a reflective diary; and ensuring the data corpus treatment is systematic and comprehensive. These strategies ensured that the data analysis was thorough and rigorous, and that researcher bias was minimised.

Criticisms of qualitative research include that it is biased and that it lacks rigor (Mays and Pope, 1995), however, the steps outlined by Braun and Clarke (2006) ensure a systematic and thorough analysis of data is conducted (see Table 20 on page 161 and Appendix 25). Respondent validation, by sending transcripts back to participants for checking, was not employed. While respondent validation is useful for offering participants the chance to check whether they have said what they meant to say, it does have limitations. Participants may be dissatisfied with their transcript and withdraw their data, depending on how they feel they are being portrayed and whether this is compatible with their self-image (Abrams, 1984). Additionally, they may withdraw their data because the interviews no longer reflect the participant’s current thoughts about an experience or situation, as their thoughts may have changed over time (Birt et al., 2016).

#### 4.5.5 Reflexivity and memo writing

It is important to consider the researcher as a research instrument (Pope and Mays, 2008; Yin, 2010) and acknowledge how the researcher may impact the data collected. Being a reflexive researcher involves turning the lens to inspect oneself as a key component in the generation and interpretation of data. As Finlay and Gough comment, *“as qualitative researchers, we now accept that the researcher is a central figure who actively constructs the collection, selection and interpretation of data. We appreciate that research is co-constructed – a joint product of the participants, researcher and their relationship. We realise that meanings are negotiated within particular social contexts so that another researcher will unfold a different story”* (Finlay and Gough, 2008, p. 5). The use of a reflexive diary, as discussed by Lincoln and Guba (1985, p. 327), enabled the PhD student to reflect on how she may have impacted the data collected, which was then discussed with members of the supervisory team. Within the research diary, the PhD student could record her thoughts and feelings after the interview. An example of one diary entry is regarding the apprehension the researcher faced when discussing weight with women; the PhD student being female and being of the opinion that weight is a sensitive subject for some women, felt pressure to discuss this topic very carefully so as not to cause upset or harm. A short anonymised extract of the research diary is provided in Appendix 24.

The previous qualitative experience of the PhD student may have influenced the quality of the data collected. Having more experience as a qualitative researcher could have improved the ability to probe topics in depth and to generate additional questions relevant to the research aims in response to something the participant has discussed. Although no formal pilot interviews were undertaken, the PhD student had experience

of leading five semi-structured interviews as a part of a previous research project. As noted by Appleton (1995), it is likely that as the study progressed, the researcher will have become more experienced at leading interviews, and the quality of data collected will have improved. To familiarise the interviewer with the ordering and content of the questions on the interview schedule, and to better prepare for interviews, these were read aloud.

Additionally, personal characteristics of the PhD student may have also influenced the data collected. As a white, middle class female, of a slim build, in her twenties with no experience of being overweight or obese, this may have biased how the data were interpreted. Furthermore, it is important to note that relatedness between the PhD student and participants may have been very limited. It is possible that men may have felt uncomfortable discussing certain topics with a female student and may have withheld information. In the same way that the PhD student may have had a sub-conscious bias towards participants, it is also plausible that this was reciprocated. Should the PhD student's gender or body size have been different, this may have influenced the content of interviews. To minimise researcher bias towards participants and to ensure consistency across interviews, several steps, such as the use of an interview schedule, were implemented. The research sought to explore the people, such as spouses and children, who may influence men's weight loss behaviours. To address the issue of researcher bias, and to acknowledge the researcher's position in "time and social space" (Bryman, 2004, p. 500) it should be considered that the data collected may have differed if the PhD student, for example, had been married at the time, been divorced, had children or had any experience of being overweight or obese.

This chapter presented a brief summary of the ontological and epistemological assumptions made as a part of this research, a summary of what qualitative methods include and a rationale for why Thematic Analysis was an appropriate research method

to answer the research question. Further, the limitations, benefits and implications of conducting qualitative research using semi-structured interviews with a convenience sample are presented. This was then followed by a discussion about ethics, participant and researcher safety, and data collection and analysis. The steps that were employed to ensure that a rigorous data analysis was conducted are explained, and the chapter concludes by reflecting on the researcher as a research instrument and her impact on data collection and analysis. The next chapter presents the findings from the first qualitative study undertaken as a part of this PhD research.

## **Chapter 5:** **“We don’t talk about things like that”:** **How social relationships influence men’s diet, exercise** **and weight loss behaviours**

### 5.1 Introduction

This chapter presents the findings from the first qualitative study that was undertaken as a part of this PhD. Following Literature Review 1 and 2, and the identified literature gap, a qualitative study was designed to explore who men’s key social influences were regarding their weight, and how they perceived these people to impact their weight-related health behaviours. Semi-structured interviews and an interview guide were used as the tools for data collection. All transcripts were coded line-by-line and analysed using Thematic Analysis (Braun and Clarke, 2006). A full description of this process is provided in the Chapter 4 of this thesis.

### 5.2 Findings

#### 5.2.1 Participant characteristics

Table 21 presents the participant characteristics that were gathered from the SES questionnaire administered to participants after they had provided informed consent. A total of 19 men took part in Study 1. Most of the participants were carrying excess weight; 11 were overweight and six were obese. The participants were aged between 19 and 60 years, although many were in the upper age brackets; seven men were aged 50-60 and five were aged 40-50. Approximately half of the participants reported that they were married or were living as married (*n* 10). A small proportion of men were divorced (*n* 2), one man was a widower, and the remaining six described their marital status as



single. Many participants had a University degree ( $n = 11$ ) and were working full time ( $n = 13$ ). The data collected from the SES questionnaire is presented in the table below (Table 21)

**Table 21** Participant characteristics for Study 1

	<b>Study 1 (men)</b>
$n$ participants	19
Age, years <sup>1</sup>	44.1 (12.6)
BMI, kg/m <sup>2</sup> <sup>1</sup>	27.9 (2.6)
<b>Highest education level (<math>n</math>)</b>	
No qualifications	2
Less than 5 GCSEs	2
More than 5 GCSEs	1
NVQ or equivalent	0
A level	2
University degree	9
Post-graduate University degree	2
Other	1
<b>Marital status (<math>n</math>)</b>	
Single	6
Married <sup>2</sup>	10
Divorced	2
Widowed	1
<b>Employment (<math>n</math>)</b>	
Full time	13
Part time	1
Unemployed	5

1. Values for Age and BMI are presented as mean and SD

2. Married, cohabiting or living as married

Additional information regarding the participants' characteristics that were not formally collected as a part of the study procedure are illustrated in the table below (Table 22). The table summarises information gathered as a result of the interview process. It was considered important to provide detailed participant characteristics in order to provide greater context to the participants' lives and their experiences. The categories are ticked if this topic was discussed by participants, and this level of detail may enable the reader to better understand how the participants were socially and culturally located.

**Table 22** Additional information regarding male participants obtained during interviews

Participant	Age	BMI	Working full time	Working part time	Not working	Wife/girlfriend	Husband/ boyfriend	Children <18 years	Divorced/ separated	Living alone	Living with partner	Living with parents	Colleague influences	Parents discussed	Friend influences	Sport coach to others	GP/health professional
1	29	25.1	✓										✓	✓	✓		
2	60	24.9			✓	✓					✓					✓	✓
3	31	25.4	✓			✓		✓			✓		✓	✓	✓	✓	✓
4	41	30.9	✓			✓		✓			✓						
5	37	26.9	✓			✓		✓			✓				✓		✓
6	56	24.0			✓	✓				✓					✓		✓
7	32	29.9	✓			✓			✓		✓		✓				
8	56	25.9	✓			✓					✓		✓				✓
9	54	26.6	✓						✓	✓			✓		✓		✓
10	58	29.2			✓					✓				✓			✓
11	57	30.1	✓						✓	✓				✓			✓
12	45	31.5	✓				✓				✓		✓		✓	✓	
13	40	31.5		✓			✓				✓		✓	✓	✓		✓
14	60	26.1	✓						✓	✓							✓
15	19	30.1			✓							✓		✓	✓		
16	45	25.0	✓			✓		✓			✓			✓	✓	✓	
17	47	26.0	✓						✓	✓			✓	✓	✓	✓	✓
18	25	31.5			✓	✓						✓	✓	✓	✓		✓
19	46	29.2	✓			✓		✓			✓		✓		✓	✓	✓

The experiences, beliefs and attitudes of participants regarding their weight-related behaviours are explored. Quotations are used to illustrate key themes and sub-themes

and are provided with a short summary of the participant’s characteristics in order to provide rich accounts of men’s experiences. Four themes were inductively derived; *‘Going it alone or as part of a group’*, *‘What ‘being a proper bloke’ entails’*, *‘Adapting to family life’*, and *‘Appropriate sources of support for men’*. The themes and sub-themes are presented in Table 23 and will be explored in turn. A discussion of the findings will be presented in the next chapter (Chapter 6).

**Table 23** Study 1 themes and sub-themes

Theme number	Theme name	Sub-themes
1	<b>Going it alone or as part of a group</b>	Physical activity as a social activity Feeling judged by other people Experiences of weight loss groups
2	<b>What ‘being a proper bloke’ entails</b>	Men don’t ‘diet’ Being bigger than I was Competitiveness
3	<b>Adapting to family life</b>	What it means to be a father and parent Change in priority when men become fathers The importance of partnership Feelings of powerlessness - the control of the ‘housewife’
4	<b>Appropriate sources of support for men</b>	Appropriate times to seek doctor input Perceptions about support from weight loss groups Seeking trusted, professional advice

### 5.2.2 Theme 1: *“Going it alone or as part of a group”*

This theme provides an insight into the participants’ weight management experiences. This theme contained the sub-themes *“physical activity as a social activity”*, *“feeling judged by other people”* and *“experiences of weight loss groups”*. These experiences were intertwined with contact and comments from people within their social network and also other members of society.

#### *Sub-theme: “Physical activity as a social activity”*

Participants identified advantages and disadvantages to engaging in weight-related health behaviours as a part of a social group. Men believed the benefits of joining a physical activity group included the opportunity to improve health, as well as make friends and to be social. For many, sport was a well-integrated aspect of their week. Being active alone was preferred by small number of participants:

*“I know there is local walking groups but I've never really been ... I quite enjoying my own company now, I think.”*

*Participant 11, aged 57, BMI 30.1kg/m<sup>2</sup>, single*

However, despite preferring to be physically active on their own, these men often discussed that being active had social benefits that could not be met by being active alone. Making friends in a sporting context seemed acceptable and almost all accounts of making friends occurred in this context:

*“I do squash, several of my good mates, my long-term mates I met through squash.”*

*Participant 17, aged 47, BMI 26.0 kg/m<sup>2</sup>, divorced*

Several participants referred to the friendships or feelings of inclusion they gained from being active with others. Three men (Participants 2, 3 and 16) discussed coaching sports teams; for one participant this seemed to be a long-term commitment and he talked about how much he enjoyed coaching youth sport:

*“Then I got into teaching ... and I started playing basketball again...and coaching basketball and that went on probably for another 25, 30 years.”*

*Participant 2, aged 60, BMI 24.9 kg/m<sup>2</sup>, married*

This theme highlighted the sense of community and friendship that some participants strived for in their physical activity behaviours. While a small number of men talked favourably about being active alone, there seemed to be a greater sense of fun and social inclusion when being active with others.

*Sub-theme: “Feeling judged by other people”*

This sub-theme focused on how some participants framed group exercise as both a social and validating activity, but also as an activity with the potential for exposure, judgement and humiliation. Four participants believed that negative comments or criticism from other people could deter their physical activity intentions. The potential to be embarrassed, teased, or feel like they were being judged when being physically active, were barriers to enacting health behaviours such as going to the gym or monitoring step count:

*“I don't have a huge problem with wearing one [FitBit] all day. I can understand some people having a stigma issue with it because if you, if other people actually notice you've got a fitness band on, “oh what are you doing that for?” ...*

*Certainly in a male orientated environment you may have people making fun of you potentially... I'm not saying I would be worried about that, but people may."*

*Participant 7, aged 32, BMI 29.9 kg/m<sup>2</sup>, married*

As a result, some men discussed how health behaviours were carefully navigated to avoid such exposure. Participant 13 considered how being active alone could result in feelings of being watched, observed or judged, however being active in a group could help a person overcome these negative feelings:

*"I think if you're going to go for a run around the park and you've never been to a run before, or not in years, doing it with a bunch of other people. You know, you hide amongst each other, you don't feel quite so vulnerable out there. Whereas, just being this wheezy, overweight person running on your own, you feel everyone's looking at you. If everyone's looking at you as part of a group, it dilutes it."*

*Participant 13, aged 40, BMI 31.5 kg/m<sup>2</sup>, married*

One man reflected on his childhood experience of football and negative comments from peers, which deterred his participation as a youth. It seemed that his childhood memories of being isolated or humiliated had a long-lasting effect. In the present day, he was a committee member of a local football club which had a very inclusive policy, which was perhaps influenced by his own negative experiences of being left out or feeling unwanted on the football team:

*"I remember not signing up to the football team because I didn't think I was good enough... The fact is there were the people that were good and the people that weren't and the people that weren't knew they weren't, because they were told and therefore it kind of puts people off doing it."*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

This sub-theme explored how men generally had a desire to engage in physical activity, however; while being a part of a group introduced the potential for positive relationships with others within the group, it was also true that for some, negative interactions with other members of the group were a possibility. It seemed that negative experiences, or feelings of isolation, could impact future physical activity behaviours.

*Sub-theme: “Experiences of weight loss groups”*

The topic of weight loss groups was a part of the interview guide and was discussed with all participants. On the whole, participants had very little experience with commercial weight loss groups, and most men felt that a weight loss group designed specifically for men was not available. Two men reported that they knew of a man who had attended a commercial weight loss group for health reasons. Prior experience of attending any form of weight loss group was limited to two participants (Participant 13 and Participant 8). Men did not discuss making friends through dieting behaviours, except for Participant 13, who had made friends at Slimming World but had also received criticism from a fellow female attendee at the weight loss group:

*“I heard the consultant say, “Our Slimmer of the Week is [participant's name].” I heard the person behind me say, “Well, yes, he always gets it because men lose weight faster.” And I was, “Wow, thanks for ripping that one out of my hands””*

*Participant 13, aged 40, BMI 31.5 kg/m<sup>2</sup>, married*

This man acknowledged that many of the other members at the weight loss group were female, but also joked about the nature of the club, referring to it frequently as “fat club”. Participant 8 had experience of attending an employee-devised weight loss group

with approximately eight of his colleagues. The group had been formed to help one of his colleagues lose weight in order to receive the joint replacement surgery that he needed. Participant 8 believed that a group approach to weight loss enhanced his motivation to eat well and to exercise more through competitiveness and togetherness. This sub-theme explored experiences of weight loss groups among the sample, the ways in which two participants had responded to the competitive nature of the weight loss groups, and how men felt generally that these types of groups were not in place for men.

### 5.2.3 Theme 2: *“What “being a proper bloke” entails*

This theme captured the ways in which participants, predominantly the younger men, conceptualised their diet and activity behaviours. There was a focus on norms and masculinity throughout their narratives. Sub-themes included *“Men don’t ‘diet’”*, *“being bigger than I was”*, and *“competitiveness”*.

#### *Sub-theme: “Men don’t ‘diet’”*

There was a general perception among participants that dieting and weight loss groups were feminine. This appeared to be a barrier for men to attend such groups. One man described how he thought Weight Watchers in particular was a *“women’s thing”* and one participant considered that *“real men”* would not be interested in counting calories. As a result, almost all of the participants had no intention of joining a weight loss group. A few participants reported copying a friend’s or peer’s weight loss diets, but most had negative experiences or perceptions about dieting.



Food and alcohol were discussed as key elements of social occasions, and as a barrier to healthy eating. Whereas physical activity was seen as a social activity, dieting was frequently portrayed as a hidden activity. Many discussed the calorific content of alcoholic beverages, however were unwilling to compromise on alcohol consumption in the company of peers as a way to reduce calorie intake and facilitate weight loss:

*“Don’t think you go out with mates and won’t have a drink because you know how many calories, you’ve got to join in with the lads.”*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

Only one man, one of the younger men to take part in the study, reported explicitly that he had modified his drinking behaviours to facilitate weight loss. However this was based on the advice of a friend and he did question the reliability of his friend’s information. Another man, who was also one of the younger study participants, reported that he used graphs of his energy intake versus energy expenditure to help him reduce his body fat and achieve the body image he desired. Unlike other men who had modified their energy intake to facilitate weight loss, this participant used the term “diet” when describing this experience:

*“originally I started a diet because I wanted a six-pack abs. So I’d been exercising for a while and wondering why I didn’t have six pack abs and I realised actually the problem was that my body fat percentage was too high so I thought I’d try and diet so I started counting the calories that I was eating and measuring my weight and I did a graph over time with these two and I adjusted my calorie intake to control my weight and I was successful”*

*Participant 1, aged 29, BMI 25.1 kg/m<sup>2</sup>, single*

Generally, men seemed to have an aversion to the terms “diet” and “dieting” which to them, were strongly associated with femininity. Throughout the interviews, most men distanced themselves from these terms:

*“I don’t think I’ve ever said oh I’m on a diet or I’m dieting, I just say I’m trying—I’m eating a bit more healthy at the moment, we’re just eating more healthier.”*

*Participant 5, aged 37, BMI 26.9 kg/m<sup>2</sup>, married*

*“being a bloke, I have no interest in diet, you know?”*

*Participant 8, aged 56, BMI 25.9 kg/m<sup>2</sup>, married*

For most, being a proper bloke meant not openly discussing dieting or weight concerns with friends. Some men would speak to friends for “advice” or “hints”, which to them was different from seeking support. Thus, men avoided appearing feminine and concerned with body image because they were not seeking “support” and appearing in need or weak. Three men made it clear that they did not receive “support” for weight loss from friends:

*“I wouldn’t go and see my mates and say “I want to lose a bit of weight, what do you think I should do?” ... we would never talk about something like that ... the friends I’ve got are my best friends, they’ve been my friends for 30, however many years ... we don’t talk about things like that.”*

*Participant 5, aged 37, BMI 26.9 kg/m<sup>2</sup>, married*

While dieting was seen as a feminine pursuit, physical activity and exercise were considered manly. One participant, however, did describe having a male nutrition role model. A small number of men discussed the propensity for role models for men to promote exercise, and for role models for women to promote dieting:

*“You hear about her Kim K diet, you know.... But um, you never get the Kim K workout... That’s a media thing where again they stereotype; women - diet, men - exercise, gym... You’re never going to hear of Tom Hardy going on a diet. It’s always, “Tom Hardy’s in the gym” ...”*

*Participant 18, aged 25, BMI 31.5 kg/m<sup>2</sup>, single*

A couple of men thought that social media and online forums were a good source of support for men who were seeking information or advice regarding weight-related behaviours. These online resources were seen as acceptable or favourable, because they could provide anonymity and the opportunity to discuss health with a wider audience. This sub-theme considered how men’s perceptions regarding dietary modification or restriction could be disrupted by the gender norms and ideals that conflict with health behaviours.

*Sub-theme: “Being bigger than I was”*

References regarding body size were not discussed in relation to male role models, but how men used to look compared to how they felt they looked now. Male body role models were rarely discussed and when they were, they were not seen as inspirational or achievable. The majority of men acknowledged that they were heavier or larger than they could or should be. Participants discussed being aware of their body size and shape in relation to how their clothes fit and felt on them, which for many had changed with time and most had gained weight. Eight men commented about how their clothes fit, with most reporting that they were now a larger size than they had been were previously. Some commented about wearing clothes that they had bought previously, for example a suit for a wedding, and a desire to fit into them again was their cue to lose

weight. Men's clothes were their way of monitoring how their weight had changed throughout their lives:

*"...I put on a bit of weight, look at myself in the mirror, I think "you need to do something about that" ..."*

*Participant 5, aged 37, BMI 26.9 kg/m<sup>2</sup>, married*

A large proportion of participants seemed discontent with their bodies, describing them in unflattering and emasculating ways, with references to their undesirable "man boobs", however, this was not the case with all participants:

*"a lot of people are quite happily overweight, I'm quite happily over weight, but I'm always trying to keep it under control."*

*Participant 2, aged 60, BMI 24.9 kg/m<sup>2</sup>, married*

Two participants had received negative comments from a friend and a family member about a photograph of themselves regarding their body size. These men described how these comments were hurtful and shocking to them, yet these comments fuelled their intentions to lose weight:

*"I had a picture with my girlfriend... one of my friends went "ah, what have you got up there, a spare tyre!" and actually you could see my fat podging around the side of my t-shirt and I was like, ok I need to do something ..."*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

As one participant reflected on his current body size, he acknowledged that as he had gotten older, his motivation to address weight gain was fuelled by a concern for his health as well as his body image:

*“I think I’ve got to an age now when I’m doing it for me. I’m doing it because I want to feel good and I want to look good. There’s nothing worse than thinking, “Oh, I’d like to wear that pair of trousers,” and think, “No, I can’t get into them.” So, yeah, I’m doing it for me.”*

*Participant 6, aged 56, BMI 24.0 kg/m<sup>2</sup>, widower*

This sub-theme encapsulated the discourses surrounding men’s body size, their thoughts on their past and present body size, and their aspirations for their body size for the future.

*Sub-theme: “Competitiveness”*

Competitiveness was seen as one way to demonstrate masculinity. Competitiveness occurred predominantly with friends and in a sporting context although as previously discussed it did occur for two participants in a weight loss group context.

Competitiveness enabled Participant 8 to engage in weight loss behaviours without undue damage to his masculinity by shifting the focus of the weight loss group from support to competition:

*“... being in a group and being in competition... makes it easier than if you would try to do it on your own... Because you can't cheat if everybody's around for the weigh in.”*

*Participant 8, aged 56, BMI 25.9 kg/m<sup>2</sup>, married*

Competitiveness could occur directly with other people, but in once instance it seemed to occur without the other party necessarily knowing: knowing what another person’s step-count target was had motivated one participant to first match and then attempt to pass the other person’s target. He discussed his achievement with confidence and

seemed to have an air of self-assurance that he was certainly capable of going further than his competitor was:

*“The person who gave it [FitBit] to me, first of all they set their target up and I thought, “Well, I can do that.” ... The obvious next step is for me to up my target so I’ll probably do that within the next month or so as I get fitter.”*

*Participant 6, aged 56, BMI 24.0 kg/m<sup>2</sup>, widower*

One of the younger participants was prepared to compromise his health when he ran a half-marathon as a “drunken bet” with a friend, despite also reporting having difficulty breathing and having done very little training. While telling his story about his half marathon experience, he emphasised the masculine nature of this running event and framed himself as a real “man” in terms of alcohol, risk-taking and sex: he was slow because of illness, he was running because of a drunken bet, and that while running, thoughts about having sex with his girlfriend motivated him to complete the event. This theme outlined how competitiveness was a key element in some of the participants’ stories regarding their health behaviours, and how, by including this aspect in their descriptions of behaviours, it bolstered their masculine capital.

#### 5.2.4 Theme 3: *“Adapting to family life”*

This theme explored the ways in which men’s lives had changed once they had children. For these men, there seemed to have been a transition from being a bloke to becoming a family man and father. This theme also encompassed how having a partner had impacted their outlook on their health. These life events seemed to bring about a change in their health-related attitudes, beliefs and behavioural intentions. The sub-themes of this theme included *“what it means to be a father and parent”*, *“change in priority*

*when men become fathers”, “the importance of partnership” and “feelings of powerlessness: the control of the ‘housewife’”.*

*Sub-theme: “What it means to be a father and parent”*

This sub-theme and the next both focus predominantly on the parenting experiences of four men (Participants 3, 5, 16 and 19) all of whom had young children. While Participant 4 also discussed having young children, he briefly touched upon the influence that his children had on his activity behaviours, which is included in a later sub-theme. Some of the other participants had older children who had left home and were now adults. The participants’ adult offspring did not seem to impact their behaviours in the same way that a dependent child living at home did.

The sample contained a mixture of men with experience of being a dad for a few years, and those who were relatively new to parenthood. Regardless of parenting experience, it seemed that meal times were an opportunity for the whole family to be together and for fathers to spend time with their children.

*“I sit there and I eat with the rest of the family... it makes social sense for me and I want to spend time with the kids.”*

*Participant 19, aged 46, BMI 29.2 kg/m<sup>2</sup>, married*

There seemed to be more barriers to being active as a family unit than eating together as a family. In order to be a good dad, Participant 16 had taught his children about healthy eating, to give them the best start in life he could, and as a way to reduce their future risk of obesity and ill health. He discussed using toys to educate his sons about healthy eating, and he believed they would pass this knowledge on to future generations. Many saw fatherhood as the time to change their lifestyle for the better. Participant 16’s desire

to be, and to be seen to be, a good father also prompted him to address his own weight issues so that he could be a healthy role model for his children:

*“I want to lose weight. It’s just what I want to do. You don’t want to be a fat dad, do you?”*

*Participant 16, aged 45, BMI 25.0 kg/m<sup>2</sup>, married*

There was a sense of responsibility about the way in which a child was brought up; participants believed that upbringing could influence weight status and health, therefore, to be a good father meant providing a healthy home environment. Men acted to instil or facilitate healthy behaviours in their children:

*“I’ve got a little one ... I will not buy chocolates and sweets because I don’t want them to be readily available and for her to think that’s normal.”*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

Parenthood also prompted reflections on the participants’ own upbringings and the responsibility they thought their own parents had faced when raising them. The youngest participant reflected on the support he would have liked from his parents while trying to change his diet to facilitate weight loss; parents being his primary and preferred source of support:

*“Friends, it’s up to them really but obviously family is the main people you tend to listen to before anyone else, especially your parents, so that’s who I’d like more support from really.”*

*Participant 15, aged 19, BMI 30.1 kg/m<sup>2</sup>, single*

A small number of participants articulated a belief that the food and eating practices that their parents brought them up with such as “*clear your plate*” had impacted their



weight. One participant framed his parent's over-feeding behaviours as the reason why he had been overweight as a child:

*“... it's really really bad, but my parents brought me up on breakfast and then two cooked meals and that is a lot of food ... my parents are overweight, my brother is, my sister's not, but we both as kids my brother and sister were [overweight]...”*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

This sub-theme provides a discussion of the issues surrounding parenthood and parenting in relation to dietary behaviours, as seen from a male perspective. In a weight-management context, this sub-theme highlighted their perceived responsibilities that parents had for their children, the key determinants of what men thought it meant to be a good father, and men's perceptions of how they were themselves parented.

*Sub-theme: Change in priority when men become fathers*

Being or becoming a father often meant a change in physical activity behaviours. Participant 5 explained how, before his baby was born, he and his wife would kick-box at a club together. Now, they took long walks together as a family, pushing their baby's pram, to help their baby sleep. A change in status from “being a man” to “being someone's father” was reflected in the way participants prioritised the needs of their family over their own. Instead of striving to improve body image or muscle mass through exercise, men believed it was now more important to engage in family activities such as family walks and “mucking around” in the garden or park with their children, and to prioritise health over looks:

*“... body image isn't that important to me anymore... it goes back to the point of where I am in my life ... what I need from my training is to be more physically fit and healthy rather than how big and how ugly and how, how I'm going to look”*

*Participant 19, aged 46, BMI 29.2 kg/m<sup>2</sup>, married*

As fathers, men faced barriers to doing structured exercise, but saw health and social benefits of active play with their children. Participant 19, however, questioned whether children were truly a barrier to being active or whether they were used as an excuse. Being physically active with their children formed a part of their identities as “good dads” and this was an opportunity to bond with their child. The shift in focus from individual structured exercise, to active play with children was relished and treasured as an opportunity to promote father-child bonding: men “loved” it and they thought that their children also enjoyed this, which seemed important to them:

*“I think he'd [son] enjoy that [walking] if it was just the two of us, you know... A bit of dad time, you know. I think he'd like that.”*

*Participant 16, aged 45, BMI 25.0 kg/m<sup>2</sup>, married*

Men perceived that there were barriers about doing structured “exercise”, like cycling, with their children, however these barriers seemed to be easier to overcome, or were indeed not present at all, when engaging in activities such as walking or active play. Overall, active play was to these participants a natural part of being a dad. This sub-theme explored men's discussions around the impact or change that fatherhood had had on their own health and weight-related behaviours. Participants critically reflected on how being a father had altered their perspectives or outlook of their own weight-related behaviours.

*Sub-theme: “The importance of partnership”*

This sub-theme and the next both have a focus on relationship influences and perceived behavioural control. Many of the participants talked about having a girlfriend, partner or wife, and there was a strong sense of togetherness in the way they spoke about lifestyle choices in relation to partners:

*“it [diet] was something we did together, I mean, we tend sort of live our lives together, that’s why we’re married [laughter]”*

*Participant 2, aged 60, BMI 24.9 kg/m<sup>2</sup>, married*

Men often framed their significant other as their ally; a person that they shared responsibilities for food choices and cooking with. Of the participants that talked about having a partner, only two discussed or alluded to having a male partner. Only one man talked confidently about how he and his husband read food labels in shops and felt that they knew enough between them about food and nutrition to make healthy choices. In this way he demonstrated that he had some control or say over the food bought and the meals prepared in the home:

*“We’ll pick two things up, we’ll turn them over, we’ll have a look at the nutrition and we make a decision based on sugar and fat, which one to have...”*

*Participant 12, aged 45, BMI 30.1 kg/m<sup>2</sup>, married*

A small number of participants discussed goal-setting and making lifestyle changes with their partner. A partner was framed as being someone they felt comfortable discussing their personal goals with, someone who was framed in less of a controlling way and more in a supportive way. Some partners facilitated men’s goals by sharing them:

*“I’d even say a dieting buddy, a healthy eating buddy then... So I suppose I’ve got that in my wife that we, kind of, set similar goals.”*

*Participant 5, aged 37, BMI 26.9 kg/m<sup>2</sup>, married*

One man (Participant 4) who lived in a suburb with his wife and children, said that he was not active with his children. He explained that he took it in turns with his wife to go for a walk due to their shared childcare duties; walking was one of his chosen forms of physical activity. While this participant did not frame his activity behaviours as something he did with his wife, their roles as parents were something that they seemed to enact together and that was dependent on their partnership.

Several participants described the ways in which their partners encouraged or facilitated unhealthy behaviours. Many couples seemed to have similar eating behaviours and would share meals and drinks. This demonstrated the social role that food played in their lives. Participant 18 discussed ways in which he and his girlfriend appeared to have developed joint unhealthy eating habits. Even decisions to eat more healthily were somewhat misguided: he perceived his girlfriend had a positive impact on his eating healthily as she took the lead when deciding what they would eat:

*“she [girlfriend] affects it probably for the better... the amount of times I’ve gone to her, “Let’s get a Maccy’s” and she’ll go, “No, let’s actually cook something.” And it’ll be like instead of a McDonald’s burger ... it’ll be like, “Let’s get a pie and have garlic bread with it” ...”*

*Participant 18, aged 25, BMI 31.5 kg/m<sup>2</sup>, single*

Participant 11 thought that not having a partner to cook healthy meals for him was a barrier to healthy eating, because instead he ate microwave meals. A small number of participants discussed how the food preferences of their partners were a barrier to eating some foods together, however men catered to this need, and compromised by refraining from eating certain foods such as meat or fish at home.

*“I mean I love fish but, uhm, my partner will not go anywhere near one so ... we don't eat fish... I've got to fit in with people around me ...”*

*Participant 8, aged 56, BMI 25.9 kg/m<sup>2</sup>, married*

This sub-theme established the importance of partnership in managing day-to-day activities or decisions as a family, with or without children. This sub-theme related mostly to dietary intake and dieting behaviours. Partnerships seemed to be highly valued by men; decisions regarding lifestyle behaviours were framed as two-sided conversations. In some instances, partnership was restrictive, but it seemed at all times that the partnership was treated carefully and with respect regardless of the outcome.

*Sub-theme: “Feelings of powerlessness - the control of the ‘housewife’”*

In contrast to the previous sub-theme wherein partnership could involve shared decision making, some of the study participants framed their female partners in a traditional sense of being in control of the kitchen and with having the responsibility for household nutrition. Some men seemed to lack control or choice over what they ate.

In the extract below, there is also talk of “never dieting”; while dieting was also discussed in a previous theme, this particular extract highlights the lack of autonomy this participant felt within his previous married relationship regarding dieting behaviours:

*“While I was married, my wife used to insist that I went on a diet because I may have put on a couple of pounds. But I've never instigated my own diet. I don't think at the time I would have been capable of sorting out a particularly decent diet. So, someone else has always controlled it”*

*Participant 6, aged 56, BMI 24.0 kg/m<sup>2</sup>, widower*

Participants 16 and 19 talked about how their evening meals would be decided and prepared by their partner and how they perceived a lack of control over what the meals would be. They also discussed not complaining about these meals to their partner, or requesting other meals, and they would accept with gratitude that a meal had been prepared for them:

*“When you come home from work at night, if tea’s cooked, you eat it. It doesn’t mean I had a choice of saying what I wanted to eat.”*

*Participant 16, aged 45, BMI 25.0 kg/m<sup>2</sup>, married*

Only one man, who had a wife and young children, discussed that, although his wife served him large portions of food which was a potential barrier to weight management, he felt it remained his choice whether to eat it all or not. He perceived that he remained in control:

*“... At the end of the day, I’m in control of my body. I- I do what I want.”*

*Participant 19, aged 46, BMI 29.2 kg/m<sup>2</sup>, married*

Participant 2 was aware of the calorie content of alcohol and the impact this would have on his weight, yet noted how when his wife opened a bottle of wine, he felt he did not have the will-power to abstain from drinking with her. While some men discussed reaching out to their partner for nutrition advice or guidance, it seemed that others were told what to do; unlike the previous sub-theme this did relate also to physical activity behaviours. The following extract highlights this phenomenon:

***So what motivates you to be physically active then?***

*To get to work, is one. Er, I’m told to by my wife, is two.*

*Participant 7, aged 32, BMI 29.9 kg/m<sup>2</sup>, married*

This sub-theme encompassed the lack of control some men experienced in their relationships with regarding to their eating behaviours. There seemed to be a stronger sense of resentment about their partner's behaviours and how this would impact their own within this sub-theme. As was also true of the previous sub-theme "*the importance of partnership*", men did not discuss any conflicts or arguments regarding these issues.

#### 5.2.5 Theme 4: "*Appropriate sources of support for men* "

This theme discussed the other sources of influence or support that men came into contact with. Most participants talked about having someone in their lives that they would turn to for advice or support when engaging in weight loss behaviours. For some, support came from within the home, but others sought advice from professionals. Sub-themes included "*Appropriate times to seek doctor input*", "*perceptions about support from weight loss groups*" and "*seeking trusted, professional advice*".

##### *Sub-theme: "Appropriate times to seek doctor input"*

The men in this study frequently talked about the contact they had with health care professionals. Some participants turned to their doctor for advice or support where others described turning to a partner. One participant discussed overcoming the initial hurdle of deciding to seek the support or guidance of a doctor, and how this might feel:

*"I suppose like, in a way they're kind of admitting that they've got a problem, like an addiction almost, the first step is saying yeah actually I've got a problem"*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

Participants also discussed the ways in which support, or better support from their doctors, would have benefited their weight loss efforts. Advice from a doctor was generally respected and considered reliable. Guidance or support from a doctor was something that men were generally open to receiving or interested in seeking:

*“If I’m putting on weight and I don’t know why... I would go and see the doctor”*

*Participant 3, aged 31, BMI 25.4 kg/m<sup>2</sup>, married*

Some men voiced their frustrations or feelings of being let down by their doctor through a lack of dietary or weight loss guidance. Some participants seemed to place a considerable amount of trust in their doctor to raise any issues regarding their weight, dietary intake, exercise, or risk of disease; an absence of these conversations was interpreted as a signal that they did not need to take any action regarding their weight:

*“Every time I go to the doctor, he’s never mentioned me going on a diet, you know.”*

*Participant 14, aged 60, BMI 26.1 kg/m<sup>2</sup>, divorced*

Contrary to the general consensus, Participant 11 (aged 57, BMI 30.1 kg/m<sup>2</sup>, single) felt unmotivated to heed the doctor’s recommendation. The doctor had recommended that he attend a weight loss group and despite being given vouchers for free sessions, the potential for embarrassment deterred him. Participant 11 talked at length about his encounters with his doctor and seemed to have a difficult relationship with his doctor regarding his weight. His doctor had used the term “obese” to describe his weight which had come as a shock: it seemed plausible that this negative interaction had a role to play in the current state of his relationship with his doctor:



*“I was actually quite shocked when the doctor actually said I was, I was obese... in my own mind, I didn't think I was obese... it's usually all big fat people... I'm sort of chubby, as you might say...I knew I was overweight, but I didn't think I was ... I was obese... I really didn't take too kindly to that. ...I don't think myself as really big or overweight. I know I am probably, weigh heavier than what I should be.”*

*Participant 11, aged 57, BMI 30.1kg/m<sup>2</sup>, single*

Furthermore, Participant 11 felt that his doctor shared responsibility with him for his own weight yet framed this absence of weight loss behaviours as his own “fault”. This sub-theme provided an overview of the role that men thought their doctor could or should play regarding weight management. It was established that the doctor is considered a reliable source of information and that concerns relating to health or weight should be addressed by a doctor.

*Sub-theme: “Perceptions about support from weight loss groups”*

A segment of the interview guide focused on weight loss groups and men's perceptions of these types of groups. When discussing the desirable aspects of a hypothetical weight loss group for men, one-to-one support and the opportunity to privately discuss their concerns and progress was regarded as important component by many participants:

*“...have a little catch-up quietly one-to-one. I hate the thought of that middle of the stage scales and everybody rolls up and, “Ooh, yeah.” It's done quietly, it's done individually, it's done respectfully...”*

*Participant 6, aged 56, BMI 24.0 kg/m<sup>2</sup>, widower*

Participants were almost equally divided about whether they would prefer a single sex or mixed sex weight loss group. Some were happy to attend a mixed-sex weight loss group with partners, because they thought being overweight was an issue among men as well as women. Participant 13 thought that a male-only weight loss group would be “*too extreme*” whereas others showed a preference for a “*blokes*” only approach. One man talked jokingly about possible names for such a group and thought a suitable name would be something along the lines of “*fat-busters*”. Over half of all participants thought that weight loss groups had the potential to be very supportive for men; members could share weight loss goals and make friends.

*“But if you were doing outside of that relationship, so yes, and you were part of a group it’d be nice to have— make a friend at this group that yes, you can work towards your goals together.”*

*Participant 5, aged 37, BMI 26.9 kg/m<sup>2</sup>, married*

This sub-theme represented the participants’ views on what would be necessary to include in a male weight loss group should a weight loss group for men be devised and delivered. A key finding was the desire for tailored support that was delivered privately and discretely.

*Sub-theme: “Seeking trusted, professional advice”*

A small number of participants discussed personal trainers and health coaches, and they seemed to value having someone to instruct and motivate them. Participant 15 had concerns about his future health and wanted to act to reduce his risk of disease. He voiced his intentions to lose weight in order to care of this future health, but he had felt

unsure about how to use equipment in a gym, so enlisted a personal trainer to assist and to motivate him:

*“I’ve got a coach, like a supervisor, who will guide me through my products and it’s because, well I haven’t got time and I can’t really be bothered to cook ...”*

*Participant 15, aged 19, BMI 30.1 kg/m<sup>2</sup>, single*

A couple of participants talked about how personal trainers were considered to be knowledgeable and trusted sources of information. While personal trainers were typically seen as physical activity experts they were also considered to be an acceptable source of nutrition advice for men. It seemed more acceptable to seek professional support than to ask friends for support regarding weight management strategies. Only a couple of participants did discuss consulting a personal trainer:

*“If I went a few weeks, a few months, and I wasn’t seeing any progress with my exercise and change in diet, then I would possibly go to a personal trainer.”*

*Participant 5, aged 37, BMI 26.9 kg/m<sup>2</sup>, married*

This sub-theme explored the professional sources of weight-related advice that men felt comfortable obtaining. Personal trainers were discussed by several participants; some with experience of seeking the services of these professionals. Personal trainers were held in high esteem and remained a desirable source of guidance should they need it.

### 5.2.6 Summary of results

The sample of men provided a range of answers to each interview question. Four themes were generated and of these, the social relationships that seemed of greatest influence upon men were those of family members, namely their partners and indirectly,

their children. Men appeared to have more autonomy over their physical activity behaviours than their food intake; food intake was frequently dictated or influenced by female partners. The partnerships they had were highly valued and, within the safety of the partnership, dietary support or advice could be accepted by men. The fathers among this sample seemed to relish opportunities to be physically active with their children in any way that was feasible; in this way strived to be what they thought was a good dad. In their responses, participants displayed varying degrees of masculinity; from concerns about fitting into clothes and how they look in the mirror, to shunning any support and spending free-time with “real men”. The men among this sample shared many common ideas regarding the design and structure of a male weight loss group. Many participants talked favourably about such a group, and thus the findings of this study provide a valuable insight into what a desirable weight management service for men in this county should consider or include.

## **Chapter 6:** **Discussion of Study 1 findings**

This qualitative study explored how men perceived different social influences had an effect on their nutrition, physical activity and weight loss behaviours. A novel aspect of this research is the level of detail and context that accompanies the data and quotations. Participant accounts seemed to vary depending on where they were in their life; those without children or partners focused more on fitness and body image, while those with younger children focused on health, active play with children and being a good role model for their children. Older participants without a partner relied on a doctor for health advice, whereas those with a partner sought advice from them. The themes generated from the data analysis will be discussed in relation to published literature on this topic, the findings of the literature reviews undertaken as a part of this thesis, and in relation to the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991). The many of references included within this chapter were identified during Literature Review 1 or 2 database searching, or from additional searches of scientific databases.

### 6.1 Being a man

The findings of this study concur with other published research which has found that men generally regarded dieting and body image dissatisfaction as feminine behaviours or concerns (Hunt et al., 2014). Typically, social norms encourage men to have large, muscular bodies; they discourage men to look slim or to be preoccupied with diet or weight (Lewis et al., 2011; Monaghan and Malson, 2013; Sabinsky et al., 2007). However, despite body image dissatisfaction typically being perceived as a feminine concern, self-body image dissatisfaction was discussed by a proportion of study

participants. Other research conducted among gay and straight young men found that their body image cognitions and concerns were not dissimilar from one another (Morgan and Arcelus, 2009, p. 437), and that an ideal male body avoided “*excess muscularity or adiposity*”. This same study found that all men except one were dissatisfied with their body image; that men considered body image to be a concern to them; and that body image and clothing style were factors in which they felt judged but also judged others (Morgan and Arcelus, 2009). Other literature has also found that men can be insecure about being compared to other men who may be fitter, faster or stronger than themselves (Lozano-Sufrategui et al., 2016). As identified in Literature Review 1, overweight or obese men would rather engage in weight-related activities with men of a similar fitness level and body size.

The topic of weight loss groups was discussed by the study participants. It seemed that most participants had no intentions of attending a commercial weight loss group due to a combination of their beliefs about their effectiveness and their lack of suitability for men. This finding was also identified within the sub-theme of Literature Review 1 titled “sustainable loss”. By applying the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991) this research has found that gender norms, coupled with a strong belief about the femininity of weight loss groups, influenced men’s behavioural intentions to join a weight loss group.

Previous research has found that partners strongly influence male food intake (Allen, Griffith and Gaines, 2013; James et al., 2016). Men who participated in the FFIT trial mostly reported feeling supported by their partners; however, some felt undermined by their partners and female relatives (Maclean et al., 2014). A general sense of support from partners was also a key finding of Literature Review 1 within the sub-theme titled “being supported” and was prominent across many of the themes presented in Literature Review 2. Several of the men in the current study discussed having limited control over

their food intake at home. Some men constructed female partners as helping, and some as hindering, their healthy eating. It is known that couples often influence one another's health behaviours (Jackson, Steptoe and Wardle, 2015). Research has shown that support from female partners was associated with improved intentions to eat a low-fat diet at the 12-month follow up (Scholz et al., 2013). Men stereotypically delegate responsibility for their health care to their female partners and men are often passive receivers of care by way of adhering to gender norms (Courtenay, 2000; Verdonk, Seesing and de Rijk, 2010; Gough, 2007). Furthermore, men believe that they lack skills and knowledge regarding diet and nutrition (Ashton et al., 2015), and are constructed in the UK media as less competent at these compared to women (Gough, 2007). Applying the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991), it is possible to identify how the men in this study experienced disempowerment, a lack of perceived behavioural control and a lack of autonomy over aspects of their food choices. Men held the attitude that women knew more about nutrition than they did, which was in line with subjective norms and traditional gender roles surrounding food and nutrition.

Two men in the current study believed that they retained overall control of their food intake; it was not their intention to ask their partner, or accept support from their partner, for support to diet or lose weight. Reluctance to accept social support for weight loss was also seen among overweight men in Australia (Lewis et al., 2011). This refusal of dietary assistance from a spouse opposes traditional gender norms for male health care; however, by retaining control and being dominant, men demonstrate their masculinity (Courtenay, 2000). Considering the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991), it is clear that perceived behavioural control was a key factor in men's behaviours. It seemed that some of the participants in the current study saw their partner as a barrier to healthy living. It seemed that some men accepted a lack of control and

feelings of disempowerment surrounding their nutritional choices and behaviours in the home.

This study found that, unlike traditional masculine norms for health behaviours, this sample of men were likely to seek or accept support from their doctor to facilitate weight loss. Typically, men do not engage in health-seeking behaviours (Courtenay, 2000), do not attend annual health checks (Schlichthorst et al., 2016), and avoid seeing their GP unless pressured to by a partner (Sharpe and Arnold, 1998; Verdonk, Seesing and de Rijk, 2010). Additionally, when the number of health consultations were adjusted for reproductive health visits, it was found that in the UK, men aged 16-60 years have fewer health consultations than women (Wang et al., 2013b). The men in the current study believed that their doctor was a reliable source of advice. For some, a doctor's advice was a cue to action and prompted a change in dietary intake. For a few others, their doctor hadn't provided them with dietary information after recommending they lose weight, and they had felt unable to successfully lose weight. Like the current study, other literature also found that people rely on their doctor to begin conversations about their weight (Hart et al., 2016) and that medical advice for weight loss was desired but not provided (Jackson et al., 2013). A focus group study with men in Australia also found that men would like to receive support from their doctor but feel the support they do receive is often inadequate (Aoun et al., 2002). The current study highlights the potentially crucial role of the doctor in encouraging or supporting male weight loss behaviours.

It is known that younger men are usually motivated to lose weight to improve body image, and older men are motivated by their health (Sabinsky et al., 2007). It was therefore unusual to see a younger participant (aged 19) describe a concern for his future health as his motivation to lose weight. Men have been found to engage in health behaviours when they perceive a risk to their health, or when their daily functioning is



impacted by their health (Hankey, Leslie and Lean, 2002; Morgan et al., 2011e). In the case of this participant, he had a positive attitude towards making lifestyle changes, he described his weight loss intentions, and perceived weight loss to be important for his health. However, he felt unable to engage in healthier behaviours alone, so sought professional support to enable them. While this finding is limited to just one participant, this finding does demonstrate the potential for health-based weight loss interventions to be of interest to younger men as well as older men. Unfortunately there were very few men of a similar age to this participant and therefore the usefulness of this finding is very limited. While this finding does have possible implications for future research and weight loss interventions for young men, this finding should first be confirmed among other samples and larger samples of young men.

The men in this study discussed their friends predominantly in a sporting context and saw physical activity as an opportunity to make friends. This finding is concurrent with other literature; a systematic review of qualitative literature also found sport to be perceived as a social occasion (Barnett, Guell and Ogilvie, 2012). This sample of men seemed more likely to discuss diet or health concerns with a partner than with anyone else and had an aversion to discussing dieting or weight loss with a friend. This finding agrees with the wider literature: a study in the UK with a small sample of men found that men predominantly relied on partners for diet support (De Souza and Ciclitira, 2005); in the US, it was found that men's health support network comprised of family members (Snipes et al., 2015) and in Australia, men demonstrated a strong aversion to discussing dieting with other men but relied strongly on female partners for diet support (Mallyon et al., 2010). Men have been found to avoid healthy eating behaviours when among the company of their friends in order to protect masculinity (Newcombe et al., 2012), however, several men in the current study did report copying the dietary behaviours of their peers. Applying the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991),

this study demonstrates that some men held the attitude that it was not appropriate to discuss dieting with friends, which was mutually reinforced by social norms. As a result, men felt they were not able to approach their friends to discuss their own dieting intentions since this was not appropriate behaviour and therefore did not attempt to.

## 6.2 Being a father

This study included men who were fathers; some were fathers of children who had grown up and left home, whereas five other men had younger, dependent children. The current study found that some fathers took an interest in their children's food intake and encouraged healthy eating. Fathers aspired to be healthy role models for their children's eating behaviours, and to be healthy themselves. Similar results were found among a sample of men from the Netherlands (Verdonk, Seesing and de Rijk, 2010), New Zealand (McNeill and Firman, 2014) and in focus groups with Hispanic women about how they perceived fathers played a role in the health behaviours of children (Lora, Cheney and Branscum, 2017). Among a sample of men from Australia, it was found that the men who were more conscious of their child becoming overweight or obese took a greater role in feeding practices (Mallan et al., 2014).

The importance of a healthy lifestyle as a father was the basis for the HDHK study in Australia, which recruited fathers and their primary school aged children to a weight loss intervention targeting overweight and obese fathers (Morgan et al., 2011d). The HDHK study found greater improvements in the fathers' physical activity behaviours than their dietary behaviours (Morgan et al., 2011d). However, it is possible that this is an artefact of child age; other research shows that both mothers and fathers felt an increased responsibility for child feeding with their younger children compared to their

older children (Pulley et al., 2014). In the UK an interview-based study found that men intended to change or had already changed their unhealthy behaviours (for example, cigarette smoking) as a result of their “obligations” to their children (Williams, 2007, p. 345). Furthermore, the impact of having an overweight father (and healthy weight mother) increased the risk of their child becoming overweight or obese, however the same was not true if the mother was obese and the father was a healthy weight (Freeman et al., 2012). The current study, and the research studies discussed, demonstrate that men may be willing to change health behaviours “for” their children, and may be able to overcome barriers to healthy eating via their behaviours with children.

The current study demonstrates that, although men’s attitudes surrounding healthy nutrition do change in fatherhood, it is usually women who provide meals for the whole family and thus, social norms dominate behavioural intentions and behaviours. The men in this study seemed accepting of the foods that they were provided by their partners; however, other research among Hispanic families has found that fathers disagree about the types of foods and portion sizes that mothers provide for the whole family (Lora, Cheney and Branscum, 2017). Previous research has found that women are the household members who undertake the majority of food work in the home (Allen, Griffith and Gaines, 2013; Roos, Prättälä and Koski, 2001; Lupton, 2000). Using the TPB to understand men’s weight-related behaviours, several key findings emerged; men’s attitudes about the dietary knowledge women hold, the perceived control that women have over food in the home, and men’s acceptance that nutrition and dieting are feminine activities, resulted in few men reporting that they dieted. Using the TBP, it can be understood that men’s positive attitudes surrounding the role that physical activity played in health and weight loss influenced their actions; fathers engaged in physical activity with their children to be a good dad, to be healthier and to improve their child’s health. It appeared that this sample of men had more control over their physical activity

than their nutrition. Furthermore, it seemed that men prioritised time to be active with their children than to exercise alone. This study also found that men who were fathers often experienced a lack of control over family food intake and were unable to use this as their way to be a healthy role model for their children, so instead, they educated their children about healthy eating and engaged in physical activity with them.

### 6.3 Findings in relation to the Theory of Planned Behaviour

This section summarises how the findings from Study 1 can be interpreted in relation to the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991).

**Behaviours:** Losing weight, monitoring weight or maintaining weight.

**Behavioural intentions:** Men discussed wanting to enact the following behaviours: eating healthily, avoiding eating unhealthy food, drinking less alcohol, exercising, mimicking a friend's diet or weight loss strategy, playing sport with their friends, seeking a doctor's advice for weight loss when necessary, competing with their friends in sport and weight loss, monitoring step count and physical activity, being a healthy role model for their children, being physically active with their family, and fitting into their suits, trousers and jumpers.

**Attitudes:** Men generally had a positive attitude regarding the influence that their partner had on their dietary intake. Men who were fathers of younger children held the attitude that they had the responsibility of educating their children about healthy lifestyles, which included being a healthy role model for their children. Being a good father was an important identity for some men to upkeep. Some men held the attitude that being healthy was more important than looks. Men seemed to believe that their doctors could have provided useful weight loss support during periods in their life when

they had undertaken weight loss, but they felt they had not received this. Many of the participants held the attitude that commercial weight loss groups were feminine and were not for men, and that men did not talk to other men for weight loss or dieting support. Several men held the attitude that it was the responsibility of their doctor to discuss weight loss with them if this was necessary. One man also acknowledged that it was his own fault that he was not motivated to lose weight. Attitudes towards women were that they were more knowledgeable about nutrition than men were, and attitudes towards personal trainers were that they were knowledgeable about both diet and exercise.

**Subjective norms:** Normative behaviours for men were discussed, such as a reluctance to reduce alcohol consumption with friends as a way to limit calorie intake, competitive behaviours with their friends. Within the home, normative behaviours for men in relationships with women included being cared for by women, and having meals prepared cooked and served up by women. On the whole, participants felt that commercial weight loss groups were not for men. Men's attitudes regarding the terms "diet" and "dieting" and their attitude towards commercial weight loss groups were associated with subjective norms; the majority of men did not relate to these activities and did not consider them to be masculine. They considered how dieting and commercial weight loss groups were seen by society, and were promoted by female role models, as a way for women to lose weight, but not for men. Men perceived exercise to be the strategy that male role models and wider society encouraged men to use in order to change body size or shape. In conjunction with men's attitudes that women knew more about diet and nutrition than men, this was reflected in the traditional gender role that men framed women to hold in the home. Men did talk positively about engaging in weight-related talk with their doctor, which is atypical behaviour for men since it is not masculine to have a concern for health. Men avoided healthy eating in the presence of

friends, and did not ask friends for diet support, but did show some tendencies towards copying the health behaviours of their friends. It was acceptable for men to seek professional support rather than to ask friends for weight loss support, because the former would damage their masculinity.

**Perceived behavioural control:** Men discussed their perceived limited control over the food that they ate at home, which was particularly evident among households with female partners and children. In families with or without children, men framed their partner as influencing, or controlling, their dietary intake. These influences were often perceived as beneficial, sometimes restrictive, however in a small number of cases these influences were not healthful. Women were framed as the decision-makers in households regarding food and it seemed men had more control over their physical activity behaviours than their dietary behaviours although both were influenced by their family members. In families with children, men accepted that meals needed to be catered to their child's tastes and preferences and acknowledged that it was not practical to eat a different meal to the rest of the family. Men who lived alone seemed to acknowledge the absence of someone in their life to prepare meals for them. Perceived barriers to being physically active with the whole family included childcare responsibilities that were shared between parents, or the physical capabilities of younger children. Some men experienced a barrier to enacting a specific behaviour or achieving a weight loss goal, and when they felt that they could not overcome these barriers on their own they seemed willing to enlist professional support in the form of health coaches and personal trainers to overcome these. A small number of men felt that they did not require support from a partner to engage in weight loss, they were in control of their own actions and behaviours.

#### 6.4 Reflection on study findings and sample characteristics

This sample of men were, on the whole, highly educated. Census data classifies qualifications as “none”, “level 1”, “level 2”, “level 3”, or “level 4 and above” (Census, 2011a). To transpose the findings of the short SES questionnaire administered to participants into these classifications, those with A levels, a Bachelor’s degree or post-graduate degrees would be classed as a “level 4 and above”. Only two men within this sample had no qualifications (10%), and 73.7% of participants (14/19) had A levels or higher. The countywide average for those without qualifications was 19.6% and across England the average is 22.5% (Census, 2011a). The countywide average for those with a level 4 or above qualification was 29.9%; in England the average proportion of people with a level 4 or above qualification is 27.4% (Census, 2011a). Therefore, this sample of men contained a much higher than average proportion of people with higher education qualifications compared to the countywide and national average.

Relationship status within this sample was similar to that of the county from which this sample came. Census 2011 data showed that, countywide, 9.5% of residents were divorced, that 50.2% were married, and that 30.5% of residents were single and had never been married or registered in a same-sex civil partnership (Census, 2011b). The data also showed that on average, across England, 34.6% of people were single and had never been married, 46.6% were married and 9.0% were divorced (Census, 2011b). The participants of this study were mainly married or living as married (52.6%), or single (31.6%); two participants were divorced (10.5%). Compared to the national and countywide data for relationship status, the participants of this study were similarly distributed. A limitation to the demographic data collected as a part of this PhD research study is that previous marital status was not asked for, and therefore it is unknown whether, for example, those who are married now had previously been divorced, or whether those who reported they were single had previously been married.

Men were eligible for inclusion in Study 1 if they did not meet the health exclusion criteria and if their BMI was within a specific range. This introduces limitations as to the reliability of conclusions drawn based upon these criteria. It is possible that men did not disclose health issues or had undiagnosed health issues. Furthermore the self-reporting of BMI could have influenced the BMI that men reported having. If men were aware that having a BMI  $\geq 30$  kg/m<sup>2</sup> was classified as “obese”, yet they did not consider their own bodies to be obese, it is possible that they may not have reported BMI accurately. Other research has found that those who are classified overweight or obese sometimes perceive that they are not (Burke, Heiland and Nadler, 2010). To summarise, the characteristics of this sample were not entirely typical of the general population and therefore findings may only be relevant to this demographic. This limits the transferability of findings from this population to another.

## 6.5 Conclusions

The results from the current study demonstrate that weight loss behaviours are influenced by concepts of masculinity which develop and change across the lifespan as their social circumstances also develop and change. Since men do not enact masculinity equally (Sloan, Gough and Conner, 2010), future research may seek to explore weight loss behaviours beyond gender alone and consider further the social, cultural and physical context across the lifespan. This study provides rich accounts and context surrounding the social influences upon men’s weight loss behaviours. It is thought to be the first study within this part of England to explore this topic among men who may be at risk of overweight (BMI 24.0-24.9 kg/m<sup>2</sup>) and to report detailed participant characteristics alongside quotes. It uncovers novel perspectives regarding GP support



and the health motives of younger men. It established the substantial impact that partners and children can have on weight-related behaviours. It also provides detailed, current information regarding the social barriers and facilitators men experience regarding weight loss behaviours.

**Chapter 7:**  
**“Well he didn’t have much choice in it. He got what he was given”:**  
**How do women perceive social relationships to influence men’s dietary, physical activity and weight loss behaviours?**

## 7.1 Introduction

This chapter presents the findings from the second research study that was undertaken as a part of this PhD. The first qualitative study highlighted the major influence of partners on male dietary, physical activity and weight loss behaviours, and identified the importance of children in motivating positive behaviour change among fathers. To explore these findings in more depth, a second qualitative study (Study 2) was designed. The purpose of Study 2 was to explore from the perspective of women, the influence that social contacts and social relationships had on men’s dietary, physical activity and weight loss behaviours. Specifically, the role that they themselves had on their male partner or male relative’s weight-related behaviours was explored. This study is thought to be the first of its kind; to the best of our knowledge no other research exists which has explored the social influences upon male weight loss behaviours from the perspective of a female relative.

## 7.2 Findings

### 7.2.1 Participant characteristics

The details regarding ethical approval for this study and the recruitment strategy can be found in the Methods chapter (Chapter 4). A total of 16 interviews were conducted with women. Tables 24 and 25 provide a detailed account of participant characteristics.

Fourteen of the interviews that were conducted focused on the woman's current partner. One interview was with a woman (Participant 13) who, through informal conversation at the beginning of the interview, stated she had recently separated from her husband but still wanted to take part in the interview. One interview was with a woman (Participant 6) who wanted to discuss her son's weight rather than her husband's, as she considered her husband to be "skinny" and not needing to lose weight. Sexual orientation was not recorded but due to the nature of interviews, and that the men discussed by women were predominantly their husbands, it is assumed that many women were heterosexual, but that is an assumption and women could have been bisexual. The mean age of participants was 44 (SD 8.7) years. Self-reported BMI was provided by 15 of the 16 women; mean BMI of women was 27.1 (SD 9.1) kg/m<sup>2</sup>. One woman was classed as underweight (BMI <18.5 kg/m<sup>2</sup>), seven women were of a healthy weight (BMI 18.5-24.9 kg/m<sup>2</sup>), three women were overweight, one woman was obese (BMI 30-39.9 kg/m<sup>2</sup>) and two women were morbidly obese (BMI ≥40 kg/m<sup>2</sup>). The majority of women had obtained A levels (4/16) or a University degree (9/16). Six participants listed themselves as unemployed, five as employed part-time and five as working full-time. Health criteria were not introduced into the eligibility or ineligibility criteria for this study since the focus was not the woman's health, but their perceptions regarding male dietary, physical activity and weight management behaviours.

**Table 24** Participant characteristics for Study 2

<b>Characteristic</b>	
<i>n</i> participants	16
Age, years <sup>1</sup>	44.0 (8.7)
BMI, kg/m <sup>2</sup> <sup>1,2</sup>	27.1 (9.1)
<b>Highest education level (<i>n</i>)</b>	
No qualifications	0
Less than 5 GCSEs	0
More than 5 GCSEs	0
NVQ or equivalent	3
A level	4
University degree	3
Post-graduate University degree	6
Other	0
<b>Marital status (<i>n</i>)</b>	
Single	0
Married <sup>3</sup>	14
Divorced	2
Widowed	0
<b>Employment (<i>n</i>)</b>	
Full time	5
Part time	5
Unemployed	6

1. Age and BMI presented as mean (SD).

2. Based on 15 participants

3. Married, cohabiting or living as married

**Table 25** Additional information regarding female participants obtained during interviews

Participant	Age	BMI	Working full time	Working part time	Not working	Married/living as married	Divorced/separated	Child < 18 years	Grandchildren*	Son*	Doctor *	Colleagues*	Friends*	PT*
1	36	29.0			✓	✓		✓		✓	✓	✓	✓	
2	54	21.0		✓		✓							✓	
3	42	24.7			✓	✓		✓			✓		✓	
4	53	13.5			✓	✓						✓	✓	
5	40	-		✓		✓		✓			✓			✓
6	56	41.2	✓			✓				✓			✓	
7	55	52.0			✓	✓	✓	✓	✓	✓	✓			✓
8	46	30.1	✓			✓		✓			✓			
9	38	26.6			✓	✓		✓			✓		✓	
10	52	22.8	✓			✓			✓		✓	✓	✓	
11	38	25.0	✓			✓							✓	✓
12	52	20.8			✓	✓				✓	✓	✓	✓	
13**	37	24.0	✓				✓	✓				✓	✓	
14	40	28.2		✓		✓		✓		✓			✓	
15	39	22.8		✓		✓		✓					✓	
16	26	24.9		✓		✓		✓				✓	✓	

\* Asterisk denotes a social contact that was discussed in relation to men's dietary, physical activity or weight-management behaviours

\*\* The focus of this interview was the participant's son and not male partner

Following a Thematic Analysis (Braun and Clarke, 2006) as outlined in Chapter 4, codes were organised into 6 themes (Table 26). The perceptions, experiences and attitudes of participants regarding the impact of social relationships on men's weight-

related behaviours are illustrated using direct quotations. Underneath each quotation, a short summary of the participant’s characteristics is provided.

**Table 26** Themes names for Study 2

<b>Theme number</b>	<b>Theme name</b>
Theme 1	Women’s tolerance of their partner’s weight-related behaviours
Theme 2	Reflections on facilitating healthier behaviours
Theme 3	A healthful family life
Theme 4	Female control and responsibility
Theme 5	An unhappy situation
Theme 6	Navigating identity and health in society

### 7.2.2 Theme 1: *“Women’s tolerance of their partner’s weight-related behaviours”*

Most women thought that their partner was overweight or obese, however, their partner’s BMI was not formally recorded as a part of this research study. Following the completion of the SES questionnaire, which included the reporting of their own BMI, it is understood that many of the participants were classified as overweight or obese. A few women perceived that excess weight had a negative impact on health. While several women appeared to tolerate or accept their partner’s weight, other women, primarily those within a healthy weight range, thought that their partners should lose weight for their health, to feel better, or “for their family”:

*“I’m not happy with his weight, in all honesty. I think he would benefit from losing three stone.”*

*Participant 1, aged 36 years, BMI 29.0 kg/m<sup>2</sup>, married*

Many women thought that their partners should be more physically active. A small number of participants described ways in which their partners had an “*all or nothing*” mind-set, alternating between pushing themselves very hard, and then stopping all activities due to the aggravation of an old injury, a lack of confidence, or feelings of exhaustion:

*“when he was a teenager he ripped both of his Achilles tendons. So the minute they start hurting, he just stops and packs it all in so then he puts the weight back on again.”*

*Participant 16, aged 26 years, BMI 24.9 kg/m<sup>2</sup>*

Women seemed to be open and honest with the researcher about their perspectives of their partner’s behaviours. In only a small number of instances, women seemed to be dismissive, ridiculing or condescending of men’s efforts to be physically active or to eat a healthier diet. In doing so they seemed to place their partners efforts as inferior to their own:

*“...he has fads, so at the moment he’s eating raw carrot, which is fine – but next week it won’t be raw carrot. It will be something else.”*

*Participant 11, aged 38 years, BMI 25.0 kg/m<sup>2</sup>, married*

Significant barriers to men’s physical activity included their work schedule, feelings of tiredness, or a lack of free time. Four women thought that their partners lacked knowledge about healthy eating, and a few others that one barrier to healthy eating was a lack of motivation to eat healthily:

*“his knowledge of what to eat is very good too. There’s nothing wrong with what he knows; it’s just about whether he’s motivated that month.”*

*Participant 9, aged 38 years, BMI 26.6 kg/m<sup>2</sup>, married*

This theme focused on women's attitudes towards their partner's nutritional behaviours, physical activity behaviours, weight and weight-loss behaviours. It explored their perceptions of their partner's strategies to manage their weight and their understandings of why their partners enacted these behaviours. This theme also captured the ways in which participants seemed to tolerate or accept their partners behaviours which may have been masking other feelings such as superiority or condescendence.

### *7.2.3 Theme 2: "Reflections on facilitating healthier behaviours"*

This theme discusses the varied roles that women played in men's weight-related behaviours, their reflections on the relative success of being involved in their partner's weight-related behaviours, and difficulties they encountered when being involved. Towards the end of the theme the perceived impact that being in a relationship had upon dietary intake, physical activity behaviours and weight, of both parties, is also explored. Women perceived that the uptake of health behaviours by their male relatives, or continuation of health behaviours by their male relatives, could be facilitated by personal encouragement from themselves or from another family member. Women also discussed how the use of electronic fitness devices could influence health behaviours; this included wearable fitness monitors, watches and step counters, and apps on their mobile telephones. However, some of the participants thought that behaviour change would be unlikely unless the motivation came from the men themselves.

*"If you haven't got that motivation, nothing is going to work because you've got to do it for yourself, not for other people."*

*Participant 7, aged 55 years, BMI 52.0 kg/m<sup>2</sup>, divorced*



Overall, it seemed that women were involved in the identification of unhealthy behaviours in their partners and in the subsequent encouraging or facilitating of healthier behaviours in their partners:

*“I think women have an awareness of health and want their husbands to get healthy. They’re often the little nudge nudge”*

*Participant 5, aged 40, BMI not reported, married*

The encouragement that women provided their partners took a number of different forms. They saw that they could facilitate health behaviours through their physical activity competitiveness with their partner, by providing him with expert guidance regarding nutrition, or as an enabler for these healthier behaviours. The following extract highlights how one woman saw herself as a sounding board and provider of advice or approval for her husband:

*“I don't, I don't know whether he asks me for support, um, but yeah, he'll...well I suppose he kind of does 'cause he runs it all past me. So he won't say like, "I'm gonna do this, "he'll say like, "I'm thinking of doing this, what, do you think it's a good idea?"”*

*Participant 16, aged 26 years, BMI 24.9 kg/m<sup>2</sup>, married*

Participant 16 also explained that her husband came from a family that did not do much home cooking, and since living with her, she had encouraged him to cook instead of buy takeaway meals. For four women, they saw that taking advantage of their partner’s competitive nature could result in healthier lifestyle behaviours. There were instances where women competed with their partners, and where they thought that their partners competing with other people could result in physical activity, weight loss and healthy eating:

*“So when we got the bikes I knew where I wanted to go, I knew where I could get to on the bike. I knew he would struggle, but I just kept going and I just went miles ahead so he would have to keep up, he would have to follow me.”*

*Participant 11, aged 38 years, BMI 25.0 kg/m<sup>2</sup>, married*

Engaging in activities together was one way that some women were able to encourage their partner to be physically active. Not all of the women were able to persuade their partners to exercise with them. Only one woman, who was one of the older participants, explained the difficulties she was having. This woman was eager to exercise with her husband but she framed him as reluctant to do this, and so she was having limited success at persuading him to join in:

*“I wish I could persuade him to come to the gym with me ... it would be nice to exercise together.”*

*Participant 12, aged 52, BMI 20.8 kg/m<sup>2</sup>, married*

One other way that women thought they could help their partners to lose weight was to go along the weight loss journey together with their partner; they thought this would be a way of showing their support. As enablers, several women chose to create situations that allowed men to undertake activity or to eat healthily:

*“If he wanted me to go and do an exercise with him then, then I’d, then I’d do it. But then if he wants me to look after the children so that he could go with somebody else and do an exercise then I’d be more than happy with that too.”*

*Participant 3, aged 42 years, BMI 24.7 kg/m<sup>2</sup>, married*

In the minority of cases, the sense of togetherness and sharing of behaviours could also lead to the sharing of unhealthy behaviours. Two other women reflected on their actions with their partner; being “couch potatoes” and obtaining a lot of their calories from

alcohol were just two ways in which women thought being in a relationship was an opportunity to indulge in unhealthy behaviours together. Further to this, participants also seemed to be placed in a position wherein they had to decide whether to attempt to control or command, rather than facilitate, some of their partners' weight-related behaviours. One woman, who was living with her partner, both of whom were carrying excess weight, attempted to prevent him from eating unhealthily but ultimately, they shared his snacking behaviour:

*“he likes cakes and biscuits and crisps, and I try not to buy them because he has got a problem with being overweight. But it's like, oh no I want it I want it, oh alright then, I'm not your mum...Once he's got them I start eating them as well.”*

*Participant 7, aged 55 years, BMI 52.0 kg/m<sup>2</sup>, divorced*

Conversely, a couple of women talked about the ways in which they felt that being in a relationship had a beneficial impact upon health behaviours as a result of their partner's input. In two instances it seemed that it has been a male partner who had provided support for the female participant to be more active, or to lose weight. They both acknowledged this support and voiced their appreciation.

During the interview, women were asked about weight-loss support for their partner and many discussed the influence they thought a doctor could have. A few women thought that, in theory, a doctor would have a positive influence on men's weight-related behaviours. However, when discussing actual behaviours, very few women described an instance where their partner had been successfully motivated to lose weight by their doctor, and a small number of women described times when the doctor had made comments about weight that had offended their male relatives. Participant 9 was one of two participants to discuss the negative impact that women would have when trying to elicit health behaviours by pressuring or forcing their partner to visit the doctor. She

reflected on how some women would take their reluctant partners to see a doctor after deciding for them that they should go:

*“You get a man dragged along, and it's the cynical side of me, but man dragged along to the doctors, sat in front of the doctor while the wife goes [hand gestures for talking], and the man is like, yeah.”*

*Participant 9, aged 38 years, BMI 26.6 kg/m<sup>2</sup>, married*

This theme highlighted women's attitudes and perceptions about motivation for behaviour change and the varying roles that female partners played in initiating or maintaining behaviour change in their partner. This theme also explored how women could try to facilitate healthier behaviours or weight loss among their partners by encouraging or pressuring them to speak with their doctors.

#### 7.2.4 Theme 3: *“A healthful family life”*

This theme focused on healthy lifestyles within the family unit and what the participants thought men's roles as fathers and grandfathers involved in the context of food and physical activity behaviours. Many women had children and talked extensively about their families. For those with children of a school age or younger, it seemed that food behaviours as a couple had changed since having children. For a small number of women, being a mother had resulted in a period of nutrition research to ensure they were capable of providing their children with what they considered to be a healthy diet. However, one woman described how her partner had instead taught her about nutrition and exercise since becoming a couple and now a family. It seemed that bringing a child into the family had resulted in a change in diet for the entire family, with a new or

renewed focus on eating healthily. Men were also reported to change their eating behaviours and it seemed important to be a healthy father:

*“Um, so, yeah, he's, I'm really aware of what we eat because of our daughter so we eat quite healthily at home now. Obviously if I wouldn't be happy with her eating it then we don't eat it. Um, so I think it's made him much more aware of what he's eating and when he's eating it”*

*Participant 16, aged 26 years, BMI 24.9 kg/m<sup>2</sup>, married*

Several women also discussed how their partners' physical activity behaviours had changed since having a family. Some women thought their partners had fewer opportunities to do structured exercise and that their focus had changed from improving body image and muscularity, to health or general fitness. Approximately half of all participants discussed being active as a whole family or talked about activities that their partner did with the children, such as playing at the park or going on a family walk or bike ride. The following extract highlights how time as a family was spent together for one participant, her partner and their children:

*“I'd say walking is the activity that we do together the most... it's a good chance to get some fresh air, have a chat, clear your mind and exercise the dogs and kids.”*

*Participant 1, aged 36 years, BMI 29.0 kg/m<sup>2</sup>, married*

One woman reflected on how her husband's body size had changed with time; being a father played a role in the types of exercises he was motivated, or available, to do. As parents they had to juggle the opportunities between themselves to be physically active:

*Once you've had kids, there's, there's quite a disjoint-, one takes exercise, the other has to look after the kids and yeah. I think it's something that will come back later on”*

*Participant 9, aged 38 years, BMI 26.6 kg/m<sup>2</sup>*

Further to this point, many women discussed men's role as a dad, or less frequently as a grandfather, in terms of physical activity and active play with children, and how this usually took place after work or at weekends. The types of activities they did depended on the child's age; dads with younger children often carried out unstructured or lower intensity activities, like walking or playing; those with older children sometimes played team sports or went to the gym together.

*“My little boy remembers [partner] doing press-ups with him sat on his back. [Laughter], and he was never big enough to sit on his feet before, but he is now old enough and able to sit on his feet and help to do sit-ups.”*

*Participant 15, aged 39 years, BMI 22.8 kg/m<sup>2</sup>, married*

Participant 1 regarded her family as an important source of support for encouraging weight loss; both for herself and for her partner. She had several children and her account emphasised the value she placed on having the support and presence of her entire family unit, and not just her partner:

*“Honestly, I don't think I supported him, I think it was more that he was supporting me. His change in diet was down to the fact that I wanted to lose weight... We would have taken the children [to the commercial weight loss group] because it doesn't hurt for them to be aware of what's going on around. That way they're able to show their support.”*

*Participant 1, aged 36 years, BMI 29.0 kg/m<sup>2</sup>, married*

The importance of family support was also echoed by two other participants. It seemed that weight loss for Participant 15's partner had become a whole-family concern; she described an instance where her husband had enlisted the support of their young son by saying: *"For every pound [weight] that I lose you will get a pound [money]"*. This extract emphasised the input from family members that women perceived men to desire. This theme demonstrated how families engaged in healthy lifestyles together as a whole unit. This theme identified the high value that women placed on family support, which was echoed in their descriptions of how family members could facilitate male weight loss. Women frequently framed family support as desirable and supportive.

#### 7.2.5 Theme 4: *"Female control and responsibility"*

This theme focused on the control that women seemed to have over men's weight-related behaviours. Most women described the ways in which they were in control of food and nutrition within the home. Several women described having more control over their partner's food intake than their physical activity, and women talked of using diet as a lever to improve health. A small number of women seemed to realise their control over their partner's food intake when recalling their own involvement with household food shopping, meal planning and food preparation:

*"I would control all of us I think by what I put in because I can't control what he does with his exercise. He's either going to do it or he's not... I do all the food shopping, all the food prep and all the cooking and that's because I am very much in control of my kitchen. My husband is not allowed in my kitchen. Um, that's just a personal thing for me. It's not that he can't cook, he's perfectly fine at cooking.... I just, I prefer it that way."*

*Participant 9, aged 38 years, BMI 26.6 kg/m<sup>2</sup>, married*

Men were framed as having a smaller role in the care for their children compared to women, and three women regarded their partner's attempts to be involved with children's nutrition as inconsistent, incorrect or inferior to their own actions. A small number of women had nutrition rules for their children and their partners. These women seemed frustrated when men didn't adhere to these nutrition rules or didn't eat what was provided for them. In particular, Participant 15 voiced the frustration she felt with her husband, when she had spent time preparing a meal however her husband would not wait for dinner to be served and would snack as she cooked. She would make comments to him in an attempt to stop his behaviours, but these seemed unsuccessful:

*"... if you have cooked like, a nice meal, and he has helped himself to the fridge to have something else before it, when it is almost on the table, it is like, 'agh!' And then I will say, 'you are not helping yourself, you are snacking and then you want to lose weight'. And then, 'what do you expect?', kind of thing. But it is more, kind of, it is almost like out of anger, I guess. Because I know that it is a sensitive subject and I have just spent all this time cooking a meal! [Laughter]."*

*Participant 15, aged 39 years, BMI 22.8 kg/m<sup>2</sup>*

Some women framed their male partners as lacking self-control regarding nutrition. For some this triggered feelings of responsibility to control the food environment as a way to facilitate healthier eating among their partner:

*"See, I feel quite bad now because I think I could be more of a motivator for him. Control him more [laugh] ... I should be stricter with him [laugh]."*

*Participant 12, aged 52 years, BMI 20.8 kg/m<sup>2</sup>*



Several of the participants felt that it was their responsibility to provide healthy food options for their husbands, which seemed to require taking more control over household nutrition. The participants reflected on being in this dominant position regarding nutrition:

*“Well he didn’t have much choice in it. He got what he was given.”*

*Participant 10, aged 52 years, BMI 22.8 kg/m<sup>2</sup>, married*

Although many of the participants seemed to have assumed responsibility for their partner’s dietary behaviours and for their weight control, a couple of them did this reluctantly. It seemed that these particularly women felt that being responsible for meal choice and preparation was a burden. One participant; who lived with her partner and whose son had moved out in recent years to go to University; articulated these feelings very clearly when she described her thoughts about cooking for her family:

*“I hate cooking. I’d rather be on the computer any day. Um so it has to be some that’s quick and easy... I think it’s such a thankless task as no matter whether it’s taken you five hours to make something or ten minutes, it’s all gone down the same way and everybody’s off doing what they’re doing again.”*

*Participant 6, aged 56, BMI 41.2 kg/m<sup>2</sup>, married*

A few women thought that men in their lives would not eat healthily or be active unless reminded or pushed to do so. One woman, however, thought that having so much control was detrimental to men’s well-being. It was framed by this participant as demotivational, with the possibility for judgement and gossiping with others, should the drive for behaviour change come from a female partner:

*“And I have heard, through the grapevine, of a woman literally sort of kicking her man into touch to go running to lose like three stone. Now don't get me wrong, it's great for his health but I'm not sure it's as good for their mental attitude... I think they lose something when they have to be told like that. So I think women getting involved could be quite detrimental. I think it's 'cause women don't realise how much we, we can beat them down a bit, if you know what I mean. We don't, we don't do it on purpose but we can be a little bit derogatory in situations like that...”*

*Participant 9, aged 38 years, BMI 26.6 kg/m<sup>2</sup>*

Another participant reflected on what being a partner meant to her, and as a part of this she thought that it was “*not her job*” to motivate or tell her partner to be healthy; his health was his own responsibility:

*“I do what I want to do, he does what he wants to do, food wise and things like that. It's not my job to tell him to go out and walk around.”*

*Participant 4, aged 53, BMI 13.5 kg/m<sup>2</sup>, married*

This theme focused on the control, autonomy and authority that women had concerning their partners' eating behaviours in the home. Some women felt burdened with responsibility to promote healthy eating, whilst others were very protective of this role, and conversely, one woman dismissed this role.

#### 7.2.6 Theme 5: “*An unhappy situation*”

This theme focused on the feelings of unhappiness that seemed to surround the discussion of weight-related behaviours between several couples. Participant 12, however, discussed how she thought body image concerns were more prominent among

younger men, such as her son, rather than older men like her husband. She thought that the pressures were so great to the extent that the young men at the gym she was attending were *“taking steroids and whatever and getting a bit obsessive”*. This theme also encompassed the discussions or arguments that participants had with their partners in relation to dietary, physical activity or weight-related behaviours. It seemed that in some cases, broaching the topic of weight with their partner was an unhappy event for the participants; typically a discussion on this topic was not well received and their frustrations became evident in the way that they spoke about their partner’s body size:

*“If I try to comment on his weight he will just get defensive and cross, so I don’t think that helps him really, so it’s difficult, isn’t it? It’s difficult because you can’t really say, “Oh, look, you weren’t a big fat slob when I met you.”*  
*[Laughter]. You don’t want to upset them, but you do...”*

*Participant 12, aged 52, BMI 20.8 kg/m<sup>2</sup>, married*

Approximately one third of participants thought that their romantic partners were sensitive and unhappy about their body image; some linked this with a change in physical activity or nutrition behaviours. Some women also framed their partners as lacking confidence to exercise in public:

*“He used to really like his running, but I think, it is a conscious thing now, isn’t it, because he has put on the weight, he is aware that he is not able to perform as well as he wants to, so therefore, he doesn’t want to go and do it ... he used to go and do exercise on the common and go running on the beach, he would go top off and all of that, so possibly a little bit is kind of physical awareness of his own body form that he is not particularly proud of at the moment.”*

*Participant 15, aged 39 years, BMI 22.8 kg/m<sup>2</sup>*

Women discussed how they noticed their partners becoming frustrated or disheartened with how tightly their clothes now fit. One woman reported that her partner had gotten in a “huff” over how tightly a jumper had fit him and had started doing sit-ups at home to gain a more muscular stomach. It seemed that several women thought that men, and more specifically their partners, may prefer to exercise and lose weight at home, as a way to maintain privacy and avoid embarrassment.

*“if they [resistance bands] were in the house he’d probably feel more inclined to because it’s more privacy, less embarrassment...he’s quite self-conscious about his weight...”*

*Participant 1, aged 36 years, BMI 29.0 kg/m<sup>2</sup>, married*

Participants thought that when their partners had been called or labelled as obese by someone else this had upset and offended them. It also seemed that their partners might have been aware they were carrying excess weight however the use of this particular term had offended or disengaged their partner in conversations about their weight.

Participant 10 provided an example of when the doctor had called her husband obese and how this had upset him:

*“When we first moved here, and we had to sign up to a GP. And you go and do your weight and your height and what have you. They told him then that he was bordering on obese, which he was really offended by. Just the term itself he got quite offended by it. Yes. “He so went and called me obese.” He got quite upset about it. I think he was upset because he knew that he was... I think if they said to him, “You’re overweight.” He’d have gone, “Oh yeah, I know. I really should do something about it.””*

*Participant 10, aged 52 years, BMI 22.8 kg/m<sup>2</sup>*

One woman described how she thought her partner was jealous of her successful weight loss, but that she would feel jealous if he went to a weight loss group with other women. A few other women described feelings of frustration, jealousy, anger and distrust with their partner's weight-related behaviours. Four women talked about their partner's secretive snacking behaviours. Participants described being watchful of their partner's eating behaviours, and it seemed that some were confrontational about what they perceived to be deviant behaviour. There was an element of distrust among women when men reported their food intake to them. Men's secret eating typically occurred outside the home, and partners would find evidence of this, such as sweet wrappers hidden in the car, or would notice comments from other people about their partner's food choices. The following quotation highlights how one woman's distrust was brought about by a comment from someone at her husband's workplace:

*"...he will say to me that he's had soup and a salad for lunch...the other year we went to their [work] Christmas dinner, and the dinner lady person who was serving just looked at him and said, "Oh, you'll want one of everything," so I think, well, he's telling me that he's having soup and a salad when the lady knows that he eats a lot."*

*Participant 12, aged 52, BMI 20.8 kg/m<sup>2</sup>, married*

As previously discussed, some participants were aware that their partners lacked confidence about their body size or shape. Therefore, when seeking power over their partner, or when frustrated with something they had done, some women mocked their partners or made hurtful comments about their behaviours as an apparent way to dominate. One participant noted that these comments could be very detrimental so avoided them:

*“Even if there were no barriers on what you could say or do, I still wouldn’t say to him, “You’re looking fat today.” It wouldn’t serve any purpose whatsoever other than to hurt his feelings. It wouldn’t serve any positive purpose. It would piss him off and it would hurt his feelings.”*

*Participant 2, aged 54, BMI 21.0 kg/m<sup>2</sup>, married*

A small number of women reported that their partners had asked them to nag them about eating more healthily. Others nagged as a way to elicit health behaviours, however, the success of this seemed varied:

*“Sometimes I feel like the more I nag him, the more he comfort eats, because he will admit that food is his biggest problem, and boredom. I mean, I nag him because he asks me to.”*

*Participant 1, aged 36 years, BMI 29.0 kg/m<sup>2</sup>*

Some women thought that it was generally not constructive to nag their partners or to force behaviours such as going to see a doctor or to eat more healthily. It did seem that nagging had the potential to cause tension or arguments between the couple. A small number of participants described scenarios where food and diet became an unhappy topic among the couple. For one woman, she thought that if she were to share the diet or weight loss advice obtained during her own attendance at a weight loss group, he would sneer at this advice. Another woman thought that her husband was unmotivated and reluctant to see his doctor, and that if she were to insist he see a doctor that it may result in an argument between them:

*“But he- he wouldn’t go to the doctors. If I sort of begged him he might. If I said, “I’m making an appointment [to see the GP] and I’m dragging you there” he might, but we’d have a proper row about it.”*

*Participant 10, aged 52 years, BMI 22.8 kg/m<sup>2</sup>, married*

This theme identified how men's partners attempted to encourage them to make healthier lifestyle choices. While most of this sample described positive intentions to improve men's health, the way in which these behaviours were encouraged or enforced were sometimes not harmonious or benevolent.

#### 7.2.7 Theme 6: *"Navigating identity and health in society"*

This theme focuses on gender norms and masculine behaviours. It discussed different genderised activities and whether the participants and their partners would engage in these or not. Several participants associated the home environment, and specifically the kitchen, as the place for women, for mothers and for housewives. Although one woman said she disliked cooking and would rather be on the computer, she was the only one to say this.

Women thought that their partners would generally avoid things that they, or society, identified as being feminine: dieting, eating salad, or attending weight loss groups.

These activities, however, were ones that they talked about doing themselves:

***"Did he ever think about going to, like, Slimming World or anything?"***

*No, he'd never do that. Like, that's what I mean, it's like not his thing. He's just like, 'that's what women do'. That's a woman's thing because Slimming World sounds girly in his eyes...*

*Participant 13, aged 37 years, BMI 24.0 kg/m<sup>2</sup>*

Only one woman (Participant 7) reported that her husband had attended a weight loss group; he had previously attended with her as this was his way to show support for her weight loss efforts. Approximately half of the participants thought that men would

identify with eating and physical activity behaviours that were more traditionally associated with masculinity, such as strength training, drinking alcohol, eating meat and take-away foods:

*“If I said to him like we're, we're going to have a salad, he wouldn't touch it, literally wouldn't touch it. But if I said to him like, "We could do chips like this way," if we bought like one of them deep fat fryers or whatever that you only use a teaspoon of fat, like that's a healthy way of doing chips, he'd be all over it.”*

*Participant 16, aged 26 years, BMI 24.9 kg/m<sup>2</sup>, married*

Women considered that it would be less detrimental or damaging to masculinity to use exercise as a weight-management strategy, rather than dieting. A couple of women thought that personal trainers were an acceptable source of support for men to use; one woman noting her partner was a personal trainer and that he would seek the advice of another personal trainer that he respected should he require any further guidance. Men were framed as more likely to discuss exercise habits than dietary behaviours with other people:

*“I hear the men talking about training sometimes, how many reps they did this or you know, whatever. That I hear, um, but you never hear them really talking about their weight and whether they're on a bit of a diet and stuff.”*

*Participant 9, aged 38 years, BMI 26.6 kg/m<sup>2</sup>*

It was also framed as more acceptable for men to attend a weight loss group that would use sport rather than a diet as the focus of the group sessions. Women thought that their partners' friends had a positive impact on their partners' activity levels; although it is important to note that a couple of the participants thought that their partners did not have many friends and lacked people to be active with other than themselves.



Approximately one third of the participants thought that their male partners enjoyed being involved in a team sport, which was seen as social engagement as well as an opportunity to be active. However, one woman noted a downside of this; after playing a rugby match her husband would engage in excessive alcohol drinking with his team-mates. Women generally thought that their partners' friends had either no impact or a negative impact on men's weight loss and healthy eating. This seemed to be for a number of reasons; because weight and dieting were not discussed with men's friends, men's friends were not contemplating weight loss, or men's friends actively encouraged unhealthy eating behaviours:

*“Most of his male friends are quite happy with their weight or are not really into exercise...He does have a friend at work who's a little bit of a bad influence because, by his friend's own admission, he loves chips and there's a chip shop that they meet by on their daily walk. They go for a walk at lunch time.”*

*Participant 1, aged 36 years, BMI 29.0 kg/m<sup>2</sup>, married*

The workplace was thought to be a difficult environment for men to eat healthily or to be active in. Not only did women see the nature of working at a desk as a barrier to being active, but a small number of women thought that there was a propensity for unhealthy snacks and foods to be shared together in the workplace. In contrast, one woman talked about how her partner had undertaken a work-based weight loss group with colleagues. It seemed that there was a competitive element to weight loss for her partner and his colleagues:

*“I just think they started doing it at work, and they just continued to do it. I think some of them were overweight down there, so they decided on his shift to do a weigh in every Friday. And now they all get excited about losing a bit of weight... he is enjoying doing his weight check every Friday. Him and all his mates.”*

*Participant 4, aged 53, BMI 13.5 kg/m<sup>2</sup>, married*

This theme demonstrated how health behaviours were navigated in the context of traditional gender norms and masculinity. It seemed that friends had a negative influence on health behaviours, due to the propensity for men to actively avoid health-conscious behaviours in their presence. Unusually, one woman noted that her partner was a part of a weight loss group with his work colleagues, which highlighted the possibility for men to engage in behaviours which protect or improve their health in the presence of their friends.

#### 7.2.8 Summary of results

This chapter presents the results from the qualitative study with women. Key findings of this research include that women positioned themselves as the nutrition experts and in control of the running of the home and family food intake. Women considered themselves to be the people that their male partners would seek advice, support or guidance from when attempting to eat more healthily or embark on a weight loss diet. Additionally, women perceived doctors to be a good source of information and guidance for men. However, it seemed that men did not engage with their doctor unless coerced. Often men had previous bad experiences of engaging with their doctor and were disinclined to seek further advice. Women perceived men to be sensitive about their body size and how their clothes fit. There were several accounts where women regarded working fathers as part-time fathers who made inconsistent or improper choices regarding nutrition for themselves and for their children. Other social contacts included friends, who were largely viewed by women as a poor influence on men's dietary intake; and personal trainers, who were discussed very infrequently throughout

the interviews but were considered by women to be a source of physical activity advice that men might seek. This chapter has discussed how women perceive the social relationships that men have, in particular with partners, to have an influence on dietary and activity behaviours, for better or for worse. The next chapter, Chapter 8, provides a discussion of the study results in relation to the wider literature and the TPB.

## **Chapter 8:**

### **Discussion of Study 2 findings**

This study explored the perceptions that women hold about how social influences impacted men's weight related health behaviours. Study 2 provided new and novel insights regarding how women perceive their own role, and the role of others, in the context of men's weight. Women framed men's dietary, physical activity and weight loss behaviours within very traditional conceptions of partner and family relationships. Women focused on the impact they and their families had upon their partner's eating behaviours and identified social contacts men had outside of the home which they also thought influenced behaviours. Key study findings will first be discussed in relation to the wider literature and then the constructs comprising the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991). Many of the references included within this chapter were identified during Literature Review 1 or 2 database searching, or from additional searches of scientific databases.

#### **8.1 Being a good wife and a good mother: women's role in the partnership and in the home**

The women who took part in Study 2 mostly framed themselves as more knowledgeable and capable regarding nutrition than men, and as controlling the home food environment. It appeared that men had limited choice or control over what evening meals were prepared, or what food was available in the home; some women actively excluded men from the kitchen. Additionally, women also framed themselves as the family health care provider. These findings relate strongly to traditional gender norms, performance of traditional gender roles and the typical gender division of labour within

the home (Courtenay, 2000; Verdonk, Seesing and de Rijk, 2010). Women are typically the nutrition gatekeepers within the home and do the majority of food work and housework (Harnack et al., 1998; Fielding-Singh, 2017). The current study found that women did not discuss attempting to redress the issue of being the primary food provider for the house, as was also found in previous research (Tanner, Petersen and Fraser, 2014).

Women perceived that they were the motivators, the enablers and the enforcers for health behaviours among their male relatives. For some, this seemed to be a role they were assigned rather than one they had chosen, and thus seemed to be enacted with reluctance by a small few. Men typically cite their partners as a valuable source of support during periods of weight loss or dieting (De Souza and Ciclitira, 2005; Mallyon et al., 2010; Maclean et al., 2014). The available literature regarding partner support specifically for male weight loss is very limited, however, one research study demonstrated a positive effect on weight when couples lost weight together rather than a male losing weight alone (Golan et al., 2010). The potential for a spouse to facilitate health behaviours is an important finding of this study and has practical implications regarding male weight loss intervention design.

A small number of women attempted to control certain nutritional behaviours among their partners and were unhappy when men did not comply. The disagreements that women reported having with their male partners regarding healthy eating seemed to be highly emotive. These women were also mothers and seemed to have nutrition rules for their partners as they did their children. As nutrition-conscious women, it appeared frustrating for women when their partners attempted to secretly eat unhealthy food, ate outside of set meal times, or were potentially dishonest about what they had eaten when questioned. It seemed that a small number of women were unhappy with their partners' eating behaviours and made comments about weight and weight loss efforts to partners

that could be interpreted as mocking, hurtful or unkind. Nagging was one strategy to convey messages about healthy eating. A case-study published in 1977 explored how one husband's derogatory comments to his wife regarding her weight had a negative impact on her weight loss (Matson, 1977). The study found improvements in the woman's weight loss when her husband was recruited as a social reinforcer, and when he was instructed not to make any more negative comments to her about her weight (Matson, 1977). Qualitative research among obese adults found that their worst experiences of weight stigmatisation came from family and friends (Puhl et al., 2007). One study of men's perspectives of weight stigmatisation found that comments from women were considered "*more "hurtful and cutting" than comments made by other men*" (Lozano-Sufrategui et al., 2016, p. 12). The current study found that women's attitudes and subsequent negative comments did not prevent what women considered to be unhealthy or deviant behaviours from occurring among their partners. The negative comments instead seemed to damage aspects of trust or happiness within the relationship.

## 8.2 Husband to father and masculine identity

Central to this section is the concept of hegemonic masculinity and "doing gender" (West and Zimmerman, 1987; Carrigan, Connell and Lee, 1985; Connell and Messerschmidt, 2005). Hegemonic masculinity theorises that men are expected, by society, to behave in particular ways, such as: drinking large quantities of alcohol; engaging in risk-taking behaviours; to have a large and muscular physique; to consume large quantities of food; to eat meat. Engaging in weight loss conflicts with hegemonic masculinity ideals, because healthy eating and dieting are stereotypically feminine activities (Gough and Conner, 2006; Gough, 2007; Sloan, Gough and Conner, 2010;

Sabinsky et al., 2007). It has also been found that men often have the view that commercial weight loss programmes are feminine and “girly” (Bennett and Gough, 2013, p. 290). However, the current research study found that when men become fathers, enacting masculinity seemed to become less of a priority; being a “family man” became their focus. A limitation to this finding is that it is based on a small proportion of this sample of men. To confirm whether this phenomenon exists among wider populations, research with other samples of men and fathers should be undertaken.

Men’s motivation to live a healthy lifestyle was thought predominantly to come from their identity as a father, and to be seen by others as a good father. Previous research has found that one motive for overweight men to lose weight is so that they can demonstrate “responsible fatherhood” (Monaghan and Malson, 2013, p. 312). Among a sample of Hispanic mothers it was found that they perceived fathers to support healthy eating and physical activity among their children (Lora, Cheney and Branscum, 2017). Family life and having children seemed to have a large impact on men’s physical activity behaviours. Men’s active play with their children was framed as an integral part of family life and an opportunity for fathers to bond with children. Physical activity has been described as an important mechanism by which a father and child can bond (Young and Morgan, 2017). A recent research study found that an intervention designed to target physical activity among daughters and their fathers was effective at improving activity levels and reducing screen time among fathers and daughters (Morgan et al., 2018). Furthermore, it is reported that programme satisfaction and attendance was very high (Morgan et al., 2018).

The women in this study reported that fathers had a smaller duty of care to their children compared to themselves; they described men’s involvement predominantly focused around active play, whenever fathers were available for this. Other research has found that working fathers are “absent from their families much of the time” (Carrigan,

Connell and Lee, 1985, p. 560). Interventions that target male weight loss, that incorporate men's children into the study design, have been successful and effective (Morgan et al., 2011b; Morgan et al., 2014). Findings from the current study suggest that women perceive men to greatly enjoy spending time being active with their children, therefore, an activity-based weight loss or health improvement intervention with their children may appeal to men and prove successful.

Women framed their partners in a typically masculine way: having an aversion to salad, slimming, dieting and weight loss groups; and an affinity to meat, alcohol and team sports. This finding is confirmed by the findings from Study 1, as well as Literature Review 1 and the wider literature (Bunn et al., 2016; De Visser and Smith, 2006; Newcombe et al., 2012; Sabinsky et al., 2007).

A key finding of the research, however, was that men were framed as sensitive about their weight and size, in particular, about how tightly their clothes fit or how they looked. When describing how they thought their partners felt about their body image, women used words and phrases such as "low confidence", "sensitive", and "self-conscious". Typically, men have been framed as embracing larger bodies as a way to display their masculinity and comply with social norms (Monaghan and Hardey, 2009; Monaghan and Malson, 2013; Gattario et al., 2015). A concern with body appearance and a desire for slimness is more commonly associated with women and with homosexual men (Kaminski et al., 2005) and larger men have been described as unconcerned about their body size or weight (Monaghan and Malson, 2013). However, research with younger men of a variety of sexual orientations found that the majority of men ranked body image as important to them (Morgan and Arcelus, 2009) and a concern with body image was also identified throughout Study 1. The research presented in Chapter 7 included findings relating to women's satisfaction with their partner's body size or health behaviours. Men are more likely to be satisfied with their



own body if they perceived their female partners to be satisfied, and if female partners were actually satisfied, with their (male) partner's body size (Goins, 2010). This important finding from Study 2 demonstrates that body image concerns are perceived by women to be prevalent among heterosexual men, or men in relationships with women. This information will be important to those who engage men in weight-related discussions; professionally or personally. These findings should be carefully considered by those who men approach about their body image concerns, and steps should be taken to protect masculinity and avoid further embarrassment or emasculation.

### 8.3 How other people play a role

Women thought that men's friends and colleagues could have a negative impact on diet and weight loss. Women considered how, within the workplace, men would be less likely to decline unhealthy snacks, and men would avoid eating stereotypically healthy or feminine foods in the presence of their peers, to avoid social awkwardness or judgement. Women considered how men's friends might have a positive impact on their physical activity behaviours since it is socially acceptable for men to engage in sport, compete against each other and demonstrate sporting prowess (Courtenay, 2000). Sport has also been found to be associated with masculine capital more so than sexuality or alcohol consumption (De Visser and McDonnell, 2013) and therefore by engaging in sport with their peers, this is one way in which men could construct and "do" gender and demonstrate masculinity (Courtenay, 2000; West and Zimmerman, 1987).

In women's accounts, their partners' consultations with a doctor had not resulted in weight loss, however, women thought that doctors could be a source of motivation and a voice of authority that their partners may listen to. However, a small number also discussed how their partners had been demotivated and offended by a consultation with

the doctor about their weight. While this finding seemed contradictory, it could be construed as women's perceptions of doctor support versus men's experiences of doctor support. Men's avoidance of help-seeking behaviours is concurrent with other literature which suggests that men avoid consultations with their doctor in order to protect masculinity and avoid appearing weak or infirm (Sharpe and Arnold 1998, Courtenay 2000). A survey of men in England found that of the sample, 3.6% would access support for weight loss from a GP, whereas 58.4% would access support from a family member or friend (Ndebele, 2014). Furthermore, the terms to describe excess weight that doctors use when engaging in conversations with obese patients should be used carefully, because certain terms can be considered demotivational or offensive (Gray et al., 2011). The current study found that women consider health professionals to be a valuable source of support, however, for this to happen and for overweight or obese men to engage in conversations with their doctors about their weight, it may be necessary for doctors to use terminology that are deemed less offensive.

#### 8.4 Findings in relation to The Theory of Planned Behaviour (TPB)

The following section summarises how the findings from the qualitative study with women can be interpreted in relation to the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991).

**Behaviour:** This largely surmounted to a desire for their male partners to lose weight.

**Behavioural intentions:** Women perceived weight to be influenced by diet and exercise behaviours, and thought that through the modification of these, excess weight would be reduced. The behaviour changes that women wanted to see in their partners included but were not limited to: eating more fruit; eating salad; eating less fat; avoiding unhealthy snacking behaviours; avoiding binge eating behaviours; taking more steps per

day; going to the gym together; and walking together more. Women discussed the ways in which they thought their partners wanted to, or had tried to, eat more healthily, be more active and lose weight, and thus attempted to turn behavioural intentions into actions. Women thought that men would change their behaviours predominantly for their health, for their family, for their body image, and for weight loss.

**Attitudes:** Women believed that their own knowledge and nutrition skills were superior to those of their partners. Most women held the attitude that it was their responsibility to provide healthy food options, and to encourage healthy behaviours in their partner.

Many women believed that physical activity and nutrition were important for health. A large proportion of women also believed that their partners were carrying excess weight. It seemed that some women had a negative attitude towards their partner's weight loss efforts; their subsequent actions did not seem to facilitate health behaviours. Women thought that being active with their children was a key part of family life for men and was something that was important to men.

**Subjective norms:** Women considered that their partners would be unwilling to eat foods that opposed traditional gender norms, particularly in the presence of their peers. Infrequently, women reported that their partner had eaten, for example, a salad at home and enjoyed this. The findings suggested that subjective norms surrounding what constituted appropriate behaviours for men, were a barrier for men to decline unhealthy snacks in the work place, or to eat healthy or "feminine" foods in the work place such as salad. It therefore seems that men are unwilling to engage in potentially emasculating eating behaviours outside of the home environment. Women considered that often, men felt uncomfortable or unhappy with their weight or size. Since it is not known what weight or sizes these men were, little can be definitively concluded from this, except that the men discussed by women in this study, who were assumed to have identified as heterosexual, experienced body dissatisfaction. The finding that heterosexual men had

body image concerns opposed the traditional gender norm for men. One way that friends could facilitate a positive change in health behaviours was to be active together, since this was not seen as damaging to masculinity and was not a behaviour outside of social norms for men. Women took, or felt they had been given, responsibility for much of the food-related work for their families. This is associated with social norms and enacting traditional gender roles wherein the woman is the home-maker. Pressures from female partners to engage in health behaviours were seen to conflict with the behaviours men wanted to be seen to be engaging in with their peers or colleagues. To summarise, subjective norms surrounding food intake were largely a barrier to healthier eating among men except when at home, and potentially with the guidance of a female partner. Men were framed as being unwilling to engage in typically emasculating behaviours relating to health care and dieting.

**Perceived behavioural control:** Women play a key role in control of men's diet behaviours more so than their activity behaviours. In their accounts, women dominated most activities related to food within the home and men had little or no control over what foods they were provided at meal times or were available at home. A small few discussed how some men may take control of the snacks available to themselves, and that they found evidence of this secret snacking outside of the home which often went against women's nutrition "rules". The tussle for total control over what men eat appears to cause feelings of frustration for women when men go against their expert advice. Men were thought to approach women for nutrition guidance when attempting to eat more healthily.

## 8.5 Reflection on participant characteristics and study findings

This section will explore the possible limitations and transferability of the study findings, by examining the qualities and characteristics of those who participated, and which “voices” may have been excluded or missed from this piece of research.

A total of 16 women took part in Study 2. Participants were all from one county within the South West of England, they were generally well-educated (9/16 had a University degree or post-graduate degree) and they had agreed to discuss topics surrounding male weight loss with the PhD student. A sample size of 16 was sufficient to reach data saturation, however, it seems unlikely and unrealistic to expect that the views of 16 people would accurately represent the views of all women within the county. It was not the aim of the research produce findings that were broadly generalisable to wider populations; this is not the nature of qualitative research. However, the extent to which findings may relate to other populations could indicate the usefulness of the research: *“The aim of research is to produce information that can be shared and applied beyond the study setting. No study, irrespective of the method used, can provide findings that are universally transferable.”* (Malterud, 2011, p. 485).

The women who participated in the study were those who were willing to engage in conversations with a female PhD student (KH) as a part of a research study, and who were also willing to discuss topics surrounding a male partner or family member’s weight with the researcher. As a result of the inclusion criteria, and self-selection bias, there are many “voices” that will have not been included in this research and thus the findings have some limitations. To be eligible to participate in the interviews, the male family member that was to be discussed at the interview must have previously engaged in weight loss behaviours, currently engaging in weight loss behaviours, or considering engaging in weight loss behaviours. These criteria meant that the female relatives of men who were perhaps overweight or obese, but had no experience of weight loss or were not considering weight loss, were not captured. Due to self-selection bias and the

opt-in nature of the study, the voices of those women who did have a male relative meeting the weight loss behaviour criteria, but who did not want to participate in the interviews, would also have been missed. A further consideration is that only women who were able to meet with the PhD student (KH) in a public space were involved in the research study. Should the interviews have been conducted in the participants' homes, those who were facing difficulties; physical, practical or otherwise; of meeting with the PhD student in a public location, could have participated in the study and their "voices" would have been included in the data analysis. It should be noted that on two occasions it did appear that participants were experiencing mobility difficulties.

Women were eligible for inclusion regardless of their BMI or health status however there were no health or BMI criteria regarding the male relative they were wishing to discuss at the interview. It could be possible that their male relatives had an illness or condition that the study participants did not wish to discuss, did not think was relevant to include, or were unaware of. It seemed that within most families, women were responsible for family nutrition. Considering further the topic of who had the ability to engage in household nutrition work, it was not reported or explored as to why many female partners were engaging in the majority of the household nutrition work, or whether their partner was dependent on them due to an illness or disability. Further to the discussion about abilities to engage in the research project, it should be considered that in households wherein the female partner might have a physical disability, that the food-related tasks for that family might be distributed differently compared to other families. The findings of this qualitative study potentially have reduced transferability to other populations due to the homogeneity of the sample included. Further research within other contexts, communities and populations would need to be carried out in order to assess and explore the transferability of the study findings.

## 8.6 Conclusions

This novel piece of research sought to explore women's perspectives surrounding male dietary, physical activity and weight loss behaviours and can report three key findings: firstly that men in relationships with women can be highly sensitive about body image which is sometimes exploited by women; secondly that men have little or no control over food choices within the home; and thirdly that through good intentions it appears that romantic relationships can become bitter when the female partner pushes or monitors health behaviours very closely. It was not discussed how women thought that their partner perceived their own body, because this was outside of the research aim, however, this could have provided information regarding overall perceptions of body image within the couple or family environment and an insight into how this influenced romantic relationships. Women considered that doctors were a source of guidance that men should seek-out in order to address their excess weight, however their anecdotes focused on the negative experiences their partners had with their doctors. Engaging in physical activity with their children was an important part of fatherhood which could be utilised to encourage weight loss.

These findings support the research conducted with men, presented in Chapter 5 and discussed in Chapter 6, which found that men enjoy being active with their families and perceive a lack of control over household food. This second qualitative study contributes the "other half" of the story and is consistent with men's accounts. To the best of our knowledge, this study is novel as it is the first study to explore women's perceptions of how social influences impact men's weight.

## **Chapter 9:**

### **General discussion of Study 1 and Study 2 findings**

#### 9.1 Introduction

This chapter summarises the key findings of both qualitative studies in relation to each other. Study 1 explored men's perceptions of diet, exercise, overweight, obesity and weight loss groups. Study 2 explored women's perceptions of social influences on men's weight loss and weight loss behaviours, specifically in relation to a partner or male family member. The first part of this chapter is structured such that different types of social relationships and social contacts are discussed in turn. This segment starts with a discussion about the influence of partners and children which were two of the most influential social relationships. This segment concludes with a discussion on the influence that parents and personal trainers have, as these were discussed the least throughout the interviews. It draws associations between what the empirical research studies discovered, and other existing literature on this topic. Following this discussion, answers are provided for each of the research questions that were posed at the beginning of the thesis (Chapter 3, page 132). This is followed by a diagram which unites the key themes surrounding social influences from both literature reviews and both empirical research studies. The diagram, designed by the PhD student (KH), concisely summarises on one page the key social contacts and relationships that were discovered, analysed and explored in this PhD research, and the potential uses of this diagram are hypothesised. The penultimate section of this chapter explores, through the use of a diagram devised by the PhD student (KH), how the key findings of both qualitative studies relate to the TPB and the possible uses of this diagram. The chapter concludes



with a final reflection on the PhD process, and the limitations of the research studies are acknowledged and discussed.

## 9.2 Partner influences

The social influence discussed the most was that of a female partner. It is believed that the majority of participants were heterosexual although two men discussed the influence that a male partner had on their health behaviours. Throughout the interviews with male and female participants, many participants described the strong hold that women had over the home food environment. Among the male participants who had a female partner, many discussed how their partner would do much of the cooking, however a small number of men and women described sharing cooking responsibilities with a partner. It was rare that men did all of the cooking within the home, except when they lived alone. The themes surrounding control were much stronger in the interviews with the women than with men. Women, particularly those who also seemed to be mothers of younger children, described how they felt responsible for most food-work within the home, as well as deciding what food should be bought, and then purchasing this. A similar finding, relating to control of eating behaviours, found that men's perceptions about their partners influence, controlling or supportive, was related to perceived relationship quality (Carbonneau and Milyavskaya, 2017). A perceived controlling influence by women on men's eating behaviours was associated with lower relationship quality, and a more autonomy-supportive approach regarding eating behaviours was associated with higher quality relationships (Carbonneau and Milyavskaya, 2017). As much as women constructed their identity through being the care provider within the family and the dominant figurehead within the kitchen, men constructed their identity through being cared for by women. Many of the female participants often perceived

their way of thinking to be the correct way; regarding nutritional rules, parenting, and weight loss. Men did not appear to challenge the dominant position and power that women had within the household and kitchen. The men who took part in this study appeared to reject only a few aspects of women's control, demonstrated through snacking which was sometimes done secretly. Other research has compared this relationship between a man and a woman regarding food to be like that of a woman and her child (Thompson and Holt, 2004); women enact care by attempting to limit the consumption of unhealthy foods and promoting the consumption of healthy foods.

Two men described the influence that a male partner had on their eating and exercise behaviours; they described reading food labels and making food choices with their partners. In this way, these men seemed to have greater control over the foods they ate compared to the other men in relationships with women. Within this sample, women seemed to be more autonomous in their decisions about what would be eaten in the home and men were the passive receivers of food. There were many instances where female participants talked about their attempts to facilitate healthier eating behaviours in their partners and children, however, participants of both studies discussed shared behaviours between couples that were unhealthy. Similar findings were also seen in a qualitative study which explored people's experiences of using Tier 2 and Tier 3 weight management programmes; family and friends played an important role in successful weight loss; however they have the potential to unintentionally "*sabotage*" efforts by providing "*sweet gifts*" and "*naughty food*" (Public Health England, 2017, p. 30).

While not unanimous across interviews, it did seem that among the men living with a female partner, men and women performed traditional gender roles. Similarly, a study in the US found that approximately 36% of men were involved in food shopping, 27% of men were involved in food preparation and 23% of men were involved in meal planning (Harnack et al., 1998). There were some instances where men were involved

with food shopping or cooking which demonstrates a shift towards a more equal division of labour and an egalitarian household. It is also possible that women empowered men to participate in these activities. It has been noted that *“Gender related social change [...] has been high on the policy agenda and a topic of widespread academic interest among social scientists since the mid-1980s”* (Annandale and Hunt, 2000, p. 3). The Market Research Society explains that the issues surrounding gender and gender identity are complex; people may identify as *“polygender, intergender, nongender, agender or transsexual. In short, gender identity may not be static and it can be complex”* (Market Research Society, 2016, p. 2). Furthermore, *“A gendered approach to men’s health focuses, not on these specific behaviours and disease endpoints, but on the influences on, and the determinants of, these behaviours – the social constructions which influence individual men’s behavioural choices and thus affect their health behaviours and outcomes”* (Lee and Owens, 2002, p. 241). These extracts highlight the importance of fully appreciating the spectrum of gender, the role that gender plays in social science and how an understanding of genders can be important in how decisions relating to health and health behaviours are made. Despite attempts to move away from the dichotomy of gender, the concept and construction of two traditional gender roles remains prominent, as shown throughout this PhD research.

A small number of female participants described nagging or making unkind comments to their male partners. Women were also more forthcoming with their criticisms of their male partners than men were of their partners. The male participants didn’t describe receiving unkind comments from their female partners, however, they did describe the comments that other people had made about their body size or shape which did seem to have hurt their feelings. Men’s female partners were often in a position of authority over them regarding their health, which encompassed their physical activity and nutrition behaviours. The importance of health in relation to nutrition has resulted in the home-

maker being in a position of power over the family. Additionally, a small number of women seemed to frame their physical fitness as superior to their partners. This could have threatened masculinity for some men since strength and athleticism are ways in which men demonstrate masculinity (Verdonk, Seesing and de Rijk, 2010).

For some men, it seemed that their female partners acted as a confidant. Women, however, were often more explicit about the shyness or sensitivity that they saw in their male partners. Women thought that they would be the person men would talk to, or seek support from, regarding diet, nutrition or weight loss, which largely concurred with men's discussions. This is concurrent with other literature that suggests men only discuss their health with their partner: "*I share my information, this kind of stuff with my wife only*" (Snipes et al., 2015, p. 10). Women were perceived to be more knowledgeable about nutrition, by themselves and by men. One study measured the attitudes among men and women who were engaging in weight loss behaviours (Nothwehr, Snetselaar and Wu, 2006). This study found a significant difference in perceived diet skills between men and women ( $p < 0.0001$ ) and that men perceived they received more social support for diet than women did ( $p < 0.0001$ ) (Nothwehr, Snetselaar and Wu, 2006). This research undertaken as a part of this PhD found that men usually received more support from women to eat more healthily than to be more physically active.

### 9.3 Child influences

The influence that children had on men's health behaviours was discussed by many participants. There were reports by men and women, that men enjoyed being active with their children and also their grandchildren. Families primarily discussed having fun with their children in a physical activity context rather than a nutritional context. In some

instances, it seemed that men prioritised time with their family over time alone. It seemed that families were active together, such as walking or playing at the park, or fathers were active on their own with the child. Children were seen by some participants as disruptive to hobbies or activities that men had engaged in before becoming a parent. Men discussed the ways in which they were active when they were younger and before they had children. Previous research has found that fatherhood had a profound impact on men's physical activity behaviours: fathers of young children aged 6 years or less, compared to men without children, spent less time in moderate to vigorous physical activity (Pot and Keizer, 2016). Having children was a trigger for men and women to eat more healthily, for their own well-being but also as a role model for their child. Men seemed empowered to take an active role in the lives of their children and enjoyed doing this; they educated their children about healthy eating but also restricted their child's access to sweets and unhealthy foods. Although not specifically identified as modelling health behaviour, it appeared that by being active with their children, and addressing issues with health or excess weight, men were modelling the behaviours they wanted their children to copy or observe. Although the men in this study were keen to demonstrate healthy eating for their children, previous research found almost no significant differences in eating behaviours among parents versus non-parents (Laroche et al., 2013). The longitudinal study found no significant differences between dietary changes among those who became parents and those who did not over a seven year period, except that non-parents reduced their saturated fat intake more than parents (Laroche et al., 2013). Addressing men's roles as fathers is a potential avenue for improving their health but also the health of their children: "*Understanding how fathers make decisions, as well as their social networks and diverse experiences over their lifetimes, is essential for cultivating a more engaged, health conscious style of fathering that will, in turn, positively affect their children's health*" (Marsiglio, 2009, p. 23).

Children were also seen as a disruption to meal times, and when there was a child to feed, healthy meals were eaten by all. This was mostly discussed among the interviews with women who had younger children, and this is perhaps because women felt they had a duty of care to their partners and to their children; men framed their duty of care in terms of education and active play. The wider literature suggests that men spend a higher proportion of their time with their children in active play and passive care, compared to mothers who spend proportionately more of their time in physical tasks and providing care to children (Craig, 2002). It has been noted that childcare may offer more intrinsic rewards to fathers than other housework such as cooking or cleaning, which may explain why men spend more time in active play than other housework (Ishii-Kuntz and Coltrane, 1992). Mothers have framed themselves as having maternal expertise and being altruistic, and framed fathers as complacent and selfish (Tanner, Petersen and Fraser, 2014). Other literature has found that men perceive themselves to be less skilled to navigate family meal-times and look to their partners for advice and help (Walsh et al., 2017). These findings help to explain the gendered division of parenting tasks. A focus group study among middle-aged men in Australia found that men saw walking as an opportunity to spend time with their wife and children, and that men would want to engage in physical activity that was fun and an opportunity to spend time with their family (Burton, Walsh and Brown, 2008). It has been noted that hegemonic models of masculinity frame men as material providers for their family, which places the relationships with their partners and children at a lower priority (Lee and Owens, 2002). Furthermore, women spend more time engaged in child care than fathers do, regardless of other demographic variables such as full-time work (Craig, 2006). In the context of physical activity, children were a source of motivation and enjoyment for the men in the current study: men who were grandparents, teachers and

sports coaches in their spare time spent time with younger people and they talked very positively about these interactions.

#### 9.4 Doctor influences

One of the key findings of this research was the types of interactions men actually had, or anticipated having, with doctors. The influence of a doctor featured frequently during the interviews with men and women. Men described having positive intentions about seeking doctor advice for weight loss which contradicted women's accounts of men's actual behaviours regarding doctor advice for weight loss. Women generally thought that the doctor would be a useful point of contact for men who wanted to lose weight. Women described the negative experiences that men had with their doctors, who seemed to handle weight issues poorly and would offend or fail to motivate men. Among several men, some of whom had a partner and some of whom did not, it seemed that their intentions were to discuss diet or weight loss with a doctor, but it seemed that this intention rarely transferred into action; actual behaviour was to instead talk to a partner or spouse about this topic and not a doctor. One man, who had a female partner, seemed to blame his doctor for previously providing insufficient advice about how to lose weight when instructed to do so. However it was not clear at what stage in his life this was and whether it was before or after living with his partner. It seemed that another man, who also had a female partner, would talk to his doctor about his weight, but almost as a last resort. It has been found that men would have liked to receive weight loss support from doctors but felt the support that was available or was provided was not sufficient to motivate weight loss (Aoun et al., 2002).

Men are more likely to visit their doctor as their age increases, when they are married, and if they have health conditions (Schlichthorst et al., 2016). Men who rated their

health as excellent or very good were not as likely to visit their doctor (Schlichthorst et al., 2016). In the same way that men are known to misperceive their weight status and believe they are a healthy weight when they are overweight or obese, (Kuchler and Variyam, 2003; Baker, 2018), it is also possible that men may misperceive their health status when compared to actual health status (Gregory et al., 2008). Women more accurately perceive their weight status than men; 32% of overweight men and 7% of obese men thought they were the “right” weight compared to 10% of overweight women and 3.7% of obese women who thought they were the “right” weight (Wardle and Johnson, 2002). Additionally, more overweight men than overweight women were “not bothered” about engaging in weight loss behaviours (25.6% men vs 12.6 % women) (Wardle and Johnson, 2002). Finally, among the men who were classified as overweight, 44% had attempted weight control in the past year; and only 3.9% of the sample who were classified as overweight had sought professional advice for weight management (Wardle and Johnson, 2002). These findings show that men may not perceive their bodies to be overweight or obese and therefore at risk of ill-health and do not seek medical advice. It has been found that: *“Social or personal attitudes to weight may influence an individual’s willingness to have his or her weight assessed. People who are overweight or obese often have a history of dealing with a frustrating and visible problem and may have experienced discrimination.”* (National Health and Medical Research Council, 2013, p. 23). Therefore, the self-selection of participants to take part in this research study about weight and obesity, may also have featured those who would be more willing to talk about weight with their doctor or may have been more receptive to their doctor discussing their weight with them.

While men and women may see a role for a doctor or health professional to be involved in weight management, weight bias among health professionals exists such that some are “anti-fat” and “pro-thin” (Schwartz et al., 2003). Research has found that terms used



by health professionals may also be important; medical terms such as “obese” were considered potentially suitable for use among men who may consider a more “direct approach” (Gray et al., 2011). This is contrary to the finding of Study 2 where it was reported the term “obese” deeply offended one woman’s husband. Additional research has found that the term “unhealthy weight” was the least offensive term to describe excess weight and was considered motivational; the terms “obese”, “morbidly obese” and “fat” were perceived as stigmatising, blaming and were the least desirable terms that patients wished for health professionals to use when describing their weight (Puhl, Peterson and Luedicke, 2013).

A barrier for doctors to discuss obesity concerns with patients is their perceived limited training in weight-loss counselling (Alexander et al., 2007). Similarly, a qualitative study with GPs in the UK found that they felt discussions about obesity with their patients were difficult, that treating obesity was not within the professional domain of GPs, and that they felt ill equipped to address such issues: *“It [obesity] is a very current major problem and yet as primary care providers we are very ineffective and rather powerless”* (Epstein and Ogden, 2005, p. 752). This study also found that GPs perceived that patients were responsible for their own weight, but that they felt patients placed responsibility for the treatment and management of their obesity with GPs (Epstein and Ogden, 2005). An intervention designed to train GPs to manage obesity found that patients in the intervention group, receiving support from obesity-trained GPs, were on average 1 kg heavier than those in the control group (Moore et al., 2003). Findings from an observational study in Scotland found that GPs brought up weight-related talk with 25% of their overweight or obese patients, but that many of these patients blocked the conversation (Laidlaw et al., 2015). Despite the low percentage of weight loss conversations occurring between a doctor and their overweight patient, it

was found that overweight patients who did engaging in weight loss behaviours found that GP face-to-face support was effective (van Beurden et al., 2018).

A further issue surrounding the treatment of overweight and obesity by the NHS is that currently, a large proportion of NHS staff are themselves overweight or obese, as highlighted by both the Boorman report and the “Healthy Weight, Healthy Lives: One Year On” project report (Boorman, 2009; Cross-Government Obesity Unit, 2009). It was estimated that among the 1.2 million NHS staff members, approximately 300,000 were classified as obese and 400,000 were classified as overweight (Cross-Government Obesity Unit, 2009). In light of this, a future target for the NHS, discussed in the “Healthy Weight, Healthy Lives: One Year On” report was to *“improve the health and wellbeing of public sector employees, starting with the NHS workforce through bespoke programmes to support front-line staff to achieve and maintain a healthy weight”* (Cross-Government Obesity Unit, 2009, p. 2).

This section discussed how participants perceived the important role that health care professionals had in the identification and management of obesity, and how poorly equipped health care professionals felt to deal with this public health crisis. This section highlighted the important role and responsibility health care providers believe their patients place on them when addressing weight concerns. Furthermore, this section demonstrates the need for effective training among health professionals to help overweight patients and NHS staff to lose weight.

## 9.5 Friend influences

This section encompassed the influences of men’s friends and colleagues on their public performances of gender. The influences of friends were widely discussed by both men and women. Among the interviews with both men and women, friends were primarily

the people that men exercised or played sport with. It seemed that making friends took place in a physical activity context, activities discussed included squash, running and kick-boxing. A small number of men talked about going out and drinking alcohol with friends. Women described a shyness or embarrassment they saw in their partners regarding being active with people who were not already their friends. A small number of women thought that their male partners may enjoy being active with a friend instead of themselves. Whether this finding is transferable into different contexts could depend on whether there were children within the family or what age the children are because being active with their child seemed to be a key focus in men's lives.

For some men their colleagues were also their friends, for some they seemed to be acquaintances. Unusually there was a group of men at a workplace who had decided to devise a work-place weight loss group to encourage their colleague to lose the weight that he was required to for health reasons. This was one way for men to compete with each other to see who could lose the most weight; competitiveness being a key component of masculinity (Courtenay, 2000). Women discussed men's colleagues as being an unhealthy influence on their partners' dietary behaviours. Women thought that men were unlikely to decline an invitation to eat unhealthy foods with their colleagues at lunchtime however, the majority of women did not show frustration at partners for this behaviour. Feelings of trust were compromised regarding whether a partner disclosed this breach to them or not. The wider literature shows that men feel pressure to conform to unhealthy eating habits in the company of their peers, such as drinking alcohol and risk-taking behaviour (Verdonk, Seesing and de Rijk, 2010; Roos, Prättälä and Koski, 2001; Newcombe et al., 2012). A study among young males (18-25 years) found that peers were a barrier to both physical activity and healthy eating due to perceived societal expectations and the perceived need to conform to, and not deviate from, masculine ideals and stereotypes, when in company of their friends and peers

(Ashton et al., 2015). A study among fathers found that an important component in their relationships with other men involved “having a laugh”, which involved activities such as shared consumption of alcohol or food, activities within a pub, and physical activities with other men (Williams, 2009).

Men who took part in Study 1 seemed reluctant to seek support for dieting or weight loss from their friends; this was something they would “never do”. It was, however, acceptable to discuss these topics with their friends because they considered them interesting topics for general discussion. The notion of avoiding support-seeking from friends was confirmed by women’s accounts of being the person that they thought men would talk to for any dietary or weight loss guidance. This section encapsulated the negative influences that women perceived friends and colleagues to have on men’s health behaviours, and the positive influence that on occasions their friends actually had. The wider literature focuses on the negative health impact that socialising with their friends can have upon men and how specific behaviours are enacted or avoided to conserve masculinity.

## 9.6 Parent influences

Parent influences were discussed throughout Study 1 more so than Study 2. The men who discussed their parents often did so when attributing blame, or providing criticism, about an aspect of their own upbringing which had, or had the potential to have, negatively influenced their weight status. Some of the male participants reflected on the relationship that they had with parents, and women discussed how they perceived their partner’s eating behaviours to have been influenced by his parents. Topics discussed included a perception of being over-fed as a child by parents, and the instilling of messages like “clear your plate” at meal times by parents. The development of

unhealthy habits in childhood and adolescent are amplified by the probability for obesity to track into adulthood (Suchindran et al., 2010). The negative influence of parents on eating behaviours and a need to “feed” was discussed briefly in Study 1 and was also reported in other qualitative research with men; the issue of feeding was typically associated with mothers (Maclean et al., 2014; Mallyon et al., 2010).

## 9.7 Personal trainers

Additional social contacts that were discussed by men included personal trainers and health coaches. These were people that were not health-care professionals like a doctor or dietitian, and were people that men engaged with in a professional capacity. Personal trainers were regarded by men as a source of expert advice on the topic of physiology, biology, and would also be able to provide adequate dietary advice. Personal trainers embodied masculinity through their association with strength and exercise. However, personal trainers were seen differently to an “Adonis” or very muscular man; overly muscular men were not seen as a source of motivation by Study 1 participants and were instead seen more as a source of demotivation; men could not relate to them. Personal trainers were perceived to be more approachable, relatable and they were also a source of advice that would not damage their masculinity. Feelings of relatedness and an avoidance of being emasculated by other men were key factors in other men’s weight loss success and positive experiences throughout the FFIT research studies (Gray et al., 2013; Hunt et al., 2014; Bunn et al., 2016).

Personal trainers were one of the least discussed social influences by men, and they were discussed less so by women. One woman discussed that her husband was a personal trainer, and during her interview she discussed how her partner might seek the advice of another personal trainer, but this should be a personal trainer that he respected

and looked up to. This source of support for men seemed more acceptable than a doctor, and more keenly accessed. The personal trainer embodies aspects of masculinity that a doctor might not. A study among men found that they endorsed a weight loss programme that had a focus on sport and gym-use rather than one that had a medical focus (Wolfe and Smith, 2002). A study involving personal trainers and financial incentive improved attendance to a weight loss intervention (Jeffery et al., 1998). Affordability of personal trainers, however, may be a barrier to their uptake for weight loss support (Thomas et al., 2008). This section discussed personal trainers as an acceptable and desirable source of weight loss guidance for men, however, for this to be more readily accessed, issues relating to cost may need to be addressed. While it is possible to receive exercise on prescription, this process currently requires a referral from a health professional, and it is possible that this preliminary step could deter men from engaging in this scheme.

## 9.8 Revisiting the research questions and future work - Key findings from Study 1 and Study 2

### 9.8.1 Revisiting the research questions

Within this section of the final discussion chapter, the original research questions are again posed (the text of which has been bolded), and brief answers to the research questions, based on the findings of this thesis, are provided underneath each question.

The five questions this PhD research sought to answer were:

- i) **Which social contacts and social relationships do men discuss in the context of their dietary, physical activity and weight loss behaviours?**

Male participants discussed a broad range of social relationships and social contacts that men had. The key social contacts and relationships that men discussed in the context of their dietary, physical activity and weight loss behaviours were; partners, children, friends, colleagues, doctors, parents and personal trainers.

**ii) Which social contacts and social relationships do men perceive to influence their dietary, physical activity and weight loss behaviours?**

Male participants discussed the influences of: their partners (who were mostly female but in two instances partners were male); their children and in particular their children who were still living at home; their parents; their doctors; their colleagues; and their friends.

**iii) How do the social contacts and social relationships that men have influence their dietary, physical activity and weight loss behaviours?**

Men seem to present themselves differently depending on the social context. Private presentation of self can allow men to be more “vulnerable”: to ask diet questions, to be body conscious, and to engage in activities that men identify as enhancing their status as a good dad, and engage in activities that might otherwise be deemed as emasculating. Public presentation of self does not compromise on food intake for health or body image, and engages in risk-taking or unhealthy behaviours. Men’s behaviours are also influenced by social change in their lives; having a partner and becoming a father seem to be two important life events that have a resultant impact on health behaviours.

Partners could be a source of support or sabotage for men’s intended and actual health behaviours. It seemed that the influence of women was perceived or reported to be felt

most strongly surrounding men's food behaviours. Children played a role in the types of physical activity men did. Some men coached sports clubs for children, but fathers of younger children tended to engage in lower-intensity physical activity with their children or family-unit. This time was considered an important opportunity to bond with their child, to be a healthy role model and be a "good father". Men may place responsibility for their weight with a doctor or health professional, and this responsibility for their care was seen particularly among men who were divorced or single.

Male body dissatisfaction was discussed in relation to how clothes fit but also in relation to the comments that other people made about their bodies. In two instances men discussed how the comment of a family member or friend had been the cue for weight loss; this finding was among a small sample of men however it was discussed by one of the men who had a husband and by one of the men who had a wife. This highlighted that body image dissatisfaction was potentially not limited by sexual orientation.

**iv) Which social contacts and social relationships do women discuss in relation to men's dietary, physical activity and weight loss behaviours?**

Throughout the interviews with women (Study 2), the social contacts and social relationships that women discussed included: female partners such as themselves; parents; their children; doctors; personal trainers; and men's friends and colleagues.

**v) How do women perceive social contacts and social relationships to influence men's dietary, physical activity and weight loss behaviours?**



On the whole, men and women framed the influence that social contacts and social relationships had on dietary, physical activity and weight loss behaviours in very similar ways. One key difference was regarding the uptake of medical support. Whereas men discussed the uptake of doctor or nurse support or advice on the whole quite favourably, women were more forthcoming with their anecdotes of how a doctor or other health professional had demotivated their partner with regards to weight loss. Some men thought that medical support and guidance for weight loss was absent, not available or not sufficient to motivate behaviour change. Several women considered that doctors could, or should, be a source of weight loss guidance for men.

### 9.8.2 Future work

The following diagram (Figure 9) amalgamates the findings of the two literature reviews and two qualitative research studies into one diagram. While there are many possible uses for Figure 9, the findings on which this figure is based are from a small, homogenous sample of men and women in one county within the South West of England and uses are therefore restricted. A key to the different coloured and shaped text boxes is provided below in Figure 10. At the centre of the diagram is a hexagon which represents men. It was found that men are predominantly influenced by their social relationships with their partners, children, friends and parents, and through their interactions with their doctors and other professionals such as personal trainers. These social influences surround the central hexagon, they are also hexagons, and have been coloured each a different shade of blue. This colour corresponds with the next layer of blue rectangles of the same colour. The way in which these people influenced men is considered in the third layer of text boxes. The outer most layer of text boxes, colour coded by which element of the PhD they correspond to (Literature Review 1, Literature

Review 2, Study 1, Study 2) provide an insight into how these social experiences and relationships were discovered through this PhD and how findings are intertwined across these four projects.

This diagram has several potential uses. Firstly, it could provide the basis for a future qualitative study, such that a topic guide or interview schedule might be designed to further probe these areas of interest and importance to weight-related health research. A future qualitative research study could be conducted to confirm whether the findings of these studies are also found among wider or and different samples of men and women. Secondly, this diagram could be used in a primary care setting or by Tier 1 or 2 weight management services in order to facilitate the delivery of a tailored weight-management service and initiatives that fully acknowledge the types of social influences constraining or encouraging diet, physical activity and weight loss behaviours. The diagram could be used by a clinical commissioning group, for example, to contribute towards the evidence for the use of family-based activities or father-child based activities. Thirdly, this diagram could be used in a quantitative research setting; the text in the coloured rectangle boxes could be adapted into a questionnaire which could be tested and validated, as a means to quantify the strength of social influence experienced by men. Alternatively, the content of the diagram could be used as a checklist by researchers or weight management services; the blue rectangle boxes could be adapted and used as checklist of considerations in the development of a weight loss intervention for men which may or may not involve their partners and their families.

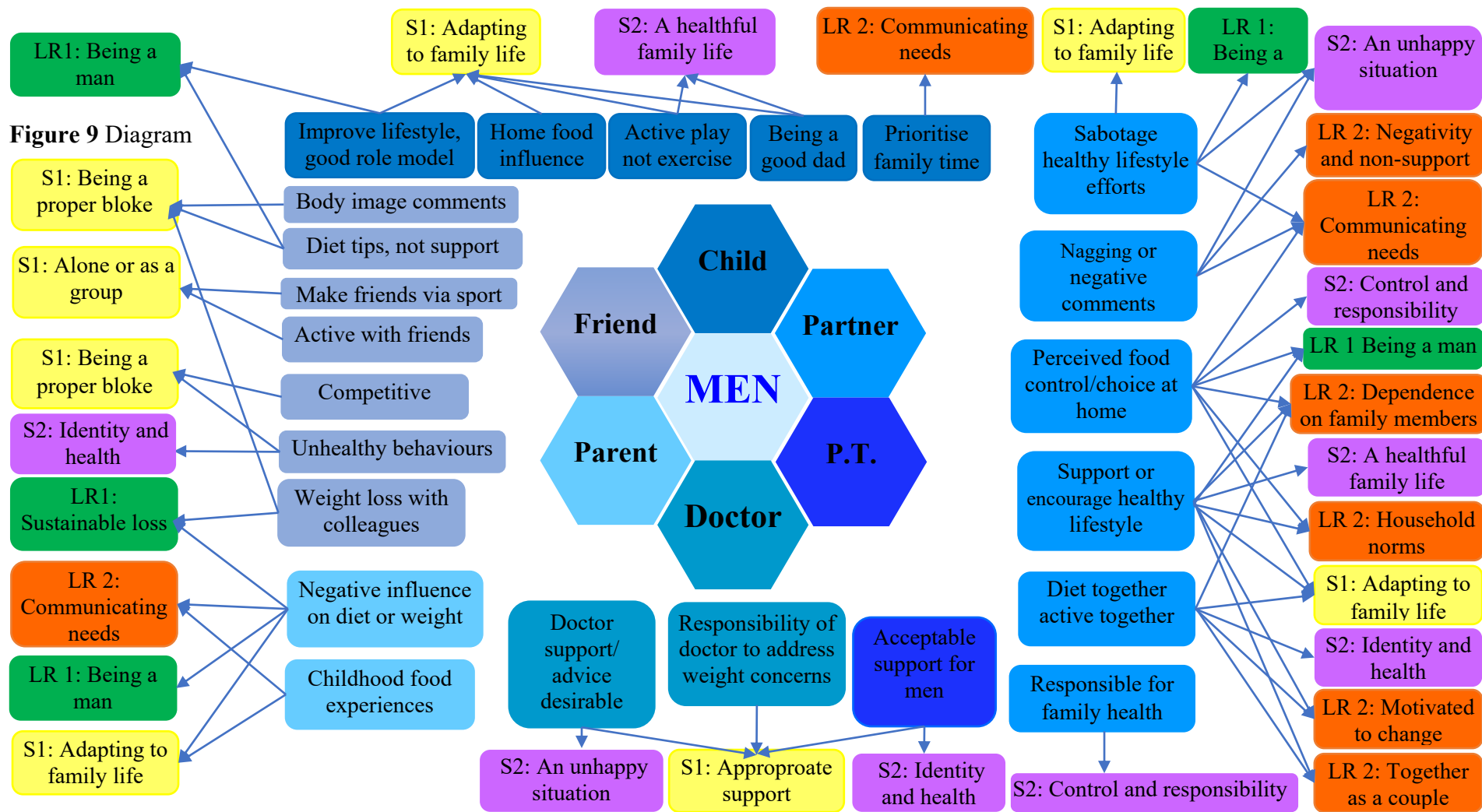


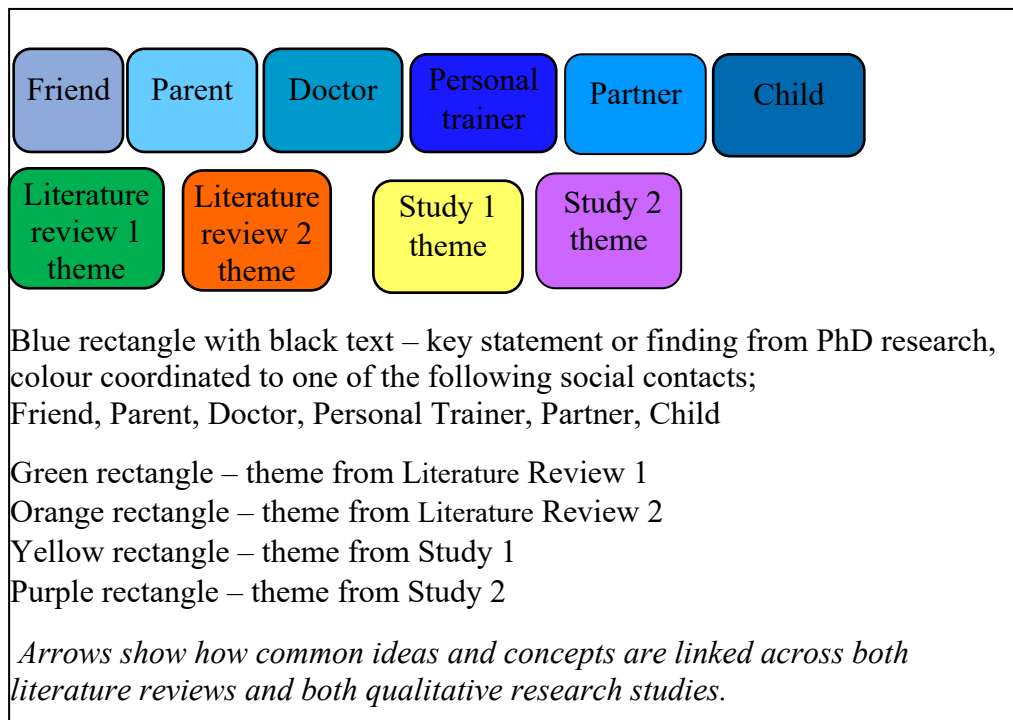
Figure 9 Diagram

of how PhD research projects share common

themes

**Table 27** Abbreviated theme names used in Figure 9

Abbreviated theme name	Full theme name
LR2 Household norms	LR2 Household norms and how these changed
LR2 Negativity and non-support	–LR2 Strategies for managing negativity and non-support
LR2 Communicating needs	LR2 Communicating needs and protecting family relationships
LR2 Motivated to change	Motivated to change and to stick to it
S1 – Alone or as a group	S1 – Going it alone or as part of a group
S1 – Alone or as a group	S1 – Going it alone or as part of a group
S1 – Being a proper bloke	S1 – what “being a proper bloke” entails
S1 – Appropriate support	S1 – Appropriate sources of support for men
S2 - Control and responsibility	S2 - Female control and responsibility
S2 – Identity and health	S2 – Navigating identity and health in society

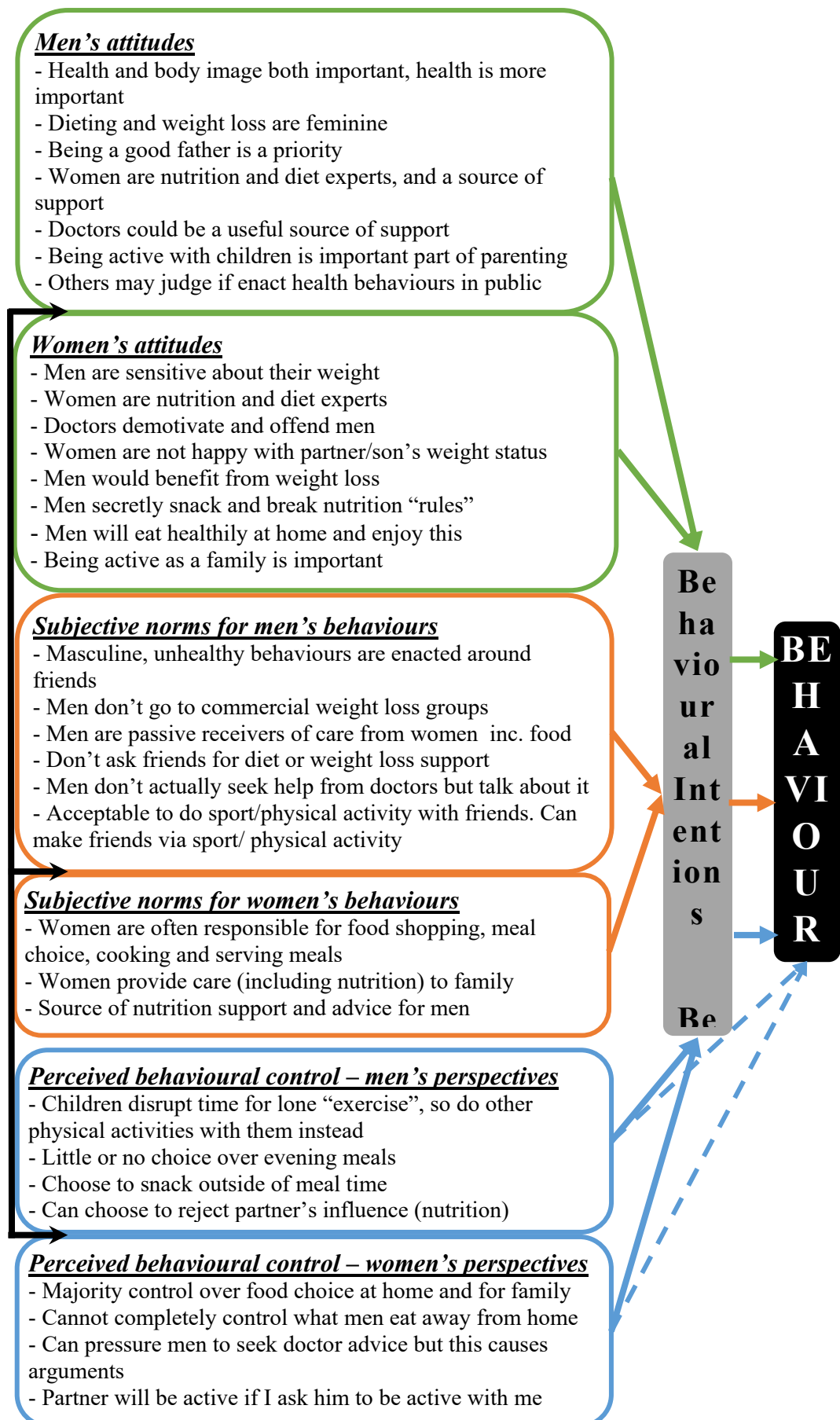


**Figure 10** Key to Figure 9

It should be noted that the findings from this PhD, and therefore the content of the above diagram, may not apply to all men. This is because marital status, sexual orientation and social influences do vary across different populations and neither this diagram nor this doctoral thesis successfully captured all of that information. However, this diagram demonstrates that there are fundamental similarities between the existing literature and this PhD research regarding how men may experience, and are influenced by, their social relationships and social contacts.

### 9.9 Study findings in relation to the Theory of Planned Behaviour

The following Figure (Figure 11) presents the key findings from Study 1 and Study 2 in relation to attitudes and the issues surrounding subjective norms and perceived behavioural control – the core constructs of TPB (Ajzen, 1991). The purpose of the diagram is to summarise how the data fits into the TPB, and therefore, this could be used as a template by researchers or clinical commissioning groups for future male weight loss interventions or services that are informed by health behaviour theory. As discussed previously, because the findings of this research are based on a small and fairly homogenous sample of men and women from one county in the South West of England, the transferability of these findings into another research context could be limited by these study characteristics. The research is not without use, and the findings are of value; while the transferability may be limited this does not mean that the diagram cannot be used in other contexts. To explore the transferability of the study findings, further research is required. The testing of this model in different populations and cultures would provide greater insights into the social factors surrounding male weight loss behaviours that exist among and between different societies.



**Figure 11** Key findings from Study 1 and 2 in relation to attitudes, subjective norms and perceived behaviour control of the TBP (Ajzen, 1991)

## 9.10 Final reflections on the research process, findings and limitations.

The literature reviews undertaken for this doctoral thesis have provided many opportunities to reflect on literature review design and analysis processes. Both reviews did not yield many research articles for inclusion from the citations retrieved following database searching; additional research articles for inclusion were found by scouring the reference lists of the small number of included articles. This highlights the need for a greater understanding of the literature review search term development process and database searching. While on-site training was undertaken at the University regarding database searching for literature reviews it may have been the case that this was not adequate for the projects that were to be embarked upon and also that further development of the search terms would have resulted in improved citation retrieval.

The limitations of the qualitative studies designed and implemented for this PhD research mostly relate to the collection of data and the sampling strategy used. The recruitment of participants was dependent upon their willingness to engage with the research project and contact the author. Participants self-selected and therefore only the experiences, perceptions and attitudes of these small samples were included in the analysis process. These samples represent only a small population of men and women; predominantly white middle adults most of whom most were living in the least deprived areas of the county. The men included in Study 1 reported that they were healthy and were weight-stable. As previously discussed, a large limitation of this research is that health data was self-reported, and the findings generated were based upon this self-reported information. It is estimated that 1.1 million people have undiagnosed Type 2 diabetes and 5 million people have undiagnosed hypertension (Diabetes UK, 2016; British Heart Foundation, 2019). These were both a part of the exclusion criteria since it was not the purpose of the research to explore how health could be an influence upon



physical activity, dietary and weight management behaviours. However, it is possible that some of this sample may have had undiagnosed health issues. Therefore, although participants were excluded if they reported having health conditions, their exclusion was dependent upon their disclosure of health information to the PhD student (KH). If participants had existing health conditions that they did not know about, or declined to disclose knowledge of pre-existing health conditions to the PhD student (KH) and opted-in to the study, this may have had a resultant impact upon study findings that were generated.

The study results could have been improved if BMI had been objectively measured rather than self-reported, since this would have improved the accuracy of the data collected. However, due to the nature of interview location and research project, this was not considered appropriate. There are also many limitations to the SES questionnaire that was administered to participants. If the questionnaire had offered a wider variety of options for gender and marital status, and included questions regarding sexual orientation, it would have resulted in fewer assumptions about the characteristics of the participants. Assumed to be a fairly homogenous sample of mostly heterosexual men and women, they could indeed have been more heterogeneous than assumed.

The interview schedule for both qualitative research studies included questions about Type 2 diabetes. During the data analysis process, codes relating to knowledge or perceptions of Type 2 diabetes were not generated as this did not relate to the overarching research question of the research degree. However, the inclusion of Type 2 diabetes as a line of questioning should be considered in terms of participant responses. During the interviews, participants were asked about what their understanding of Type 2 diabetes was, whether it could be cured, the impact of diabetes on health and how Type 2 diabetes could be associated with lifestyle. On a small number of occasions, participants were unsure and looked to the researcher for answers. It was explained, at

the end of the interview, that if they had questions about Type 2 diabetes they should explore the NHS choices website as per the participant information sheet guidance. In hindsight, by asking participants about Type 2 diabetes and the link to lifestyle, this could have alarmed participants who may have themselves been at risk of Type 2 diabetes due to excess weight, or who may have had diagnosed or undiagnosed Type 2 diabetes. Since obesity and excess weight are risk factors for Type 2 diabetes (Chan et al., 1994), and male participants were sought who were overweight or obese, the risk of Type 2 diabetes within this sample may have been elevated. This could have therefore influenced in some way their responses regarding Type 2 diabetes.

Owing to the nature of qualitative research and following on from a previous point about the researcher's reliance upon participants to disclose information where appropriate, there was an assumption made when undertaking interviews that the interviewee was being open and honest with the interviewer about their experiences. Since this research is largely based on subjective data, the accuracy of responses by participants must be considered as an unknown. It is possible they believed they were recounting experiences accurately, and it is possible they had taken a conscious decision to edit the story they told the PhD student. Therefore, this is another factor that must also be acknowledged when interpreting the findings of this thesis.

Greater insights into the nature of social influences would have been uncovered if interviews with the men's partners, both individually or as a couple, had been undertaken. However, both research studies do provide rich accounts and context surrounding the social influences upon men's weight loss behaviours. The use of a convenience sample facilitated the recruitment of enough participants such that data coding reached saturation. However, the use of a convenience sample, whereby some, not all, participants knew of each other, meant that they also may share interests. Considering this fact alone, the heterogeneity among the sample is therefore reduced

and may have reduced transferability to other populations. It also transpired that some participants were coupled. The formal recording of this information, or purposeful sampling of coupled and non-coupled men and women could have provided a further insight into how social relationships influence men's weight loss behaviours.

The findings from this research, while novel, are the result of research conducted with a small sample of men and women, most of whom were white, many of whom were assumed to be heterosexual, and all of whom resided in one county in the South West of England. To use the findings of this qualitative research further, a next step would be to confirm whether the findings of this research are also found among other samples of men and women.

## 9.11 Conclusions

While there are many social influences upon men's weight, these research studies found that it was largely family members that influenced men's health behaviours the most. It is important to consider the context in which these findings are situated; the cultural, physical and social factors would vary in other areas of society and in different populations. It is plausible that men are faced with a dilemma: do they either involve their partner in their nutrition and accept that they have limited control over their food intake, but remain sufficiently distanced from the feminine realm of dieting that their masculinity remains intact; or do they engage in nutrition-related tasks which have the potential to be emasculating, attempt to frame their masculinity in other ways, and defend their decision to engage with diet and nutrition to their friends and peers.

This thesis reports novel and important findings that increase the understanding of how social relationships are intertwined with men's health behaviours. The first literature review identified the prominent support role that partners can play when men engage in

weight loss behaviours, and how perceptions about masculinity can deter certain weight loss behaviours. The second literature review synthesised valuable evidence regarding the usefulness of involving family members in weight loss interventions designed to elicit weight loss among men. Both qualitative studies make an original contribution to the literature. The first study among men is novel as it is believed to be the first qualitative study using semi-structured interviews to explore the perceptions of men (BMI 24.0-40.0 kg/m<sup>2</sup>) from the South West of England regarding their dietary, physical activity and weight loss behaviours. To the best of the researcher's knowledge, Study 2 is the first qualitative study to explore women's perceptions surrounding male weight loss and weight-related behaviours. This study has generated new knowledge about social influences on male weight loss behaviours and the findings have many potential uses. Firstly, this preliminary research could be used to inform future research studies that explore further how social relationships influence men's weight within a romantic relationship or family context. Alternatively the findings from these studies could be explored and confirmed among a larger sample of men and women. The findings of the qualitative research studies undertaken for this PhD relate largely to men in relationships with women who, as stated, were assumed to mostly be heterosexual people. It would be important to explore whether these findings have transferability to men of other sexual orientations, in other types of relationships, as well as participants of different demographics, before designing an intervention to target male weight loss. Regarding the future of men's weight loss services, it is strongly recommended that their partners and family are acknowledged in the intervention design process since they are perceived to play a sizable role in men's dietary, physical activity and weight loss behaviours.

## References

- Abrams, P. (1984) 'Evaluating soft findings: some problems of measuring informal care', *Research policy and planning*, 2(2), pp. 1-8.
- Academy of Medical Royal Colleges (2013) 'Measuring up: The medical profession's prescription for the nation's obesity crisis'.
- Ahern, A. L., *et al.* (2011) 'Weight Watchers on prescription: an observational study of weight change among adults referred to Weight Watchers by the NHS', *BMC Public Health*, 14(1), pp. 1-12. doi: 10.1186/1471-2458-14-620.
- Ajzen, I. (1991) 'The theory of planned behavior', *Organizational behavior and human decision processes*, 50(2), pp. 179-211.
- Ajzen, I. (2015) 'The theory of planned behaviour is alive and well, and not ready to retire: a commentary on Sniehotta, Pesseau, and Araújo-Soares', *Health Psychology Review*, 9(2), pp. 131-137.
- Ajzen, I. and Fishbein, M. (1980) *Understanding attitudes and predicting social behavior*. Prentice-Hall.
- Alexander, S. C., *et al.* (2007) 'Physicians' beliefs about discussing obesity: results from focus groups', *American Journal of Health Promotion*, 21(6), pp. 498-500.
- Allan, K., Hoddinott, P. and Avenell, A. (2011) 'A qualitative study comparing commercial and health service weight loss groups, classes and clubs', *Journal of Human Nutrition & Dietetics*, 24(1), pp. 23-31. doi: 10.1111/j.1365-277X.2010.01110.x.
- Allen, J. O., Griffith, D. M. and Gaines, H. C. (2013) "'She looks out for the meals, period": African American men's perceptions of how their wives influence their eating behavior and dietary health', *Health Psychology*, 32(4), pp. 447-55. doi: 10.1037/a0028361.
- Anderson, C. (2010) 'Presenting and evaluating qualitative research', *American journal of pharmaceutical education*, 74(8), pp. 141.
- Annandale, E. and Hunt, K. (2000) *Gender inequalities in health*. Open University Press Buckingham.
- Aoun, S., *et al.* (2002) 'Preventive care in the context of men's health', *Journal of Health Psychology*, 7(3), pp. 243-252.
- Appleton, J. V. (1995) 'Analysing qualitative interview data: addressing issues of validity and reliability', *Journal of advanced nursing*, 22(5), pp. 993-997.
- Arber, S. (1997) 'Comparing inequalities in women's and men's health: Britain in the 1990s', *Social science & medicine*, 44(6), pp. 773-787.
- Archibald, D., *et al.* (2015) 'A qualitative evidence synthesis on the management of male obesity', *BMJ Open*, 5(10), pp. e008372. doi: 10.1136/bmjopen-2015-008372.
- Ashton, L. M., *et al.* (2015) 'Young adult males' motivators and perceived barriers towards eating healthily and being active: a qualitative study', *International Journal of Behavioral Nutrition and Physical Activity* 12, pp. 93. doi: 10.1186/s12966-015-0257-6.
- Aune, D., *et al.* (2016) 'BMI and all cause mortality: systematic review and non-linear dose-response meta-analysis of 230 cohort studies with 3.74 million deaths among 30.3 million participants', *Bmj*, 353, pp. 17. doi: 10.1136/bmj.i2156.
- Baker, C. (2018) 'Obesity Statistics'. Available at: [researchbriefings.files.parliament.uk/documents/SN03336/SN03336.pdf](https://researchbriefings.files.parliament.uk/documents/SN03336/SN03336.pdf) (Accessed: 01/06/2018).
- Bandura, A. (1978) 'The self system in reciprocal determinism', *American psychologist*, 33(4), pp. 344.

- Bann, D., *et al.* (2017) 'Socioeconomic inequalities in body mass index across adulthood: coordinated analyses of individual participant data from three British birth cohort studies initiated in 1946, 1958 and 1970', *PLoS medicine*, 14(1), pp. 1-20. doi: 10.1371/journal.pmed.1002214.
- Barnett, I., Guell, C. and Ogilvie, D. (2012) 'The experience of physical activity and the transition to retirement: a systematic review and integrative synthesis of qualitative and quantitative evidence', *International Journal of Behavioral Nutrition and Physical Activity*, 9(1), pp. 97.
- Bennett, E. and Gough, B. (2013) 'In pursuit of leanness: The management of appearance, affect and masculinities within a men's weight loss forum', *Health*, 17(3), pp. 284-299.
- Bhimjiyani, A., *et al.* 2018. Technical Report. Baseline scenario, hypothetical scenarios, SSB excise tax policy scenario.
- Bhurosy, T. and Jeewon, R. (2014) 'Overweight and obesity epidemic in developing countries: a problem with diet, physical activity, or socioeconomic status?', *The Scientific World Journal*, 2014.
- Birt, L., *et al.* (2016) 'Member Checking A Tool to Enhance Trustworthiness or Merely a Nod to Validation?', *Qualitative Health Research*, pp. 1049732316654870.
- Black, D. R., Gleser, L. J. and Kooyers, K. J. (1990) 'A meta-analytic evaluation of couples weight-loss programs', *Health Psychology*, 9(3), pp. 330.
- Black, S. D., Townsend, P. and Davidson, N. (1982) 'Inequalities in health: the Black Report'. London: Penguin Books Ltd.
- Blake, H., Zhou, D. and Batt, M. E. (2013) 'Five-year workplace wellness intervention in the NHS', *Perspectives in public health*, 133(5), pp. 262-271.
- Boorman, S. (2009) 'NHS Health and Well-being Final Report November 2009' 299039). Available at: [http://webarchive.nationalarchives.gov.uk/20130124052412/http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_108907.pdf](http://webarchive.nationalarchives.gov.uk/20130124052412/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_108907.pdf).
- Bourgeault, I., Dingwall, R. and De Vries, R. eds., (2010). *The SAGE handbook of qualitative methods in health research*. Sage.
- Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative research in psychology*, 3(2), pp. 77-101.
- Braun, V. and Clarke, V. (2013) *Successful qualitative research: A practical guide for beginners*. sage.
- British Heart Foundation (2019) High blood pressure Available at: <https://www.bhf.org.uk/information-support/risk-factors/high-blood-pressure> (Accessed: 16/04/2019)
- British Obesity and Metabolic Surgery Society, R. C. o. S. (2017) 'Commissioning Guide: Weight Assessment and Management Clinics (Tier 3)'.  
 Broom, A. and Tovey, P. (2009) *Men's health: Body, identity and social context*. John Wiley & Sons.
- Broom, D. H. and Dixon, J. (2008) 'The sex of slimming: Mobilizing gender in weight-loss programmes and fat acceptance', *Social Theory & Health*, 6(2), pp. 148-166.
- Bryman, A. (2004) *Social Research Methods*. Oxford University Press.
- Bunn, C., *et al.* (2016) 'Coz football is what we all have': masculinities, practice, performance and effervescence in a gender-sensitised weight-loss and healthy living programme for men', *Sociology of health & illness*, 38(5), pp. 812-828.

- Burke, M. A., Heiland, F. W. and Nadler, C. M. (2010) 'From 'overweight' to 'about right': Evidence of a generational shift in body weight norms', *Obesity*, 18(6), pp. 1226-1234. doi: 10.1038/oby.2009.369.
- Burke, V., *et al.* (1999) 'Health promotion in couples adapting to a shared lifestyle', *Health Education Research*, 14(2), pp. 269-288.
- Burke, V., *et al.* (2002) 'An innovative program for changing health behaviours', *Asia Pac J Clin Nutr*, 11 Suppl 3, pp. S586-97.
- Burke, V., *et al.* (2003) 'Physical activity and nutrition programs for couples: a randomized controlled trial', *Journal of clinical epidemiology*, 56(5), pp. 421-432.
- Burkhauser, R. V. and Cawley, J. (2008) 'Beyond BMI: the value of more accurate measures of fatness and obesity in social science research', *Journal of health economics*, 27(2), pp. 519-529.
- Burton, N. W., Walsh, A. and Brown, W. J. (2008) 'It just doesn't speak to me: mid-aged men's reactions to '10,000 Steps a Day'', *Health Promotion Journal of Australia*, 19(1), pp. 52-59.
- Butland, B., *et al.* (2016) 'Foresight, Tackling Obesities: Future Choices, Project Report'.
- Cannioto, R. A. (2010) 'Physical activity barriers, behaviors, and beliefs of overweight and obese working women: A preliminary analysis', *Women in Sport and Physical Activity Journal*, 19(1), pp. 70-85.
- Caperchione, C. M., *et al.* (2017) 'The HAT TRICK programme for improving physical activity, healthy eating and connectedness among overweight, inactive men: study protocol of a pragmatic feasibility trial', *BMJ open*, 7(9), pp. e016940.
- Carbonneau, N. and Milyavskaya, M. (2017) 'Your goals or mine? Women's personal and vicarious eating regulation goals and their partners' perceptions of support, well-being, and relationship quality', *Motivation and Emotion*, 41(4), pp. 465-477. doi: 10.1007/s11031-017-9623-9.
- Carrigan, T., Connell, B. and Lee, J. (1985) 'Toward a new sociology of masculinity', *Theory and society*, 14(5), pp. 551-604.
- CASP (2018a). 'CASP Checklist: 10 questions to help you make sense of a Qualitative research.'
- CASP (2018b). 'CASP Checklist: 11 questions to help you make sense of a Randomised Controlled Trial. '
- Census (2011a) 'Highest level of qualification. Table ID QS501UK '. Available at: <http://www.nomisweb.co.uk/census/2011/qs501uk> (Accessed: 16/04/2019).
- Census (2011b) 'Marital and civil partnership status. Table ID KS103EW'. Available at: <http://www.nomisweb.co.uk/census/2011/ks103ew> (Accessed: 16/04/2019).
- Chadwick, J. and Mann, W. N. (1950) *Medical works of Hippocrates*. Blackwell, Oxford, England.
- Chambers, J. A. and Swanson, V. (2012) 'Stories of weight management: factors associated with successful and unsuccessful weight maintenance', *British journal of health psychology*, 17(2), pp. 223-243.
- Charmaz, K. (2006) *Constructing grounded theory: a practical guide through qualitative analysis*. SAGE Publications.
- Chu, S. Y., *et al.* (2007) 'Maternal obesity and risk of gestational diabetes mellitus', *Diabetes care*, 30(8), pp. 2070-2076.
- Chung, L. M. Y. and Fong, S. S. M. (2015) 'Predicting actual weight loss: A review of the determinants according to the theory of planned behaviour', *Health psychology open*, 2(1), pp. 2055102914567972.
- Cochrane Collaboration 2011. *Cochrane Handbook for Systematic Reviews of Interventions* Version 5.1.0 [updated March 2011].

- Coleman, C. K. (2016) *The experience of hospice caregivers providing animal-assisted therapy to hospice patients*. Capella University.
- Connell, R. W. and Messerschmidt, J. W. (2005) 'Hegemonic masculinity: Rethinking the concept', *Gender & society*, 19(6), pp. 829-859.
- Conolly, A. and Saunders, C. (2017) 'Health Survey for England 2016: Adult overweight and obesity.'. Available at: <https://digital.nhs.uk/catalogue/PUB30169> (Accessed: 23/02/2018).
- Cooke, A., Smith, D. and Booth, A. (2012) 'Beyond PICO the SPIDER tool for qualitative evidence synthesis', *Qualitative Health Research*, 22(10), pp. 1435-1443.
- Corbetta, P. (2003) *Social research: Theory, methods and techniques*. Sage.
- Courtenay, W. H. (2000) 'Constructions of masculinity and their influence on men's well-being: a theory of gender and health', *Social science & medicine*, 50(10), pp. 1385-1401.
- Craig, L. (2002) *Caring differently: A time-use analysis of the type and social context of child care performed by fathers and mothers*. Social Policy Research Centre, University of New South Wales.
- Craig, L. (2006) 'Does father care mean fathers share? A comparison of how mothers and fathers in intact families spend time with children', *Gender & society*, 20(2), pp. 259-281.
- Craig, P., et al. (2008) 'Developing and evaluating complex interventions: the new Medical Research Council guidance', *BMJ*, 337, pp. a1655. doi: 10.1136/bmj.a1655.
- Creswell, J. W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Cross-Government Obesity Unit (2009) 'Healthy Weight, Healthy Lives: One Year On'. London: Department of Health 11263). Available at: [http://webarchive.nationalarchives.gov.uk/20100407220244/http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_097623.pdf](http://webarchive.nationalarchives.gov.uk/20100407220244/http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_097623.pdf).
- Crotty, M. (1998) *The Foundations of Social Research: Meaning and Perspective in the Research Process*. SAGE Publications.
- Daniels, S. R. (2009) 'The use of BMI in the clinical setting', *Pediatrics*, 124(Supplement 1), pp. S35-S41.
- Davey, R. (2004) 'The obesity epidemic: too much food for thought?', *British journal of sports medicine*, 38(3), pp. 360-363.
- De Souza, P. and Ciclitira, K. E. (2005) 'Men and dieting: a qualitative analysis', *Journal of Health Psychology*, 10(6), pp. 793-804.
- De Visser, R. and Smith, J. A. (2006) 'Mister in-between: A case study of masculine identity and health-related behaviour', *Journal of Health Psychology*, 11(5), pp. 685-695.
- De Visser, R. O. and McDonnell, E. J. (2013) "Man points": Masculine capital and young men's health', *Health Psychology*, 32(1), pp. 5.
- Deci, E. L. and Ryan, R. M. (1985) *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deliens, T., et al. (2015) 'Determinants of physical activity and sedentary behaviour in university students: a qualitative study using focus group discussions', *BMC Public Health*, 15, pp. 201. doi: 10.1186/s12889-015-1553-4.
- Department for Health (1999) 'Saving lives: Our Healthier Nation'. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/265576/4386.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/265576/4386.pdf).



- Department for Transport (2017) 'Cycling and Walking Investment Strategy'. Available at:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/603527/cycling-walking-investment-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/603527/cycling-walking-investment-strategy.pdf) (Accessed: 09/04/2018).
- Department of Health (2011) 'Healthy Lives, Healthy People: A call to action on obesity in England'. Available at:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/213720/dh\\_130487.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213720/dh_130487.pdf).
- Department of Health & Social Care (2017) *£5 million investment for new obesity policy research unit* Available at: <https://www.gov.uk/government/news/5-million-investment-for-new-obesity-policy-research-unit> (Accessed: 05/06/2018).
- Department of Health Physical activity Health Improvement and Protection (2011) 'Start Active, Stay Active: A report on physical activity from the four home countries' Chief Medical Officers'. Available at:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/216370/dh\\_128210.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216370/dh_128210.pdf).
- Di Angelantonio, E., *et al.* (2016) 'Body-mass index and all-cause mortality: individual-participant-data meta-analysis of 239 prospective studies in four continents', *The Lancet*, 388(10046), pp. 776-786.
- Diabetes UK (2016) 'Facts and Stats'. Available at: [https://diabetes-resources-production.s3-eu-west-1.amazonaws.com/diabetes-storage/migration/pdf/DiabetesUK\\_Facts\\_Stats\\_Oct16.pdf](https://diabetes-resources-production.s3-eu-west-1.amazonaws.com/diabetes-storage/migration/pdf/DiabetesUK_Facts_Stats_Oct16.pdf) (Accessed: 16/04/2019).
- DiCicco-Bloom, B. and Crabtree, B.F., 2006. The qualitative research interview. *Medical education*, 40(4), pp.314-321.
- Doody, O. and Noonan, M. (2013) 'Preparing and conducting interviews to collect data', *Nurse researcher*, 20(5), pp. 28-32.
- Drummond, M. and Drummond, C. (2015) 'My dad's a 'barbie' man and my mum's the cooking girl: Boys and the social construction of food and nutrition', *J Child Health Care*, 19(3), pp. 279-92. doi: 10.1177/1367493513508846.
- Drummond, M. and Smith, J. (2006) 'Ageing men's understanding of nutrition: Implications for health', *Journal of Men's Health & Gender*, 3(1), pp. 56-60. doi: 10.1016/j.jmhg.2005.06.001.
- Dugdale, S., *et al.* (2017) 'Applying Behavior Change Theories and Qualitative Methods in Substance Misuse Implementation Research: Conceptualizing the Adoption of Breaking Free Online in Real-World Clinical Practice', *Qualitative Health Research*, 27(7), pp. 1049-1059.
- Elfhag, K. and Rössner, S. (2005) 'Who succeeds in maintaining weight loss? A conceptual review of factors associated with weight loss maintenance and weight regain', *Obesity Reviews*, 6(1), pp. 67-85.
- Elley, C. R., *et al.* (2003) 'Measuring physical activity in primary health care research: validity and reliability of two questionnaires', *New Zealand Family Physician*, 30(3), pp. 171-180.
- Elliott, S. S., *et al.* (2002) 'Fructose, weight gain, and the insulin resistance syndrome', *The American Journal of Clinical Nutrition*, 76(5), pp. 911-922.
- Epstein, L. and Ogden, J. (2005) 'A qualitative study of GPs' views of treating obesity', *British Journal of General Practice*, 55(519), pp. 750-754.

- Etikan, I., Musa, S. A. and Alkassim, R. S. (2016) 'Comparison of convenience sampling and purposive sampling', *American Journal of Theoretical and Applied Statistics*, 5(1), pp. 1-4.
- Evans, J., *et al.* (2000) 'Socio-economic status, obesity and prevalence of Type 1 and Type 2 diabetes mellitus', *Diabetic Medicine*, 17(6), pp. 478-480.
- Faw, M. H. (2014) 'Young adults' strategies for managing social support during weight-loss attempts', *Qualitative Health Research*, 24(2), pp. 267-278.
- Fielding-Singh, P. (2017) 'Dining with dad: Fathers' influences on family food practices', *Appetite*, 117, pp. 98-108.
- Fildes, A., *et al.* (2015) 'Probability of an obese person attaining normal body weight: cohort study using electronic health records', *American Journal of Public Health*, 105(9), pp. e54-e59.
- Finlay, L. and Gough, B. (2008) *Reflexivity: A Practical Guide for Researchers in Health and Social Sciences*. Wiley.
- Forno, E. and Celedón, J. C. (2017) 'The effect of obesity, weight gain, and weight loss on asthma inception and control', *Current opinion in allergy and clinical immunology*, 17(2), pp. 123-130.
- Freeman, E., *et al.* (2012) 'Preventing and treating childhood obesity: time to target fathers', *International Journal of Obesity*, 36(1), pp. 12-15.
- Gale, N. K., *et al.* (2013) 'Using the framework method for the analysis of qualitative data in multi-disciplinary health research', *BMC medical research methodology*, 13(1), pp. 117.
- Gallagher, D., *et al.* (1996) 'How useful is body mass index for comparison of body fatness across age, sex, and ethnic groups?', *American journal of epidemiology*, 143(3), pp. 228-239.
- Garip, G. and Yardley, L. (2011) 'A synthesis of qualitative research on overweight and obese people's views and experiences of weight management', *Clinical Obesity*, 1(2-3), pp. 110-126.
- Gatineau, M. and Dent, M. 2011. Obesity and Mental Health. National Obesity Observatory. Oxford.
- Gattario, K. H., *et al.* (2015) 'How is men's conformity to masculine norms related to their body image? Masculinity and muscularity across Western countries', *Psychology of Men & Masculinity*, 16(3), pp. 337.
- Gilbert, G. G., Sawyer, R. G. and McNeill, E. B. (2014) *Health education: Creating strategies for school and community health*. Jones & Bartlett Publishers.
- Glaser, B. and Strauss, A. (1967) 'The discovery of grounded theory: strategies for qualitative research'. Aldine.
- Glenny, A., *et al.* (1997) 'The treatment and prevention of obesity: a systematic review of the literature', *International Journal of Obesity*, 21(9), pp. 715.
- Goins, L. B. (2010) *Understanding men's body image in the context of their romantic relationships*. Rutgers University-Camden Graduate School.
- Golan, R., *et al.* (2010) 'Halo effect of a weight-loss trial on spouses: the DIRECT-Spouse study', *Public Health Nutrition*, 13(4), pp. 544-9. doi: 10.1017/s1368980009991273.
- Goldberg, G. (2000) 'Health Survey for England: Cardiovascular Disease'98', *Nutrition Bulletin*, 25(1), pp. 75-78.
- Gortmaker, S. L., *et al.* (2011) 'Changing the future of obesity: science, policy, and action', *The Lancet*, 378(9793), pp. 838-847.
- Gough, B. (2007) 'Real men don't diet': An analysis of contemporary newspaper representations of men, food and health', *Social Science & Medicine*, 64(2), pp. 326-337.

- Gough, B. and Conner, M. T. (2006) 'Barriers to healthy eating amongst men: a qualitative analysis', *Social Science & Medicine*, 62(2), pp. 387-395.
- Gray, C. M., *et al.* (2011) 'Words matter: a qualitative investigation of which weight status terms are acceptable and motivate weight loss when used by health professionals', *BMC Public Health*, 11(1), pp. 513.
- Gray, C. M., *et al.* (2013) 'Football Fans in Training: the development and optimization of an intervention delivered through professional sports clubs to help men lose weight, become more active and adopt healthier eating habits', *BMC Public Health*, 13, pp. 232. doi: <http://dx.doi.org/10.1186/1471-2458-13-232>.
- Green, J. and Thorogood, N. (2009) *Qualitative Methods for Health Research*. SAGE Publications.
- Gregory, C. O., *et al.* (2008) 'Health perceptions and demographic characteristics associated with underassessment of body weight', *Obesity*, 16(5), pp. 979-986.
- Guba, E. G. and Lincoln, Y. S. (1994) 'Competing paradigms in qualitative research', *Handbook of qualitative research*, 2(163-194), pp. 105.
- Gubrium, J.F. and Holstein, J.A., 2001. *Handbook of interview research: Context and method*. Sage Publications.
- Hankey, C. R., Leslie, W. S. and Lean, M. (2002) 'Why lose weight? Reasons for seeking weight loss by overweight but otherwise healthy men', *International Journal of Obesity*, 26(6), pp. 880.
- Hargrove, J. G. (2016) *The importance of action: Understanding characteristics of social action campaigns and their impact on youth's motivation and engagement*. University of Massachusetts Boston.
- Harnack, L., *et al.* (1998) 'Guess who's cooking? The role of men in meal planning, shopping, and preparation in US families', *Journal of the American Dietetic Association*, 98(9), pp. 995-1000.
- Hart, J., *et al.* (2016) 'When is it ok to tell patients they are overweight? General public's views of the role of doctors in supporting patients' dieting and weight management', *Journal of health psychology*, 21(9), pp. 2098-2107.
- Hesse-Biber, S. N. and Leavy, P. L. (2011) *The Practice of Qualitative Research*. SAGE Publications.
- Homish, G. G. and Leonard, K. E. (2008) 'Spousal influence on general health behaviors in a community sample', *American Journal of Health Behavior*, 32(6), pp. 754-763.
- Howitt, D. (2016) *Introduction to qualitative research methods in psychology*. Pearson UK.
- Hudson, J. I., *et al.* (2007) 'The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication', *Biological Psychiatry*, 61(3), pp. 348-58. doi: 10.1016/j.biopsych.2006.03.040.
- Hunt, K., *et al.* (2014) 'Do weight management programmes delivered at professional football clubs attract and engage high risk men? A mixed-methods study', *BMC Public Health*, 14, pp. 50-50. doi: 10.1186/1471-2458-14-50.
- Hunt, K., *et al.* (2013) "“You've got to walk before you run”": Positive evaluations of a walking program as part of a gender-sensitized, weight-management program delivered to men through professional football clubs', *Health Psychology*, 32(1), pp. 57.
- Ishii-Kuntz, M. and Coltrane, S. (1992) 'Predicting the sharing of household labor: Are parenting and housework distinct?', *Sociological Perspectives*, 35(4), pp. 629-647.
- Jackson, S. E., Steptoe, A. and Wardle, J. (2015) 'The influence of partner's behavior on health behavior change: the English Longitudinal Study of Ageing', *JAMA Internal Medicine*, 175(3), pp. 385-92. doi: 10.1001/jamainternmed.2014.7554.

- Jackson, S. E., *et al.* (2013) 'The impact of a health professional recommendation on weight loss attempts in overweight and obese British adults: a cross-sectional analysis', *BMJ open*, 3(11), pp. e003693.
- Jafari-Nasabian, P., *et al.* (2017) 'Aging human body: changes in bone, muscle and body fat with consequent changes in nutrient intake', *Journal of Endocrinology*, 243(1), pp. R37-R51. doi: 10.1530/JOE-16-0603.
- James, D. C., *et al.* (2016) 'Weight-loss strategies used by baby boomer men: a mixed methods approach', *Journal of Human Nutrition and Dietetics*, 29(2), pp. 217-24. doi: 10.1111/jhn.12305.
- Jamshed, S. (2014) 'Qualitative research method-interviewing and observation', *Journal of Basic and Clinical Pharmacy*, 5(4), pp. 87.
- Jeffery, R. W., *et al.* (2006) 'Are fast food restaurants an environmental risk factor for obesity?', *International Journal of Behavioral Nutrition and Physical Activity*, 3(1), pp. 2.
- Jeffery, R. W. and Rick, A. M. (2002) 'Cross-sectional and longitudinal associations between body mass index and marriage-related factors', *Obesity Research*, 10(8), pp. 809-815.
- Jeffery, R. W., *et al.* (1998) 'Use of personal trainers and financial incentives to increase exercise in a behavioral weight-loss program', *Journal of Consulting and Clinical Psychology*, 66(5), pp. 777.
- Joint Health Surveys Unit Nat Cen Social Research & UCL (2016) 'Health Survey for England 2015 Trend Tables'. The Health and Social Care Information Centre: Leeds. Copyright © 2018, Re-used with the permission of The Health and Social Care Information Centre, also known as NHS Digital. All rights reserved. Available at: <http://webarchive.nationalarchives.gov.uk/20180307193646/http://digital.nhs.uk/media/30013/Health-Survey-for-England-2015-Adult-overweight-and-obesity-tables/Any/HSE2015-Adult-obe-tab> (Accessed).
- Jackle, A., Roberts, C. and Lynn, P. (2006) *Telephone versus face-to-face interviewing: mode effects on data quality and likely causes: report on phase II of the ESS-Gallup mixed mode methodology project*. Institute for Social and Economic Research.
- Kajornboon, A. B. (2005) 'Using interviews as research instruments', *E-journal for Research Teachers*, 2(1).
- Kaminski, P. L., *et al.* (2005) 'Body image, eating behaviors, and attitudes toward exercise among gay and straight men', *Eating Behaviors*, 6(3), pp. 179-187.
- Kant, P. and Hull, M. A. (2011) 'Excess body weight and obesity—the link with gastrointestinal and hepatobiliary cancer', *Nature Reviews Gastroenterology and Hepatology*, 8(4), pp. 224.
- Keski-Rahkonen, A. and Mustelin, L. (2016) 'Epidemiology of eating disorders in Europe: prevalence, incidence, comorbidity, course, consequences, and risk factors', *Current Opinion in Psychiatry*, 29(6), pp. 340-345.
- Krefting, L. (1991) 'Rigor in qualitative research: The assessment of trustworthiness', *American journal of occupational therapy*, 45(3), pp. 214-222.
- Krueger, R. A. and Casey, M. A. (2014) *Focus Groups: A Practical Guide for Applied Research*. SAGE Publications.
- Kuchler, F. and Variyam, J. N. (2003) 'Mistakes were made: misperception as a barrier to reducing overweight', *International Journal of Obesity*, 27(7), pp. 856-861. doi: 10.1038/sj.ijo.0802293.
- Laidlaw, A., *et al.* (2015) 'Talk weight: an observational study of communication about patient weight in primary care consultations', *Primary Health Care Research & Development*, 16(3), pp. 309-315.

- Lanningham-Foster, L., Nysse, L. J. and Levine, J. A. (2003) 'Labor saved, calories lost: the energetic impact of domestic labor-saving devices', *Obesity*, 11(10), pp. 1178-1181.
- Laroche, H. H., *et al.* (2013) 'Weight gain among men and women who have a child enter their home', *Journal of the Academy of Nutrition and Dietetics*, 113(11), pp. 1504-10. doi: 10.1016/j.jand.2013.05.022.
- Lean, M., Han, T. and Morrison, C. (1995) 'Waist circumference as a measure for indicating need for weight management', *BMJ*, 311(6998), pp. 158-161.
- Lee, C. and Owens, R. G. (2002) 'Issues for a psychology of men's health', *Journal of Health Psychology*, 7(3), pp. 209-217. doi: 10.1177/1359105302007003215.
- Lee, I.-M., *et al.* (2012) 'Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy', *The Lancet*, 380(9838), pp. 219-229.
- Leiner, D. J. 2016. 'Our research's breadth lives on convenience samples. A case study of the online respondent pool "SoSci Panel" '. *Studies in Communication and Media*. doi: 10.5771/2192-4007-2016-4-367
- Lewis, S., *et al.* (2011) 'A qualitative investigation of obese men's experiences with their weight', *American journal of health behavior*, 35(4), pp. 458-469.
- Lincoln, Y. S. and Guba, E. G. (1985) *Naturalistic Inquiry*. SAGE Publications.
- Local Government Association (2013). Tackling obesity. Local government's new public health role.  
<https://www.local.gov.uk/tackling-obesity-local-governments-new-public-health-role>  
 (Accessed: 02/06/2018)
- Local Government Association (2018) 'Weight management survey. Research report'. Available at:  
<https://www.local.gov.uk/sites/default/files/documents/Weight%20management%20survey%20-%20%20final%20report.pdf> (Accessed: 02/06/2018).
- Lockwood, C., Munn, Z. and Porritt, K. (2015) 'Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation', *International Journal of Evidence-Based Healthcare*, 13(3), pp. 179-187.
- Lombard, M., Snyder-Duch, J. and Bracken, C. C. (2002) 'Content analysis in mass communication: Assessment and reporting of intercoder reliability', *Human Communication Research*, 28(4), pp. 587-604.
- Lora, K. R., Cheney, M. and Branscum, P. (2017) 'Hispanic Mothers' Views of the Fathers' Role in Promoting Healthy Behaviors at Home: Focus Group Findings', *Journal of the Academy of Nutrition and Dietetics*, 117(6), pp. 914-922. doi: 10.1016/j.jand.2017.01.005.
- Lozano-Sufrategui, L., *et al.* (2016) "' Sorry Mate, You're Probably a Bit Too Fat to Be Able to Do Any of These": Men's Experiences of Weight Stigma', *International Journal of Men's Health*, 15(1), pp. 4.
- Lupton, D. (2000) "Where's me dinner?": food preparation arrangements in rural Australian families', *Journal of Sociology*, 36(2), pp. 172-186.
- Lutter, M. and Nestler, E. J. (2009) 'Homeostatic and hedonic signals interact in the regulation of food intake', *The Journal of Nutrition*, 139(3), pp. 629-632.
- Maclean, A., *et al.* (2014) 'How Do Men's Female Relatives Feature in Their Accounts of Changing Eating Practices During a Weight-Management Programme Delivered Through Professional Football Clubs?', *International Journal of Men's Health*, 13(2), pp. 121-138. doi: 10.3149/jmh.1302.121.
- Mahmood, S. S., *et al.* (2014) 'The Framingham Heart Study and the epidemiology of cardiovascular disease: a historical perspective', *The Lancet*, 383(9921), pp. 999-1008.

- Mallan, K. M., *et al.* (2014) 'Dads at the dinner table. A cross-sectional study of Australian fathers' child feeding perceptions and practices', *Appetite*, 73, pp. 40-4.
- Mallyon, A., *et al.* (2010) 'I'm not dieting, I'm doing it for science': Masculinities and the experience of dieting', *Health Sociology Review*, 19(3), pp. 330-342. doi: 10.5172/hesr.2010.19.3.330.
- Malterud, K., 2001. Qualitative research: standards, challenges, and guidelines. *The Lancet*, 358(9280), pp.483-488
- Manning, J. and Kunkel, A. (2013) *Researching interpersonal relationships: Qualitative methods, studies, and analysis*. Sage Publications.
- Market Research Society (2016) 'MRS Guidance Note on Collecting Data on Sex and Gender'. Available at: <https://www.mrs.org.uk/pdf/Guidance%20on%20Collecting%20Data%20on%20Sex%20and%20Gender.pdf>.
- Marsiglio, W. (2009) 'healthy dads, healthy kids', *Contexts*, 8(4), pp. 22-27.
- Martinez, J., *et al.* (2012) 'A Focus Group Study of Mexican Immigrant Men's Perceptions of Weight and Lifestyle', *Public Health Nursing*, 29(6), pp. 490-498. doi: 10.1111/j.1525-1446.2012.01026.x.
- Mata, J., Frank, R. and Hertwig, R. (2015) 'Higher body mass index, less exercise, but healthier eating in married adults: Nine representative surveys across Europe', *Social Science & Medicine*, 138, pp. 119-27. doi: 10.1016/j.socscimed.2015.06.001.
- Matson, J. L. (1977) 'Social reinforcement by the spouse in weight control: A case study', *Journal of Behavior Therapy and Experimental Psychiatry*, 8(3), pp. 327-328.
- Mays, N. and Pope, C. (1995) 'Rigour and qualitative research', *BMJ: British Medical Journal*, 311(6997), pp. 109.
- McConnon, A., *et al.* (2012) 'Application of the theory of planned behaviour to weight control in an overweight cohort. Results from a pan-European dietary intervention trial (DiOGenes)', *Appetite*, 58(1), pp. 313-318.
- McLaren, L. (2007) 'Socioeconomic status and obesity', *Epidemiologic Reviews*, 29(1), pp. 29-48.
- McLean, N., *et al.* (2003) 'Family involvement in weight control, weight maintenance and weight-loss interventions: a systematic review of randomised trials', *International Journal of Obesity*, 27(9), pp. 987-1005.
- McLoone, P. and Morrison, D. S. (2012) 'Risk of child obesity from parental obesity: analysis of repeat national cross-sectional surveys', *The European Journal of Public Health*, 24(2), pp. 186-190.
- McNaughton, S., *et al.* (2005) 'Comparability of dietary patterns assessed by multiple dietary assessment methods: results from the 1946 British Birth Cohort', *European Journal of Clinical Nutrition*, 59(3), pp. 341.
- McNeill, L. S. and Firman, J. L. (2014) 'Ideal body image: A male perspective on self', *Australasian Marketing Journal (AMJ)*, 22(2), pp. 136-143.
- McPherson, K., Marsh, T. and Brown, M. (2007) *Tackling obesities: future choices: Modelling future trends in obesity and the impact on health*. Citeseer.
- Men's Health Forum (2014) *How to make weight-loss services work for men*. Haynes Publishing Group.
- Mendoza, G. (2006) *A multi-dimensional model for the treatment of overweight and obese males in a community setting*. Cardiff Metropolitan University.
- Moher, D., *et al.* (2009) 'Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement', *PLoS Medicine*, 6(7), pp. e1000097.

- Mokdad, A. H., *et al.* (2003) 'Prevalence of Obesity, Diabetes, and Obesity-Related health Risk Factors, 2001', *JAMA*, 289(1), pp. 76-79. doi: 10.1001/jama.289.1.76.
- Monaghan, L. F. (2008) 'Men, physical activity, and the obesity discourse: Critical understandings from a qualitative study', *Sociology of Sport Journal*, 25(1), pp. 97-129.
- Monaghan, L. F. and Hardey, M. (2009) 'Bodily sensibility: Vocabularies of the discredited male body', *Critical Public Health*, 19(3-4), pp. 341-362.
- Monaghan, L. F. and Malson, H. (2013) 'It's worse for women and girls': negotiating embodied masculinities through weight-related talk', *Critical Public Health*, 23(3), pp. 304-319. doi: 10.1080/09581596.2012.754843.
- Moody, A. and Neave, A. (2016) 'Health Survey for England 2015 Adult overweight and obesity'.
- Moore, H., *et al.* (2003) 'Improving management of obesity in primary care: cluster randomised trial', *BMJ*, 327(7423), pp. 1085.
- Morgan, J. F. and Arcelus, J. (2009) 'Body image in gay and straight men: a qualitative study', *European Eating Disorders Review*, 17(6), pp. 435-443.
- Morgan, P. J., *et al.* (2010) 'The SHED-IT community trial study protocol: a randomised controlled trial of weight loss programs for overweight and obese men', *BMC Public Health*, 10, pp. 701. doi: 10.1186/1471-2458-10-701.
- Morgan, P. J., *et al.* (2011a) 'Efficacy of a workplace-based weight loss program for overweight male shift workers: the Workplace POWER (Preventing Obesity Without Eating like a Rabbit) randomized controlled trial', *Preventive Medicine*, 52(5), pp. 317-325.
- Morgan, P. J., *et al.* (2011b) 'The 'Healthy Dads, Healthy Kids' randomized controlled trial: Efficacy of a healthy lifestyle program for overweight fathers and their children', *International Journal of Obesity*, 35(3), pp. 436-447. doi: 10.1038/ijo.2010.151.
- Morgan, P. J., *et al.* (2011c) '12-month outcomes and process evaluation of the SHED-IT RCT: an internet-based weight loss program targeting men', *Obesity (Silver Spring)*, 19(1), pp. 142-51. doi: 10.1038/oby.2010.119.
- Morgan, P. J., *et al.* (2011d) 'The 'Healthy Dads, Healthy Kids' community effectiveness trial: study protocol of a community-based healthy lifestyle program for fathers and their children', *BMC Public Health*, 11(1), pp. 876.
- Morgan, P. J., *et al.* (2011e) 'Engaging men in weight loss: Experiences of men who participated in the male only SHED-IT pilot study', *Obesity Research and Clinical Practice*, 5(3), pp. e169-266. doi: 10.1016/j.orcp.2011.03.002.
- Morgan, P. J., *et al.* (2014) 'The 'Healthy Dads, Healthy Kids' community randomized controlled trial: A community-based healthy lifestyle program for fathers and their children', *Preventive Medicine*, 61, pp. 90-99. doi: 10.1016/j.ypmed.2013.12.019.
- Morgan, P. J., *et al.* (2017) 'Involvement of Fathers in Pediatric Obesity Treatment and Prevention Trials: A Systematic Review', *Pediatrics*, 139(2). doi: 10.1542/peds.2016-2635.
- Morgan, P. J., *et al.* (2018) 'Engaging Fathers to Increase Physical Activity in Girls: The "Dads And Daughters Exercising and Empowered"(DADEE) Randomized Controlled Trial', *Annals of Behavioral Medicine*.
- Morgen, C. S. and Sørensen, T. I. (2014) 'Obesity: global trends in the prevalence of overweight and obesity', *Nature Reviews Endocrinology*, 10(9), pp. 513.
- Murcott, A. (1982) 'On the social significance of the "cooked dinner" in South Wales', *Social Science Information/sur les sciences sociales*.

- National Audit Office (2001) 'Tackling Obesity in England'. Available at: <https://www.nao.org.uk/wp-content/uploads/2001/02/0001220.pdf>.
- National Cancer Institute (2005) *Theory at a Glance. A Guide For Health Promotion Practice*. 2nd edn. USA: National Institutes of Health.
- National Center for Biotechnology Information (2019) *Home - PubMed - NCBI* Available at: <https://www.ncbi.nlm.nih.gov/pubmed/> (Accessed: 08/04/2019).
- National Health and Medical Research Council (2013) 'Clinical practice guidelines for the management of overweight and obesity in adults, adolescents and children in Australia': National Health and Medical Research Council Melbourne.
- Ndebele, J. (2014) 'A survey of men's views on weight management', *Journal of Community Practice*, 87(3), pp. 26-9.
- Newcombe, M. A., *et al.* (2012) "Eat like a man". A social constructionist analysis of the role of food in men's lives', *Appetite*, 59(2), pp. 391-398.
- NHS (2018a) '*Obesity*' Available at: <https://www.nhs.uk/conditions/obesity/>.
- NHS (2018b) '*Prader-Willi syndrome*' NHS Webpage. Online: NHS Digital Available at: <https://www.nhs.uk/conditions/prader-willi-syndrome/> (Accessed: 03/07/2018).
- NHS (2018c) '*5 A Day*' Available at: <https://www.nhs.uk/Livewell/5ADAY/Pages/5ADAYhome.aspx> (Accessed: 19.03.2018).
- NHS (2018d) '*Start the NHS weight loss plan*' Available at: <https://www.nhs.uk/Livewell/weight-loss-guide/Pages/losing-weight-getting-started.aspx> (Accessed: 09/04/2018).
- NHS Digital (2016) 'Health Survey for England 2015 Trend Tables'. Joint Health Surveys Unit (Nat Cen Social Research & UCL) 2018. The Health and Social Care Information Centre: Leeds. Copyright © 2018, Re-used with the permission of The Health and Social Care Information Centre, also known as NHS Digital. All rights reserved.
- NHS Digital (2017a). 'Statistics on Obesity, Physical Activity and Diet - England, 2017'. Hospital Episode Statistics (HES). *In*: Lifestyles Team NHS Digital & Health and Social Care Information Centre (eds.).
- NHS Digital (2017b) 'Statistics on obesity, physical activity and diet. Supplementary analysis: Bariatric surgery procedures taking place in inpatient settings (for the treatment of obesity), and in outpatient settings (for any diagnosis), 2014/15 to 2016/17'. Available at: [http://webarchive.nationalarchives.gov.uk/20180307192547/http://content.digital.nhs.uk/media/25742/Bariatric-surgery-by-procedure-201415-to-201617/xls/Bariatric\\_surgery\\_by\\_procedure\\_201415\\_to\\_201617.xlsx](http://webarchive.nationalarchives.gov.uk/20180307192547/http://content.digital.nhs.uk/media/25742/Bariatric-surgery-by-procedure-201415-to-201617/xls/Bariatric_surgery_by_procedure_201415_to_201617.xlsx) (Accessed: 06/04/2018).
- NHS Digital (2018) 'Statistics on Obesity, Physical Activity and Diet. England: 2018. Hospital Episode Statistics (HES). Data tables': NHS Digital. Available at: <https://files.digital.nhs.uk/publication/0/6/obes-phys-acti-diet-eng-2018-tab.xlsx>.
- NHS England (2016) 'Appendix 7 Guidance for Clinical Commissioning Groups (CCGs): Clinical Guidance: Surgery for Severe and Complex Obesity'. Available at: <https://www.england.nhs.uk/wp-content/uploads/2016/05/appndx-7-obesity-surgery-guid.pdf>.
- NICE (2006) 'Obesity prevention' CG43). Available at: <https://www.nice.org.uk/guidance/ng7/resources/preventing-excess-weight-gain-pdf-51045164485>.



- NICE (2007) 'Behaviour change: general approaches (PH6)' PH6). Available at: <https://www.nice.org.uk/guidance/ph6/resources/behaviour-change-general-approaches-pdf-55457515717> (Accessed: 03/06/2018).
- NICE (2014a) 'Costing report: Obesity. Implementing the NICE guideline on obesity (CG189)'. Available at: <https://www.nice.org.uk/guidance/cg189/resources/costing-report-pdf-193304845>.
- NICE (2014b) 'Obesity: identification, assessment and management': NICE CG189). Available at: <https://www.nice.org.uk/guidance/cg189/resources/obesity-identification-assessment-and-management-pdf-35109821097925>.
- NICE (2014c) 'Weight management: lifestyle services for overweight or obese adults' PH53). Available at: <https://www.nice.org.uk/guidance/ph53/resources/weight-management-lifestyle-services-for-overweight-or-obese-adults-pdf-1996416726469>.
- NICE (2015) 'Preventing excess weight gain' NG7). Available at: <https://www.nice.org.uk/guidance/ng7/resources/preventing-excess-weight-gain-pdf-51045164485>.
- Nielsen, S. J., Siega-Riz, A. M. and Popkin, B. M. (2002) 'Trends in energy intake in US between 1977 and 1996: similar shifts seen across age groups', *Obesity*, 10(5), pp. 370-378.
- Noar, S. M. and Zimmerman, R. S. (2005) 'Health Behavior Theory and cumulative knowledge regarding health behaviors: are we moving in the right direction?', *Health Education Research*, 20(3), pp. 275-290.
- Nothwehr, F., Snetselaar, L. and Wu, H. (2006) 'Weight management strategies reported by rural men and women in Iowa', *Journal of Nutrition Education & Behavior*, 38(4), pp. 249-253.
- O'Cathain, A., *et al.* (2014) 'Maximising the value of combining qualitative research and randomised controlled trials in health research: the QUALitative Research in Trials (QUART) study--a mixed methods study', *Health Technology Assessment*, 18(38).
- OECD (2017) 'Health at a glance 2017: OECD Indicators'.
- Office for National Statistics (2018) 'Health state life expectancies by national deprivation deciles, England and Wales: 2014 to 2016'. Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthinequalities/bulletins/healthstatelifeexpectanciesbyindexofmultipledeprivationimmd/englandandwales2014to2016/pdf> (Accessed: 03/07/2018).
- Pagoto, S. L., *et al.* (2012) 'Male inclusion in randomized controlled trials of lifestyle weight loss interventions', *Obesity*, 20(6), pp. 1234-1239.
- Pope, C. and Mays, N. (2008) *Qualitative Research in Health Care*. 3rd Edition edn.: BMJ Books.
- Pope, C., Ziebland, S. and Mays, N. (2000) 'Qualitative research in health care: analysing qualitative data', *BMJ: British Medical Journal*, 320(7227), pp. 114.
- Pot, N. and Keizer, R. (2016) 'Physical activity and sport participation: A systematic review of the impact of fatherhood', *Preventive Medicine Reports*, 4, pp. 121-127.
- Prestwich, A., *et al.* (2014) 'Does theory influence the effectiveness of health behavior interventions? Meta-analysis', *Health Psychology*, 33(5), pp. 465.
- Pringle, A., *et al.* (2013) 'Delivering men's health interventions in English Premier League football clubs: Key design characteristics', *Public Health*, 127(8), pp. 716-726. doi: 10.1016/j.puhe.2013.04.011.
- Prochaska and DiClemente (1983) 'Stages and processes of self-change of smoking: toward an integrative model of change', (0022-006X (Print)).

- Public Health England (2012) 'Improving outcomes and supporting transparency. Part 1A: A Public Health Outcomes Framework for England, 2013-2016'. Online: Gov.ukPHPSU/HIAT/12341). Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/263658/2901502\\_PHOF\\_Improving\\_Outcomes\\_PT1A\\_v1\\_1.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/263658/2901502_PHOF_Improving_Outcomes_PT1A_v1_1.pdf) (Accessed: 05/06/2018).
- Public Health England (2014a) 'Everybody active, every day. An evidence-based approach to physical activity' 2014432). Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/374914/Framework\\_13.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374914/Framework_13.pdf) (Accessed: 09/04/2018).
- Public Health England (2014b) 'From evidence into action: opportunities to protect and improve the nation's health'. Available at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/366852/PHE\\_Priorities.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/366852/PHE_Priorities.pdf).
- Public Health England (2015) 'Sugar reduction. The evidence for action'. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/470179/Sugar\\_reduction\\_The\\_evidence\\_for\\_action.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/470179/Sugar_reduction_The_evidence_for_action.pdf).
- Public Health England (2016a). 'Adjusted prevalence of underweight, healthy weight, overweight, and obesity among adults in England, 2013-2015.' *Data from Active People Survey*.
- Public Health England (2016b) 'Eatwell guide'. <https://www.gov.uk/government/publications/the-eatwell-guide> (Accessed: 07/06/2019)
- Public Health England (2016c) 'Making Every Contact Count'. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/515949/Making\\_Every\\_Contact\\_Count\\_Consensus\\_Statement.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/515949/Making_Every_Contact_Count_Consensus_Statement.pdf) (Accessed: 05/06/2018).
- Public Health England (2017) 'Qualitative opportunities into user experiences of tier 2 and tier 3 weight management services. What is the user experience and journeys of children, families and adults using weight management services that are currently commissioned in England; and how does their experience align with the conceptions of service providers?'. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/622422/Qualitative\\_opportunities\\_into\\_user\\_experiences\\_t2\\_t3\\_weight\\_management\\_services.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/622422/Qualitative_opportunities_into_user_experiences_t2_t3_weight_management_services.pdf) (Accessed: 06/06/2018).
- Public Health England (2018a) 'Guidance. Adult Obesity: applying All Our Health' Available at: <https://www.gov.uk/government/publications/adult-obesity-applying-all-our-health/adult-obesity-applying-all-our-health> (Accessed: 09/04/2018).
- Public Health England (2018b) 'One You' Available at: <https://campaignresources.phe.gov.uk/resources/campaigns/44-one-you>.
- Puhl, R., Peterson, J. and Luedicke, J. (2013) 'Motivating or stigmatizing? Public perceptions of weight-related language used by health providers', *International journal of obesity*, 37(4), pp. 612.
- Puhl, R. M., et al. (2007) 'Weight stigmatization and bias reduction: perspectives of overweight and obese adults', *Health Education Research*, 23(2), pp. 347-358.
- Pulley, C., et al. (2014) 'Parental child feeding practices: how do perceptions of mother, father, sibling, and self vary?', *Appetite*, 80, pp. 96-102.
- Qu, S. Q. and Dumay, J. (2011) 'The qualitative research interview', *Qualitative Research in Accounting & Management*, 8(3), pp. 238-264.

- Quattrin, T., *et al.* (2012) 'Efficacy of family-based weight control program for preschool children in primary care', *Pediatrics*, 130(4), pp. 660-6. doi: 10.1542/peds.2012-0701.
- Raine, R., *et al.* (2016) 'Challenges, solutions and future directions in the evaluation of service innovations in health care and public health'.
- Richards, L. and Morse, J. M. (2012) *READ ME FIRST for a User's Guide to Qualitative Methods*. SAGE Publications.
- Richardson, W. S., *et al.* (1995) 'The well-built clinical question: a key to evidence-based decisions', *ACP Journal Club*, 123(3), pp. A12-A12.
- Ritchie, J. and Lewis, J. (2003) *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. SAGE.
- Robertson, A., Lobstein, T. and Knai, C. (2007) 'Obesity and socio-economic groups in Europe: Evidence review and implications for action', *Brussels: European Commission*.
- Robertson, A., Mullan, B. and Todd, J. (2014) 'A qualitative exploration of experiences of overweight young and older adults. An application of the integrated behaviour model', *Appetite*, 75, pp. 157-164.
- Robertson, C., *et al.* (2014) 'Systematic reviews of and integrated report on the quantitative, qualitative and economic evidence base for the management of obesity in men', *Health Technology Assessment*, 18(35), pp. v-vi, xxiii-xxix, 1-424. doi: 10.3310/hta18350.
- Robertson, C., *et al.* (2016) 'Should weight loss and maintenance programmes be designed differently for men? A systematic review of long-term randomised controlled trials presenting data for men and women: The ROMEO project', *Obesity Research & Clinical Practice*, 10(1), pp. 70-84.
- Rodearmel, S. J., *et al.* (2006) 'A family-based approach to preventing excessive weight gain', *Obesity (Silver Spring)*, 14(8), pp. 1392-401. doi: 10.1038/oby.2006.158.
- Romero-Corral, A., *et al.* (2008) 'Accuracy of body mass index in diagnosing obesity in the adult general population', *International Journal of Obesity*, 32(6), pp. 959.
- Roos, G., Prättälä, R. and Koski, K. (2001) 'Men, masculinity and food: interviews with Finnish carpenters and engineers', *Appetite*, 37(1), pp. 47-56.
- Royal College of Nursing (2018) 'Obesity' Available at: <https://www.rcn.org.uk/clinical-topics/public-health/specialist-areas/obesity>.
- Sabinsky, M., *et al.* (2007) 'Overweight men's motivations and perceived barriers towards weight loss', *European Journal of Clinical Nutrition*, 61(4), pp. 526-531.
- SACN (2015) 'Carbohydrates and Health'. London. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/445503/SACN\\_Carbohydrates\\_and\\_Health.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/445503/SACN_Carbohydrates_and_Health.pdf) (Accessed: 01/06/2018).
- SACN (2018) 'Draft report: Saturated fats and health Scientific consultation: 8 May to 3 July 2018'. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/704522/Draft\\_report\\_-\\_SACN\\_Saturated\\_Fats\\_and\\_Health.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/704522/Draft_report_-_SACN_Saturated_Fats_and_Health.pdf) (Accessed: 23/07/2018).
- Scarborough, P., *et al.* (2011) 'The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: an update to 2006–07 NHS costs', *Journal of Public Health*, 33(4), pp. 527-535.
- Schlichthorst, M., *et al.* (2016) 'Why do men go to the doctor? Socio-demographic and lifestyle factors associated with healthcare utilisation among a cohort of Australian men', *BMC Public Health*, 16(3), pp. 1028.

- Scholz, U., *et al.* (2013) 'Does social support really help to eat a low-fat diet? Main effects and gender differences of received social support within the Health Action Process Approach', *Applied Psychology: Health and Well-Being*, 5(2), pp. 270-90. doi: 10.1111/aphw.12010.
- Schulz, K. F., Altman, D. G. and Moher, D. (2010) 'CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials', *BMC medicine*, 8(1), pp. 18.
- Schwartz, M. B., *et al.* (2003) 'Weight bias among health professionals specializing in obesity', *Obesity*, 11(9), pp. 1033-1039.
- Seidman, I. (2006) *Interviewing as qualitative research*. Third edition edn.: Teachers College Press.
- Sharpe, S. and Arnold, S. (1998) 'Men, lifestyle and health: a study of health beliefs and practices', *Unpublished research report*, (R000221950).
- Shaw, K. A., *et al.* (2006) 'Exercise for overweight or obesity', *The Cochrane Library*.
- Sherrington, A. (2015) 'Evaluation of an internet based weight loss intervention'.
- Silverman, D. (2015) *Interpreting qualitative data*. SAGE Publications.
- Sloan, C., Gough, B. and Conner, M. (2010) 'Healthy masculinities? How ostensibly healthy men talk about lifestyle, health and gender', *Psychology and Health*, 25(7), pp. 783-803.
- Smith, J. and Firth, J. (2011) 'Qualitative data analysis: the framework approach', *Nurse Researcher*, 18(2), pp. 52-62.
- Smith, J. A., Flowers, P. and Larkin, M. (2009) *Interpretative Phenomenological Analysis: Theory, Method and Research*. SAGE Publications.
- Smith, O. (2008) 'Healthy Weight, Healthy Lives: a Cross-Government Strategy for England'.
- Sniehotta, F. F., Presseau, J. and Araújo-Soares, V. 2014. Time to retire the theory of planned behaviour. *Health Psychology Review*, 8(1), p.1.
- Snipes, S. A., *et al.* (2015) 'Masculine perspectives about work and family concurrently promote and inhibit men's healthy behaviors', *International Journal of Men's Health*, 14(1), pp. 1-20.
- Sobal, J., Rauschenbach, B. and Frongillo, E. A. (2003) 'Marital status changes and body weight changes: a US longitudinal analysis', *Social Science & Medicine* 6(7), pp. 1543-55.
- Social Research Association (2006) 'A code of practice for the safety of social researchers', [http://the-sra.org.uk/wp-content/uploads/safety\\_code\\_of\\_practice.pdf](http://the-sra.org.uk/wp-content/uploads/safety_code_of_practice.pdf) (Accessed: 07/06/2019)
- Solmi, F., *et al.* (2016) 'Eating disorders in a multi-ethnic inner-city UK sample: prevalence, comorbidity and service use', *Social psychiatry and psychiatric epidemiology*, 51(3), pp. 369-381.
- Stafford, M., *et al.* (2010) 'Deprivation and the development of obesity: a multilevel, longitudinal study in England', *American Journal of Preventive Medicine*, 39(2), pp. 130-139.
- Strategic Needs Analysis Team (2016) 'Indices of Deprivation 2015'. England: Gloucestershire County Council. Available at: <https://inform.gloucestershire.gov.uk/get/ShowResourceFile.aspx?ResourceID=209> (Accessed: 11/06/2018).
- Stubbs, R. J., *et al.* (2011) 'Weight outcomes audit for 34,271 adults referred to a primary care/commercial weight management partnership scheme', *Obesity facts*, 4(2), pp. 113-120.
- Suchindran, C., *et al.* (2010) 'Association of adolescent obesity with risk of severe obesity in adulthood', *JAMA*, 304(18), pp. 2042-2047.

- Tanner, C., Petersen, A. and Fraser, S. 'Food, fat and family: Thinking fathers through mothers' words'. *Women's Studies International Forum*: Elsevier, 209-219.
- Thomas, J. and Harden, A. (2008) 'Methods for the thematic synthesis of qualitative research in systematic reviews', *BMC Medical Research Methodology*, 8(1), pp. 45.
- Thomas, S. L., *et al.* (2008) "' They all work... when you stick to them'": A qualitative investigation of dieting, weight loss, and physical exercise, in obese individuals', *Nutrition Journal*, 7(1), pp. 34.
- Thompson, C. J. and Holt, D. B. (2004) 'How do men grab the phallus? Gender tourism in everyday consumption', *Journal of Consumer Culture*, 4(3), pp. 313-338.
- United Nations (2018) *Ageing* Available at: <http://www.un.org/en/sections/issues-depth/ageing/> (Accessed: 03/04/2018).
- van Beurden, S. B., *et al.* (2018) 'Informing the development of online weight management interventions: a qualitative investigation of primary care patient perceptions', *BMC Obesity*, 5(1), pp. 7.
- van Jaarsveld, C. H. and Gulliford, M. C. (2015) 'Childhood obesity trends from primary care electronic health records in England between 1994 and 2013: population-based cohort study', *Archives of Disease in Childhood*, pp. archdischild-2014-307151.
- Vandenbroeck, I., Goossens, J. and Clemens, M. (2012) 'Foresight tackling obesities: future choices—obesity system atlas. 2007'
- Verdonk, P., Seesing, H. and de Rijk, A. (2010) 'Doing masculinity, not doing health? A qualitative study among Dutch male employees about health beliefs and workplace physical activity', *BMC Public Health*, 10(1), pp. 712.
- Walsh, A. D., *et al.* (2017) 'Fathers' perspectives on the diets and physical activity behaviours of their young children', *PLoS One*, 12(6), pp. e0179210. doi: 10.1371/journal.pone.0179210.
- Wang, J., *et al.* (2013a) 'Factors associated with health-related quality of life among overweight or obese adults', *Journal of Clinical Nursing*, 22(15-16), pp. 2172-2182.
- Wang, Y., *et al.* (2013b) 'Do men consult less than women? An analysis of routinely collected UK general practice data', *BMJ Open*, 3(8), pp. e003320.
- Wang, Y. C., *et al.* (2011) 'Health and economic burden of the projected obesity trends in the USA and the UK', *The Lancet*, 378(9793), pp. 815-825.
- Wardle, J. and Johnson, F. (2002) 'Weight and dieting: examining levels of weight concern in British adults', *International Journal of Obesity*, 26(8), pp. 1144.
- Wass, J. and Finer, N. (2013) 'Action on obesity: comprehensive care for all', *Clinical Medicine*, 13(1), pp. 4-5.
- West, C. and Zimmerman, D. H. (1987) 'Doing gender', *Gender & society*, 1(2), pp. 125-151.
- WHO (2000) 'Obesity: preventing and managing the global epidemic': World Health Organization (9241208945).
- WHO (2014) 'Global Status Report on noncommunicable diseases 2014'. Available at: [http://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854\\_eng.pdf?sequence=1](http://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf?sequence=1) (Accessed: 02/06/2018).
- WHO (2017) 'Global Health Observatory data repository'. Available at: <http://apps.who.int/gho/data/view.main.REGION2480A?lang=en> (Accessed: 04/06/2018).
- WHO (2018a) '*Body mass index - BMI*' Available at: <http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi>.

- WHO (2018b) '*Obesity*' Available at: <http://www.who.int/topics/obesity/en/> (Accessed: 31/05/2018).
- WHO (2018c) '*Obesity and overweight. Factsheet*' Available at: <http://www.who.int/mediacentre/factsheets/fs311/en/>.
- World Medical Association (2001) 'World Medical Association Declaration of Helsinki. Ethical principles for medical research involving human subjects', *Bulletin of the World Health Organization*, 79(4), pp. 373.
- Williams, R. (2009) 'Having a laugh': masculinities, health and humour', *Nursing Inquiry*, 16(1), pp. 74-81.
- Williams, R. A. (2007) 'Masculinities fathering and health: the experiences of African-Caribbean and white working class fathers', *Social Science & Medicine*, 64(2), pp. 338-349.
- Wilmot, E. G., *et al.* 2012. Sedentary time in adults and the association with diabetes, cardiovascular disease and death: systematic review and meta-analysis. Springer.
- Wing, R. R. and Jeffery, R. W. (1999) 'Benefits of recruiting participants with friends and increasing social support for weight loss and maintenance', *Journal of Consulting and Clinical Psychology*, 67(1), pp. 132.
- Wolfe, B. L. and Smith, J. E. (2002) 'Different strokes for different folks: why overweight men do not seek weight loss treatment', *Eating Disorders*, 10(2), pp. 115-124.
- Yin, R. K. (2010) '*Qualitative Research from Start to Finish.*' Guilford Press.
- Young, M. D. and Morgan, P. J. (2017) 'Paternal Physical Activity: An Important Target to Improve the Health of Fathers and their Children', *American Journal of Lifestyle Medicine*, 11(3), pp. 212-215.

## Appendix

### 1. Personal correspondence between PhD student (KH) and Slimming World, dated 13/02/2018

**Slimming World** <info@slimmingworld.co.uk>  
to kimberley.harcourt-2014@brookes.ac.uk ▾

Tue, 13 Feb 2018, 12:26 ☆ ↶ ⋮

Hi Kimberley,

Thank you for your email.

The latest figure for men attending Slimming World is 7% and we also have the following information which you may find of use:

*Slimming World supports around 60,000 men to lose weight and lead healthier lives. There are three men attending each group on average, and 96% of our groups have at least one man in them.*

I hope this is of help.

\*\*\*

Best wishes,

Alex

Alexandra Clark, MSc. ANutr.  
Slimming World Nutritionist

## 2. CASP Qualitative Checklist for Literature Review 1 literature appraisal

CASP questions	Gray et al., 2013	Hunt et al., 2013	Hunt et al., 2014	Macleane et al., 2014	Mallyon et al., 2010	Martinez et al., 2012	Morgan et al., 2011c	Morgan et al., 2011e	Sabinsky et al., 2007
1 Clear statement of aims of the research?	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 Qualitative methodology appropriate?	?	✓	?	✓	✓	✓	✓	✓	✓
3 Research design appropriate to address aims?	?	✓	✓	✓	✓	✓	✓	?	✓
4 Recruitment strategy appropriate?	?	✓	✓	X	✓	✓	✓	✓	✓
5 Data collected that addresses research issue?	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Relationship between researcher and participants considered?	X	✓	?	✓	X	?	?	x	X
7 Ethical issues considered?	✓	✓	✓	✓	✓	✓	✓	X	X
8 Data analysis sufficiently rigorous?	✓	✓	✓	✓	✓	✓	✓	✓	✓
9 Is there a clear statement of findings?	✓	✓	✓	✓	✓	✓	✓	✓	✓
10 How valuable is the research?	✓	✓	✓	✓	✓	✓	✓	✓	✓



Quality  
(Low, Moderate, High)

Mod High High High High High Mod Mod Mod

### 3. JBI checklist for Literature Review 1 literature appraisal

JBI questions	Gray et al., 2013	Hunt et al., 2013	Hunt et al., 2014	Maclean et al., 2014	Mallyon et al., 2010	Martinez et al., 2012	Morgan et al., 2011c	Morgan et al., 2011e	Sabinsky et al., 2007
1 Is there congruity between the stated philosophical perspective and the research methodology?	X	X	X	X	✓	X	X	X	X
2 Is there congruity between the research methodology and the research question or objectives?	X	✓	?	✓	✓	?	✓	✓	✓
3 Is there congruity between the research methodology and the methods used to collect data?	✓	✓	✓	✓	✓	✓	✓	✓	✓
4 Is there congruity between the research methodology and the representation and analysis of data?	✓	✓	✓	✓	✓	✓	✓	✓	✓
5 Is there congruity between the research methodology and the interpretation of results?	✓	✓	✓	✓	✓	✓	✓	✓	✓
6 Is there a statement locating the researcher culturally or theoretically?	X	X	X	X	X	X	?	?	X
7 Is the influence of the researcher on the research, and vice-versa, addressed?	X	?	X	✓	X	?	X	X	X

8	✓	?	X	✓	✓	X	?	✓	✓
Are participants, and their voices, adequately represented?									
9	✓	✓	✓	✓	✓	✓	✓	?	?
Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?									
10	?	✓	✓	✓	✓	✓	?	✓	✓
Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?									

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#### 4. PRISMA checklist for Literature Review 1

Section/topic	#	Checklist item	Reported on page #
<b>TITLE</b>			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	NA
<b>ABSTRACT</b>			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	41-42
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of what is already known.	41-42
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	42
<b>METHODS</b>			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	NA
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	42-44
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	45-46
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Appendix 5

Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	46-48
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	48-50
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	46
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	NA
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	NA
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$ ) for each meta-analysis.	48-52

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	NA
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	NA
<b>RESULTS</b>			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	46-48
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	48-50
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	NA

Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	NA
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	NA
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	51-53
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	NA
<b>DISCUSSION</b>			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	67-70
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	71
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	67-72
<b>FUNDING</b>			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	NA

## 5. Example of electronic search of database for Literature Review 1

Search	Query	Items found	Time
#11	Search (((((((((((qualitative[Title/Abstract]) OR interview*[Title/Abstract]) OR focus group*[Title/Abstract]) OR perspective*[Title/Abstract]) OR perception*[Title/Abstract]) OR experienc*[Title/Abstract]) OR attitud*[Title/Abstract]) OR view*[Title/Abstract]) OR belief*[Title/Abstract])) AND (((((weight loss[Title/Abstract]) OR weight change*[Title/Abstract]) OR weight reduct*[Title/Abstract]) OR slimming[Title/Abstract]) OR weight gain[Title/Abstract])) AND ((((((man[Title/Abstract]) OR men[Title/Abstract]) OR male[Title/Abstract]) OR man's[Title/Abstract]) OR men's[Title/Abstract]) OR male's[Title/Abstract])) AND (((((((exercis*[Title/Abstract]) OR training[Title/Abstract]) OR work out[Title/Abstract]) OR aerobic[Title/Abstract]) OR anaerobic[Title/Abstract]) OR resistance[Title/Abstract]) OR physical activit*[Title/Abstract]) OR gym[Title/Abstract]) OR sport*[Title/Abstract]) Filters: Publication date from 1999/01/01 to 2016/12/31	307	11:28:08
#7	Search (((((((((((qualitative[Title/Abstract]) OR interview*[Title/Abstract]) OR focus group*[Title/Abstract]) OR perspective*[Title/Abstract]) OR perception*[Title/Abstract]) OR experienc*[Title/Abstract]) OR attitud*[Title/Abstract]) OR view*[Title/Abstract]) OR belief*[Title/Abstract])) AND (((((weight loss[Title/Abstract]) OR weight change*[Title/Abstract]) OR weight reduct*[Title/Abstract]) OR slimming[Title/Abstract]) OR weight gain[Title/Abstract])) AND ((((((man[Title/Abstract]) OR men[Title/Abstract]) OR male[Title/Abstract]) OR man's[Title/Abstract]) OR men's[Title/Abstract]) OR male's[Title/Abstract])) AND (((((((diet*[Title/Abstract]) OR fast*[Title/Abstract]) OR restrict*[Title/Abstract]) OR food*[Title/Abstract]) OR nutrition*[Title/Abstract]) OR low calori*[Title/Abstract]) Filters: Publication date from 1999/01/01 to 2016/12/31	506	11:25:21

#6	Search ((((((((((qualitative[Title/Abstract]) OR interview*[Title/Abstract]) OR focus group*[Title/Abstract]) OR perspective*[Title/Abstract]) OR perception*[Title/Abstract]) OR experienc*[Title/Abstract]) OR attitud*[Title/Abstract]) OR view*[Title/Abstract]) OR belief*[Title/Abstract])) AND (((((weight loss[Title/Abstract]) OR weight change*[Title/Abstract]) OR weight reduct*[Title/Abstract]) OR slimming[Title/Abstract]) OR weight gain[Title/Abstract])) AND ((((((man[Title/Abstract]) OR men[Title/Abstract]) OR male[Title/Abstract]) OR man's[Title/Abstract]) OR men's[Title/Abstract]) OR male's[Title/Abstract])) AND ((((((diet*[Title/Abstract]) OR fast*[Title/Abstract]) OR restrict*[Title/Abstract]) OR food*[Title/Abstract]) OR nutrition*[Title/Abstract]) OR low calori*[Title/Abstract]))	659	11:23:27
#5	Search ((((((((((exercis*[Title/Abstract]) OR training[Title/Abstract]) OR work out[Title/Abstract]) OR aerobic[Title/Abstract]) OR anaerobic[Title/Abstract]) OR resistance[Title/Abstract]) OR physical activit*[Title/Abstract]) OR gym[Title/Abstract]) OR sport*[Title/Abstract]	1209100	11:22:43
#4	Search ((((((diet*[Title/Abstract]) OR fast*[Title/Abstract]) OR restrict*[Title/Abstract]) OR food*[Title/Abstract]) OR nutrition*[Title/Abstract]) OR low calori*[Title/Abstract]	1536233	11:21:40
#3	Search ((((((man[Title/Abstract]) OR men[Title/Abstract]) OR male[Title/Abstract]) OR man's[Title/Abstract]) OR men's[Title/Abstract]) OR male's[Title/Abstract]	1288364	11:20:52
#2	Search (((((weight loss[Title/Abstract]) OR weight change*[Title/Abstract]) OR weight reduct*[Title/Abstract]) OR slimming[Title/Abstract]) OR weight gain[Title/Abstract]	120632	11:20:13
#1	Search ((((((((((qualitative[Title/Abstract]) OR interview*[Title/Abstract]) OR focus group*[Title/Abstract]) OR perspective*[Title/Abstract]) OR perception*[Title/Abstract]) OR experienc*[Title/Abstract]) OR attitud*[Title/Abstract]) OR view*[Title/Abstract]) OR belief*[Title/Abstract]	1893679	11:19:16

## 6. PRISMA checklist for Literature Review 2

Section/topic	#	Checklist item	Reported on page #
<b>TITLE</b>			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	NA
<b>ABSTRACT</b>			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	73-75
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of what is already known.	73-75
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	75
<b>METHODS</b>			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	NA
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	76-78
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	76-77
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Appendix 7
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	77-79



Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	78-83
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	78-82
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	83-85
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	100-112
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$ ) for each meta-analysis.	NA

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	NA
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	NA
<b>RESULTS</b>			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	78-80
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	81-82
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	83-99
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	103-104, 109-112

Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	NA
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	NA
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	NA
<b>DISCUSSION</b>			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	123-127
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	127-129
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	123-127, 129
<b>FUNDING</b>			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	NA

7. Example of electronic search of database for Literature Review 2

#10	Search (((((((((((((((famil*[Title/Abstract]) OR partner*[Title/Abstract]) OR child*[Title/Abstract]) OR "social support"[Title/Abstract]) OR couple*[Title/Abstract]) OR spous*[Title/Abstract]) OR wives[Title/Abstract]) OR wife[Title/Abstract]) OR relative*[Title/Abstract]) OR marri*[Title/Abstract]) OR kid*[Title/Abstract]) OR parent*[Title/Abstract])) AND ((((((weight[Title/Abstract]) OR slimm*[Title/Abstract]) OR obes*[Title/Abstract]) OR overweight[Title/Abstract]) OR health[Title/Abstract]) OR lifestyle[Title/Abstract])) AND (((((((male*[Title/Abstract]) OR men[Title/Abstract]) OR man[Title/Abstract]) OR men's[Title/Abstract]) OR man's[Title/Abstract]) OR father*[Title/Abstract]) OR dad*[Title/Abstract]) OR husband*[Title/Abstract]) OR boyfriend*[Title/Abstract])) AND (((((((exercis*[Title/Abstract]) OR "physical activity"[Title/Abstract]) OR "physically active"[Title/Abstract]) OR sport*[Title/Abstract]) OR aerobic[Title/Abstract]) OR anaerobic[Title/Abstract]) OR training[Title/Abstract]) OR gym[Title/Abstract]) OR fit*[Title/Abstract]) Filters: Humans	7120	7:07:48
#11	Search (((((((((((((((famil*[Title/Abstract]) OR partner*[Title/Abstract]) OR child*[Title/Abstract]) OR "social support"[Title/Abstract]) OR couple*[Title/Abstract]) OR spous*[Title/Abstract]) OR wives[Title/Abstract]) OR wife[Title/Abstract]) OR relative*[Title/Abstract]) OR marri*[Title/Abstract]) OR kid*[Title/Abstract]) OR parent*[Title/Abstract])) AND ((((((weight[Title/Abstract]) OR slimm*[Title/Abstract]) OR obes*[Title/Abstract]) OR overweight[Title/Abstract]) OR health[Title/Abstract]) OR lifestyle[Title/Abstract])) AND (((((((male*[Title/Abstract]) OR men[Title/Abstract]) OR man[Title/Abstract]) OR men's[Title/Abstract]) OR man's[Title/Abstract]) OR father*[Title/Abstract]) OR dad*[Title/Abstract]) OR husband*[Title/Abstract]) OR boyfriend*[Title/Abstract])) AND (((((((exercis*[Title/Abstract]) OR "physical activity"[Title/Abstract]) OR "physically active"[Title/Abstract]) OR sport*[Title/Abstract]) OR aerobic[Title/Abstract]) OR anaerobic[Title/Abstract]) OR training[Title/Abstract]) OR gym[Title/Abstract]) OR fit*[Title/Abstract])	9038	7:07:44
#9	Search (((((((((((((((famil*[Title/Abstract]) OR partner*[Title/Abstract]) OR child*[Title/Abstract]) OR "social support"[Title/Abstract]) OR couple*[Title/Abstract]) OR spous*[Title/Abstract]) OR wives[Title/Abstract]) OR wife[Title/Abstract]) OR relative*[Title/Abstract]) OR marri*[Title/Abstract]) OR kid*[Title/Abstract]) OR parent*[Title/Abstract])) AND ((((((weight[Title/Abstract]) OR slimm*[Title/Abstract]) OR obes*[Title/Abstract]) OR overweight[Title/Abstract]) OR health[Title/Abstract]) OR	8107	7:05:38

	lifestyle[Title/Abstract])) AND (((((((((male*[Title/Abstract]) OR men[Title/Abstract]) OR man[Title/Abstract]) OR men's[Title/Abstract]) OR man's[Title/Abstract]) OR father*[Title/Abstract]) OR dad*[Title/Abstract]) OR husband*[Title/Abstract]) OR boyfriend*[Title/Abstract])) AND ((((((diet*[Title/Abstract]) OR food[Title/Abstract]) OR calori*[Title/Abstract]) OR nutrition*[Title/Abstract]) OR eat*[Title/Abstract]) OR "portion size"[Title/Abstract]) Filters: Humans		
#6	Search (((((((((((((((famil*[Title/Abstract]) OR partner*[Title/Abstract]) OR child*[Title/Abstract]) OR "social support"[Title/Abstract]) OR couple*[Title/Abstract]) OR spous*[Title/Abstract]) OR wives[Title/Abstract]) OR wife[Title/Abstract]) OR relative*[Title/Abstract]) OR marri*[Title/Abstract]) OR kid*[Title/Abstract]) OR parent*[Title/Abstract])) AND ((((((weight[Title/Abstract]) OR slimm*[Title/Abstract]) OR obes*[Title/Abstract]) OR overweight[Title/Abstract]) OR health[Title/Abstract]) OR lifestyle[Title/Abstract])) AND (((((((((male*[Title/Abstract]) OR men[Title/Abstract]) OR man[Title/Abstract]) OR men's[Title/Abstract]) OR man's[Title/Abstract]) OR father*[Title/Abstract]) OR dad*[Title/Abstract]) OR husband*[Title/Abstract]) OR boyfriend*[Title/Abstract])) AND ((((((diet*[Title/Abstract]) OR food[Title/Abstract]) OR calori*[Title/Abstract]) OR nutrition*[Title/Abstract]) OR eat*[Title/Abstract]) OR "portion size"[Title/Abstract])	13319	7:03:44
#5	Search (((((((((exercis*[Title/Abstract]) OR "physical activity"[Title/Abstract]) OR "physically active"[Title/Abstract]) OR sport*[Title/Abstract]) OR aerobic[Title/Abstract]) OR anaerobic[Title/Abstract]) OR training[Title/Abstract]) OR gym[Title/Abstract]) OR fit*[Title/Abstract]	982231	6:59:45
#4	Search ((((((diet*[Title/Abstract]) OR food[Title/Abstract]) OR calori*[Title/Abstract]) OR nutrition*[Title/Abstract]) OR eat*[Title/Abstract]) OR "portion size"[Title/Abstract]	955614	6:57:28
#3	Search (((((((((male*[Title/Abstract]) OR men[Title/Abstract]) OR man[Title/Abstract]) OR men's[Title/Abstract]) OR man's[Title/Abstract]) OR father*[Title/Abstract]) OR dad*[Title/Abstract]) OR husband*[Title/Abstract]) OR boyfriend*[Title/Abstract]	1437629	6:56:19
#2	Search ((((((weight[Title/Abstract]) OR slimm*[Title/Abstract]) OR obes*[Title/Abstract]) OR overweight[Title/Abstract]) OR health[Title/Abstract]) OR lifestyle[Title/Abstract]	2361061	6:55:15
#1	Search (((((((((((((((famil*[Title/Abstract]) OR partner*[Title/Abstract]) OR child*[Title/Abstract]) OR "social support"[Title/Abstract]) OR couple*[Title/Abstract]) OR spous*[Title/Abstract]) OR wives[Title/Abstract]) OR wife[Title/Abstract]) OR relative*[Title/Abstract]) OR marri*[Title/Abstract]) OR kid*[Title/Abstract]) OR parent*[Title/Abstract]	4059388	6:53:51

## 8. Example of how NVivo was used to code results section of qualitative research articles for Literature Review 2

While TB's comments about his mother are quite light hearted, WD's comments show a reflexive understanding of the significance of food in mother-son relationships and gendered nurturance. He says that his 'mum goes out of her way' making Sunday dinners, for the family where 'she cooks for me - does not cook for [my two sisters]'. He says:

I'm probably the biggest disappointment for my mother and my mother-in-law anyway in terms of the way I interact with them, but then again that's another story, but then to reject their cooking, which is probably the last bastion of their bond with me that's difficult. Actually that is difficult now I think about it, but I've been in two or three situations like that and while I love both the ladies to actually reject them now on probably the only level they can actually communicate with me, food, that's hard, I'm not sure you expected that answer. Their food is excellent and that is hard work (WD-M).

Relationships with other men can also be a problem for dieters. When WD asked at restaurants 'could I just have the steak with green vegetables, thank you?' he said it was, 'mostly males' who asked 'what are you doing?'. SR also reported that negative responses to the diet came mainly 'in blokey discussions where [there is] a combination of amazement that I'd even bother getting into the study to then some degree of interest in what I'm hoping to achieve'. An instrumental approach may help the men discuss dieting, but social interaction while dieting can be generally difficult. HM talks of 'things which are the reasons of my low motivation, my friends being the ones when they eat in front of me, ... cause they're eating their normal food'. This means he's 'not socialising as [he] used to'. On the other hand his male flatmates have been 'very, very encouraging and very supportive', which has helped him maintain the diet. Variations in the reflexive doing of gender affected the understandings and behaviour of these men in their dieting. They were less likely to take responsibility for the food-related tasks in the household than women, and half of the male participants were more or less dependent on female family members to cook for them. Those women cajoled men into dieting and made their diet food. On occasion men's attempts to diet were sabotaged because of gendered class dispositions and gender relations. These can distance men from their bodies and maintain an illusion of masculine bodily control partly by having women tend to men's bodily needs. Half the males in this sample were there because of the women in their lives, and this confirms the common research finding that women are not just home managers, but family health managers and motivators (e.g. Charles and Kerr 1988; DeVault 1991). More traditional gender relations with wives seemed to assist in successful dieting experiences. However, there were cases where conflicts between their current class and gender habitus and those of friends and family could undermine men's dieting efforts. Meanwhile, if men avoid discussing the diet with others, they are likely to lack dieting knowledge available to women through their friends. Men appear deskilled in many areas surrounding dieting. To reclaim a sense of masculine control over the labour of dieting some of the men here emphasised the scientific aspect of this 'research project', and this and similar strategies appeared to help bring dieting into line with more hegemonically masculine dispositions. These strategies often helped draw attention away from the men's bodies and helped them overcome their own associations of dieting with 'feminine'

equal share of cooking

women encourage dieting

men's partners do most food work

partner's responsibility to help them lose weight

ascribing blame or responsibility to partner

perception of generally supportive wife

women manage men's diets

issue of feeding by mothers

damage to relationships

Coding Density

subverting efforts

Non-support from a partner

women's involvement and care to protect masculinity

success due to women

## 9. CASP Qualitative Checklist for Literature Review 2

<b>CASP qualitative checklist questions</b>							
	Burke et al., 1999	Faw, 2014	Maclean et al., 2014	Mallyon et al., 2010	Martinez et al., 2012	Sabinsky et al., 2007	Thomas et al., 2008
1 Clear statement of aims of the research?	✓	✓	✓	✓	✓	✓	✓
2 Qualitative methodology appropriate?	✓	✓	✓	✓	✓	✓	✓
3 Research design appropriate to address aims?	✓	✓	✓	✓	✓	✓	✓
4 Recruitment strategy appropriate?	?	✓	✓	✓	✓	✓	✓
5 Data collected that addresses research issue?	✓	✓	✓	✓	✓	✓	✓
6 Relationship between researcher and participants considered?	X	X	✓	X	✓	X	X
7 Ethical issues considered?	?	?	✓	✓	✓	X	X
8 Data analysis sufficiently rigorous?	?	X	✓	✓	✓	✓	✓
9 Is there a clear statement of findings?	X	?	✓	✓	✓	✓	?
10 How valuable is the research?	?	?	✓	✓	✓	✓	✓
Quality	Low	Mod	High	High	High	Mod	Mod

## 10. JBI checklist for qualitative research, Literature Review 2

JBI questions	Burke et al., 1999	Faw, 2014	Maclean et al., 2014	Mallyon et al., 2010	Martinez et al., 2012	Sabinsky et al., 2007	Thomas et al., 2008
1. Is there congruity between the stated philosophical perspective and the research methodology?	X	X	X	✓	X	X	?
2. Is there congruity between the research methodology and the research question or objectives?	✓	✓	✓	✓		✓	✓
3. Is there congruity between the research methodology and the methods used to collect data?	✓	✓	✓	✓	✓	✓	✓
4. Is there congruity between the research methodology and the representation and analysis of data?	?	✓	✓	✓	✓	✓	✓
5. Is there congruity between the research methodology and the interpretation of results?	?	✓	✓	✓	✓	✓	✓
6. Is there a statement locating the researcher culturally or theoretically?	X	X	X	X	X	X	X
7. Is the influence of the researcher on the research, and vice-versa, addressed?	X	X	✓	X	?	X	X
8. Are participants, and their voices, adequately represented?	?	?	✓	✓	X	✓	?
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	✓	✓	✓	✓	✓	?	?
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	✓	✓	✓	✓	✓	✓	✓

## 11. CASP Randomised Controlled Trial checklist for Literature Review 2

CASP RCT question checklist							
	Burke et al., 1999	Burke et al., 2002	Burke et al., 2003	Morgan et al., 2011b	Morgan et al., 2014	Quattrin et al., 2012	Rodearmel et al., 2006
1 Did the trial address a clearly focused issue?	✓	✓	✓	✓	✓	✓	✓
2 Was the assignment of patients to treatments randomised?	✓	✓	✓	✓	✓	✓	✓
3 Were all of the patients who entered the trial properly accounted for at its conclusion?	✓	✓	✓	✓	✓	✓	✓
4 Were patients, health workers and study personnel 'blind' to treatment?	X	X	X	?	?	✓	X
5 Were the groups similar at the start of the trial	✓	✓	✓	✓	✓	✓	?
6 Aside from the experimental intervention, were the groups treated equally?	✓	✓	✓	✓	✓	✓	✓
7 How large was the treatment effect? (✓ = large, x = small)	✓	X	✓	✓	✓	✓	✓
8 How precise was the estimate of the treatment effect? (✓ = precise, x = not precise)	✓	X	X	✓	✓	✓	✓
9 Can the results be applied to the local population, or in your context?	✓	X	X	✓	✓	✓	✓
10 Were all clinically important outcomes considered?	✓	?	✓	✓	✓	✓	✓
11 Are the benefits worth the harms and costs?	✓	✓	✓	✓	✓	✓	✓
Quality	Mod	Low	Mod	High	High	Mod	Mod



## 12. Personal Correspondence with one of the authors of the Burke et al., 2002 article included in Literature Review 2

**Trevor Mori** <trevor.mori@uwa.edu.au>  
to Kimberley ▾

23 Feb 2018, 02:59 ☆ ↩ ⋮

Dear Kimberley,

Thank you for your email. The reason you have not been able to contact Dr Burke is because she retired some years ago. Looking at Fig 4 in the paper you are quite correct, there is an error. The X-axis should read “*baseline, end of intervention and at follow-up*” for each block of three groups. I hope this clarifies any confusion.

Kind regards  
Trevor

---

**Professor Trevor A Mori**  
NH&MRC Research Fellow  
Medical School  
Faculty of Health and Medical Sciences  
University of Western Australia

## 13. Interview guide for Study 1

*This interview schedule is here to guide our conversation. There are questions about obesity and overweight, diabetes, physical activity, diet and at the end, some questions about what you'd include in a weight loss service for men if you were to design one. If you need to stop the interview at any point, please tell me and we'll stop, you don't need to give a reason why. I'd like to remind you that everything you say is kept confidential subject to legal limitations.*

*This shouldn't take more than 50 minutes. I'll say which interview this is when I turn the recorder on, for my own records, and then we'll get started. Do you have any questions before we get started?*

*I'll start recording now. (Interview number and date)*

1. We hear the terms overweight and obese a lot, what differences do you think there are between someone who is overweight and someone who is obese?  
*(Prompt: do they affect health differently; visually, can you tell the difference? do they affect day to day live differently?)*
2. What sort of impact do you believe being overweight or obese has on health?
3. What are your thoughts about why some people are overweight or obese and some people aren't?
4. Do you think there is anything specific that plays a role in a person becoming obese?

5. Once a person has obesity do you think it can be reversed at all?
6. What measure do you think could be taken to prevent a person becoming obese?
7. What is it about lifestyle that you think might influence obesity?
8. What are your thoughts about your own weight?
9. Have you heard of diabetes? (probe for having heard of type 2 diabetes)  
What is type 2 diabetes?
10. What do you believe causes type 2 diabetes?
11. What is it about lifestyle that you think might influence type 2 diabetes?
12. What measures could be taken to prevent a person becoming diagnosed with type 2 diabetes?
13. How much do you know about the relationship between weight and type 2 diabetes? (*Probe – what extend to you believe controlling weight could prevent diabetes or control diabetes?*)
14. What impact on health do you believe type 2 diabetes could have?
15. What lifestyle choices could change how a person manages their diabetes?
16. What are your thoughts about curing diabetes?
17. What would you describe as physical activity?
18. How would you describe your current activity levels? In a typical week how active are you?
19. How do you think the terms physical activity and exercise are associated?
20. How do you feel about exercising?
21. Are there any physical activities that you enjoy doing? (*Probe – what are these, and why do you enjoy them*)
22. What motivates you to be physically active?
23. What sort of barriers stop you being physically active?
24. Do you believe you have control over these barriers?
25. What could be done to overcome these barriers?
26. What do you want to achieve by being physically active (or exercising, if say they exercise)?
27. How important do you think exercise is for weight loss or for keeping weight off?
28. Have you heard of elastic resistance bands? (*Describe the elastic resistance bands if haven't heard of them before*) What do you think about these? If someone gave you a set of elastic resistance bands, would you use them?

29. *(If lists bad/ good things about bands and says wouldn't/would use them)*  
Why would you/ wouldn't you use the elastic resistance bands?
30. What would you describe as a healthy diet?
31. To what extent do you think what we eat might play a role in the onset of obesity?
32. To what extent do you think portion size plays a role in the onset of obesity?
33. Government guidelines for healthy eating?
34. Have you ever changed your diet to lose weight? If yes, what changes did you make?
35. How did the diet change make you feel? During? After?
36. Did you have support from friends/family?
37. Where do you get most of your knowledge about food, dieting and physical activity from?
38. What would motivate you to start a diet
39. What would put you off consider not dieting
40. Have you heard of commercial weight loss programmes such as Weight Watchers/ Slimming world? What is your view of commercial weight loss programmes?
41. Who do you think these groups are aimed at?
42. What would encourage you to go along to one of these?
43. I'd like to talk about what men would want in a weight loss programme. If a weight loss programme were to exist, what would it include? *(Probe – duration, frequency of meetings, individual vs group)*
44. How many weeks would it last, and how long would each session be?
45. What would you do in the sessions? *(Probe – value nutritional guidance, exercise together, who would lead the group?)*
46. If it were a group tailored to meet the needs of men, would you prefer it to be single sex or mixed sex?
47. If you were going to consider losing weight, who would you turn to for weight loss support? What support would you want *(friends/family/GP, other?)*
48. The role of women in weight loss
49. What would you think about wearing a wrist-worn monitor that measured your activity levels?
50. What would you think about wearing a chest-worn heart rate monitor while exercising? *(Probe - View of wearing monitors, how would monitor impact activity levels)*

## 14. Interview guide for Study 2

*In a moment, and I'll tell you when, I'll turn the voice recorder on and we'll have a chat about diets, physical activity, weight loss strategies, obesity and diabetes. You've read the information sheet and signed the consent form saying you're happy to participate and you know you can stop the interview at any time without giving a reason. This interview shouldn't take more than 50 minutes. The interview questions will be about diet, physical activity, obesity, type 2 diabetes and lastly about the role you play in the weight loss of the male you know and what involvement you would expect should the male you are supporting decide to participate in a weight loss group. I'd like to assure you that everything you say is kept confidential, subject to legal limitations. You can take as long as you need to answer questions. Do you have any questions before we start?*

*I'm now turning on the voice recorder.*

*The date is X, this the interview with participant Y.*

1. We hear the terms overweight and obese a lot, what differences do you think there are between someone who is overweight and someone who is obese?  
... (Prompt: If yes – what kinds of differences, how can you tell these people apart, do they affect day to day living?)
2. What sort of impact do you believe being overweight or obese has on health?
3. What are your thoughts about why some people are overweight or obese and some people aren't?
4. Do you think there is anything specific that plays a role in a person becoming obese? Once a person has obesity, do you think it can be reversed at all?
5. What measures do you think could be taken to prevent a person becoming obese?
6. What is it about lifestyle that you think might influence obesity?
7. What are your thoughts about your own weight?
8. What are your thoughts about the weight of the male may be supporting/have supported?
9. Have you heard of diabetes? What is type 2 diabetes?
10. What do you believe causes type 2 diabetes?
11. What is it about lifestyle that you think might influence type 2 diabetes?
12. What measures could be taken to prevent a person becoming diagnosed with type 2 diabetes?
13. How much do you know about the relationship between weight and type 2 diabetes? (Probe – what extend to you believe controlling weight could prevent diabetes or control diabetes?)

14. What impact on health do you believe type 2 diabetes could have? 14. What lifestyle choices could change how a person manages their diabetes?
15. Do you have any thoughts about the quality or amount of support available for people with obesity or Type 2 diabetes? What support might be preferable for men?
16. What are your thoughts about curing type 2 diabetes?

*Next I'd like to talk about being active.*

17. What would you describe as physical activity?
18. How would you describe your current activity levels?
19. Are there any activities you have a preference for? Any that you avoid? Are there any activities you do together?
20. To what extent do you think physical activity has an impact on weight? How important is PA in relation to weight loss/WLM?
21. How important do you believe physical activity is for health?
22. What are your experiences with exercise as a child and as an adult? Were they positive or negative experiences? Has your view of exercise changed with time? What lead to this change? Experiences? Gender differences? What are your goals when deciding to exercise?
23. Are there any barriers you experience to exercising? Does this differ for men, and for women in general?
24. To what extent do you think physical activity has an impact on weight? How important is PA in relation to weight loss/WLM?
25. How important do you believe physical activity is for health?
26. What are your experiences with exercise as a child and as an adult? Were they positive or negative experiences? Has your view of exercise changed with time? What lead to this change? Experiences? Gender differences? What are your goals when deciding to exercise?
27. Are there any barriers you experience to exercising? Does this differ for men, and for women in general?
28. If I asked you to describe a healthy diet, what would you say?
29. To what extent do you think what we eat might play a role in the onset of obesity
30. Have you any thoughts or comments about portion sizes?
31. Have you heard of any Government guidelines for healthy eating? What are these?
32. Have you ever changed your diet to lose weight?  
If yes, what changes did you make?
33. How did dieting make you feel? (*probe for emotions - tired, in control, was it making a difference?*) How did you feel after dieting? (*Successful? Failure?*) How do you think your diet went? What was difficult about the

diet? What went well? Did you have support from friends or family? Social support? Personal support preferences? What type of support would you have liked, or would have worked for you?

34. Did you have support from anyone when you made these changes?
35. If you were to do this again, who would you value some support from? How would they support you?
36. What would motivate you to start a diet again?
37. What barriers are there to you starting a diet again?
38. Do you feel you have control over these barriers?
39. Have you any experience of supporting someone who has changed their diet to lose weight?
40. Where did you acquire your PA and diet knowledge? What sources do you use to find out about these topics?
41. Have you heard of commercial weight loss programmes, such as slimming world, weight watchers?  
What are your views on commercial weight loss programmes such as Weight Watchers and Slimming World?
42. Who do you think they are targeted towards?
43. What would motivate you to go along to one of the sessions?
44. Who would you be most comfortable attending a session with?
45. If a weight loss group tailored to the needs of men were to exist, and by this I mean it incorporated things men wanted to do in a weight loss group, how would you feel if someone invited you along?
46. Who would you turn to for support? Do others turn to you for support? (men?)
47. In what way do you want to provide support, and is this different to the way that you do provide support?
48. What are your thoughts on exercising along with men?
49. What role do you as a woman play in the weight loss efforts, efforts to be more active or efforts to eat more healthily (if have a male partner/husband).
50. Do you have any thoughts on how men could be supported to lose weight by their partners or friends?

*Those are all the questions I have, do you have anything you'd like to add?*

## 15.Full approval for Study 1 granted by Oxford Brookes UREC



Dr Catherine Kerr  
Reader in Nutrition / Director of Studies  
Department of Sport and Health Sciences  
Faculty of Health and Life Sciences  
Oxford Brookes University  
Gipsy Lane  
Headington Campus

24 March 2015

Dear Dr Kerr

**UREC Registration No: 150910**

**A qualitative exploration of the views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity among an overweight and obese (BMI 28-40 kg/m<sup>2</sup>) male adult population**

Thank you for the email of 20 March 2015 outlining the response to the points raised in my previous letter about the PhD study of your research student Kimberley Harcourt and attaching the revised documents. I am pleased to inform you that, on this basis, I have given Chair's Approval for the study to begin.

The UREC approval period for this study is two years from the date of this letter, so 24 March 2017. If you need the approval to be extended please do contact me nearer the time of expiry.]

Should the recruitment, methodology or data storage change from your original plans, or should any study participants experience adverse physical, psychological, social, legal or economic effects from the research, please inform me with full details as soon as possible.

Yours sincerely

Hazel Abbott  
Chair of the University Research Ethics Committee

cc Kimberley Harcourt, Research Student  
Dido Green, Research Ethics Officer  
Jill Organ, Research Degrees Team  
Louise Wood, UREC Administrator

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## 16. Full ethical approval for Study 2



Dr Catherine Kerr  
Director of Studies  
Department of Sport and Health Sciences  
Faculty of Health and Life Sciences  
Oxford Brookes University  
Gipsy Lane  
Headington

29 October 2015

Dear Dr Kerr

**UREC Registration No: 150957**

**Women's views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity in relation to male weight loss attempts**

Thank you for the email of 24 October 2015 outlining the response to the points raised in my previous letter about the PhD study of your research student [Kimberley Harcourt](#), and attaching the revised documents. I am pleased to inform you that, on this basis, I have given Chair's Approval for the study to begin.

The UREC approval period for this study is two years from the date of this letter, so 29 October 2017. If you need the approval to be extended please do contact me nearer the time of expiry.

Should the recruitment, methodology or data storage change from your original plans, or should any study participants experience adverse physical, psychological, social, legal or economic effects from the research, please inform me with full details as soon as possible.

Yours sincerely

A handwritten signature in blue ink, appearing to read "S Quinton".

Dr Sarah Quinton  
Chair of the University Research Ethics Committee

cc. [Kimberley Harcourt](#), Research Student  
Dido Green, Research Ethics Officer  
Jill Organ, Research Degrees Team  
Louise Wood, UREC Administrator



[www.brookes.ac.uk](http://www.brookes.ac.uk)



# Men - get paid to give your views on diet, exercise, obesity and diabetes

If you are male, aged 18 - 60, Body Mass Index (BMI) between 24 and 40 kg/m<sup>2</sup>, and living in Gloucestershire, you may be eligible to take part!

A new research study by Oxford Brookes University requires men living Gloucestershire to give their views to the researcher for about 45 minutes on obesity, type 2 diabetes, diet and exercise. Time and location arranged to suit you.

**Your travel expenses will be reimbursed up to £5 and you will ALSO receive a £15 Amazon or book voucher for your time.**

*Study title: "A qualitative exploration of the views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity among a healthy weight, overweight and obese (BMI 24-40 kg/m<sup>2</sup>) male adult population"*

OXFORD  
**BROOKES**  
UNIVERSITY

E-mail [14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk)

tweet [@kimmyharcourt](https://twitter.com/kimmyharcourt) or

call 01865 483283 for more info

18. Recruitment poster for qualitative study with women  
(Study 2)

# Ladies!

OXFORD  
**BROOKES**  
UNIVERSITY

**Are you:**

18-60 years old?  
Living in  
Gloucestershire?  
Have a partner  
/close friend who's  
talking about losing  
weight?

*New research study*  
**needs women's views**  
on diets, exercise, type  
2 diabetes and obesity  
in relation to male  
weight loss



**£15 voucher for joining in + up  
to £5 for travel expenses!**

For more info, contact Kim:

[14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk)

**Twitter: @kimmyharcourt**

**018265 483283**

**Study title:**

"Women's views, attitudes and knowledge surrounding  
obesity, type 2 diabetes, diet and exercise in relation to  
male weight loss attempts "

**Come and talk to me for about 50 minutes,  
at a time and location convenient to you.**

## 19. Participant information sheet for Study 1



Primary Investigator: Dr Catherine Kerr  
Researcher: Kimberley Harcourt

Contact details

Oxford Brookes University. Department of  
Sport and Health Sciences

[Catherine.kerr@brookes.ac.uk](mailto:Catherine.kerr@brookes.ac.uk)

[14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk)

Address: Functional Food Centre, Department  
of Life Science, Oxford Brookes University,  
Gypsy Lane, Oxford, OX3 0BP, UK  
T: 01865 483283

### **PARTICIPANT INFORMATION SHEET**

*A qualitative exploration of the views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity among a healthy weight, overweight and obese (BMI 24-40 kg/m<sup>2</sup>) male adult population*

**Dear Participant,**

This information sheet is designed to help you decide whether you would like to participate in a new study being run by a PhD student from Oxford Brookes. Before you decide to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

### **Why is the study being run?**

The percentage of people who are obese, or have type 2 diabetes in Gloucester is much higher than that of other towns in England.

Overweight, obesity and type 2 diabetes can have a negative impact on quality of life but may be improved by diet and exercise. This study seeks to explore what is known about obesity and type 2 diabetes, by men who are overweight or at risk of being overweight, and who do not have type 2 diabetes. We are interested to know what these men believe the links between weight, type 2 diabetes, diet and exercise might be. We will also try to work out what diet and what exercise strategies may be more appropriate to these men wishing to lose weight. Results from this study will be used to design a future diet and exercise study tailored just to the health-needs of men. We are looking for 40 men to talk to the researcher, one-to-one.

### **Why have I been invited to participate?**

We are looking for men who fulfil the following inclusion criteria:

All men will:

- Have a body mass index (BMI) of 24-40 kg/m<sup>2</sup> *Your BMI score is your weight (kilograms) divided by height (metres) x height (metres)*
- Be aged 18 – 60 years
- Have weighed roughly the same for the past 6 months (slight increases are ok) and not be currently dieting
- Be living in Gloucestershire

*You will not be able to take part if any of the following apply:*

- *You have any form of diabetes*
- *You have heart, renal, joint or metabolic disease*
- *You are a smoker*

- *You have a respiratory disease controlled with medication*

### **What will happen to me if I take part?**

Your involvement would be one session, talking 1:1 with Kimberley Harcourt (PhD research student). Our talk would be audio recorded and will last about 50 minutes and will take place in an agreed private place such as a café, library, community centre, seating area. I have a questionnaire I'd be grateful if you could fill in too, it asks a couple of questions about your education, where you live, your age, employment status and marital status. I'm collecting this data as am keen to see where people who are taking part live, what the areas is like that they live in, in terms of health deprivation, and whether their marital status has an impact on the support they would like or receive. There are no right or wrong answers – it is not a test! Sadly there will not be time to return your transcript to you, for you to read and re-visit what we talked about. What you say may be quoted in the write-up, but your name or postcode will not be linked to this quote. It would be reported as being said by your participant number, for example, “participant 1”. All data will be kept confidential and anonymous, subject to legal limitations.

Your travel costs up to £5 will be covered and you will get a £15 book or Amazon voucher for your time at the end of our talk.

### **Are there any risks involved?**

There are no known risks involved. You will be advised to seek advice from your GP or community nurse if our talk raised concerns about your health which they would like to address.

**Do I have to participate?**

No, your participation is voluntary. You are also free to withdraw at any time before, during or after the interview without reason.

**Will data be kept confidential?**

Yes. Your name will not be made available to anyone outside of the research team. You will be assigned a participant number when you participate and will be referred to only by this. What you say will be anonymised and will not be linked to your name. All paper documents will be kept securely in a locked filing cabinet and electronic copies of documents kept securely on the University server at Oxford Brookes University and will be kept for 10 years. All data will remain confidential, subject to legal limitations.

**What are the benefits of taking part?**

The information from the interviews will help we talk about will help the PhD research student design a future study specifically for men to help them lose weight through diet and exercise.

**How do I take part?**

If you have read the information sheet and are happy to join in, please contact Kimberley Harcourt [14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk) or call on: 01865 483283 (you may need to leave a message for Kimberley to call you back). A time and a place will be agreed between us to meet, you will re-read this form, sign the consent form if happy to join in, and we will do the interview. This should take no longer than an hour.

**What if I change my mind about joining in after handing in my consent form?**

You are free to withdraw from the study at any point and you do not need to give a reason why. If you decide to withdraw your data before

it has been included in analysis, then you may do so up to two weeks after your interview has taken place.

**Who is running the study?**

Kimberley Harcourt is running the study, under the supervision of Dr Catherine Kerr, Oxford Brookes University.

**Who has approved this study?**

The University Research Ethics Committee at Oxford Brookes have approved this research. The approval number can be found on the bottom of all documents involved with the research. If you have any ethical concerns about this study, you can contact the Chair of the University Research Ethics Committee at Oxford Brookes [ethics@brookes.ac.uk](mailto:ethics@brookes.ac.uk). All other general inquiries should be directed to Kimberley Harcourt [14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk)

**Thank you**

Thank you for your interest in this study and for taking the time to read this information sheet.

**Date**

October 2015

Oxford Brookes Ethics approval number: 150910

## 20. Participant information sheet for Study 2



Primary Investigator: Dr Catherine Kerr  
Researcher: Kimberley Harcourt

Contact details: Oxford Brookes University, Department of Sport and Health Sciences

[Catherine.kerr@brookes.ac.uk](mailto:Catherine.kerr@brookes.ac.uk)

[14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk)

Address: Functional Food Centre, Department of Life Science, Oxford Brookes University, Gipsy Lane, Oxford, OX3 0BP, UK

T: 01865 483283

### PARTICIPANT INFORMATION SHEET

*Women's views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity with regards to male weight loss experiences or attempts.*

Dear Participant,

This information sheet is designed to help you decide whether you would like to participate in a new study being run by a PhD student from Oxford Brookes as a part of her PhD research. Interviews will take place in Gloucestershire. Before you decide to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

#### Why is the study being run?

The percentage of people who are obese, or have type 2 diabetes in Gloucester is much higher than that of other towns in England. Overweight, obesity and type 2 diabetes can have a negative impact on quality of life but may be improved by diet and exercise. This study seeks to explore what is known about obesity and type 2 diabetes, by women who are a range of sizes, and who do not have type 2 diabetes. We are interested to know what women believe the links between weight, type 2 diabetes, diet and exercise might be. We will also discuss which diet and exercise strategies may be more appropriate to women of various sizes and for people wishing to lose weight, and whether you have any prior experience of supporting a male in a weight loss attempt. Results from this study will be used to design a future exercise study tailored to meet these needs. We are looking for about 15 women to participate.

#### Why have I been invited to participate?

We are looking for women who fulfil the following inclusion criteria:

- ✓ Have been partnered or close friends with a male who has considered losing weight, who has attempted losing weight or who is currently undertaking weight loss
- ✓ Be aged 18 – 60 years
- ✓ Be living in Gloucestershire

#### What will happen to me if I take part?

Your involvement would be one informal face-to-face interview session with Kimberley Harcourt (PhD research student). What we discuss would be audio recorded and will last about 50 minutes and will take place somewhere such as a café, community centre, park, or other public area. While this is a public area, somewhere more discrete will be chosen where there is less chance of our conversation being over-heard. There are no right or wrong answers – it is not a test! I also have a short questionnaire (mostly tick boxes on a sheet) that I'd be grateful if you could complete please. They relate to your Body Mass Index (BMI), age, marital status, employment status, where you live and your education level. These questions are to help me understand better who the support for men is coming from (you), what kind of area you are living in as location can have an impact on weight status and health and what education level you are at as education level and weight status have been linked. The audio recording will be transcribed word-for-word and what you say may be quoted in the write-up, but this will be anonymous, and your name will not be linked to this quote. It would be reported as being said by your participant number, for example, "participant 1".

Body Mass Index can be calculated by dividing your weight (kg) by your height x height (m x m) or online at <http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx>



Your travel costs up to £5 may be covered and you will get a £15 book or Amazon voucher for your time.

**Are there any risks involved?**

There are no known risks involved. You will be advised to seek advice from your GP or community nurse if our talk raised concerns about your health which they would like to address. If you'd like more information or support after the interview, you could also visit the NHS Choices website: [www.nhs.uk](http://www.nhs.uk)

**Do I have to participate?**

No, your participation is voluntary. You are also free to withdraw at any time before, during or after the interview without reason.

**Will data be kept confidential?**

Yes. Your name will not be made available to anyone outside of the research team. You will be assigned a participant number when you participate and will be referred to only by this. What you say will be anonymised and will not be linked to your name. Paper forms and electronic documents will be kept securely in a locked filing cabinet or securely on the University server at Oxford Brookes University and will be kept for 10 years. As sample size is small, this may have implications for anonymity. Data will remain completely confidential and anonymous, subject to legal limitations.

**What are the benefits of taking part?**

The information from the interviews will help we talk about will help the PhD research student design a future study specifically for men and women to help them lose weight through diet and exercise. **How do I take part?**

If you have read the information sheet and are happy to join in, please contact Kimberley Harcourt [14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk), or if you cannot email, tweet [@kimmyharcourt](https://twitter.com/kimmyharcourt) on twitter or call 01865 483283 (you may need to leave a message for Kimberley to call you back). A time and place will be arranged for us to meet, where you will re-read this form, sign the consent form, complete the questionnaire and we will do the interview. This should take no longer than an hour.

**What if I change my mind about joining in after handing in my consent form?**

You are free to withdraw from the study at any point and you do not need to give a reason why. If you decide to withdraw your data before it has been included in analysis, then you may do so up to two weeks after your interview has taken place.

**Who is running the study?**

Kimberley Harcourt is running the study, under the supervision of Dr Catherine Kerr, Oxford Brookes University. The study contributes towards her PhD and that anonymous findings may be published in her thesis and in other publications such as scientific journals.

**Who has approved this study?**

The University Research Ethics Committee at Oxford Brookes University has approved this research. The approval number can be found on the bottom of all documents involved with the research (this form and the consent form). If you have any ethical concerns about this study, you can contact the Chair of the University Research Ethics Committee at Oxford Brookes [ethics@brookes.ac.uk](mailto:ethics@brookes.ac.uk). All other general inquiries should be directed to Kimberley Harcourt [14087987@brookes.ac.uk](mailto:14087987@brookes.ac.uk)

**Thank you**

Thank you for your interest in this study and for taking the time to read this information sheet.

**Date and Ethics approval number**

October 2015. Approval number: 150957

## 21.Consent form for Study 1



Principal Investigator: Dr Catherine Kerr  
Researcher: Kimberley Harcourt.  
Department of Sport and Health Sciences, Oxford Brookes  
University.  
E-mail: [kimberley.harcourt-2014@brookes.ac.uk](mailto:kimberley.harcourt-2014@brookes.ac.uk)  
[catherine.kerr@brookes.ac.uk](mailto:catherine.kerr@brookes.ac.uk)  
Functional Food Centre, School of Life Sciences, Oxford Brookes  
University, Gipsy Lane, Oxford, OX3 0BP, UK  
T: 01865 483283

### Consent form

***A qualitative exploration of the views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity among a healthy weight, overweight and obese (BMI 24-40 kg/m<sup>2</sup>) male adult population***

Please  
initial

**Please read the statements below and initial boxes if you agree with them:**

1. I have read and understood the participant information sheet and understand this is a research project being conducted at Oxstalls Campus, University of Gloucestershire.
2. I have had the opportunity to ask any questions about the study and have received satisfactory answers
3. I understand my participation is voluntary. I understand I am free to withdraw from the study at any point and that my data may be withdrawn up to the point of inclusion in analysis
4. I understand my data will be anonymised and no identifying information made available about me
5. I agree to take part in the study.

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Please print name, sign and date

NAME OF PARTICIPANT \_\_\_\_\_

SIGNATURE OF PARTICIPANT \_\_\_\_\_  
DATE \_\_\_\_\_

NAME OF RESEARCHER \_\_\_\_\_

SIGNATURE OF RESEARCHER \_\_\_\_\_  
DATE \_\_\_\_\_

Oxford Brookes ethics approval number: 150910

## 22. Consent form for Study 2



Principal Investigator: Dr Catherine Kerr  
Researcher: Kimberley Harcourt.  
Department of Sport and Health Sciences, Oxford Brookes  
University.  
E-mail: [kimberley.harcourt-2014@brookes.ac.uk](mailto:kimberley.harcourt-2014@brookes.ac.uk)  
[catherine.kerr@brookes.ac.uk](mailto:catherine.kerr@brookes.ac.uk)  
Functional Food Centre, School of Life Sciences, Oxford Brookes  
University, Gipsy Lane, Oxford, OX3 0BP, UK  
T: 01865 483283

### Consent form

*Women's views, attitudes and knowledge of obesity, type 2 diabetes, diet and physical activity in relation to male weight loss attempts.*

**Please read the statements below and initial boxes if you agree with them:**

1. I have read and understood the participant information sheet and understand this is a research project being conducted in Gloucestershire
2. I have had the opportunity to ask any questions about the study and have received satisfactory answers
3. I understand my participation is voluntary. I understand I am free to withdraw from the study at any point and that my data may be withdrawn up to the point of inclusion in analysis
4. I understand my data will be anonymised and no identifying information made available about me, subject to legal limitations
5. I agree to take part in the study.

Please  
initial

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Please print name, sign and date

NAME OF PARTICIPANT \_\_\_\_\_

SIGNATURE OF PARTICIPANT \_\_\_\_\_ DATE \_\_\_\_\_

NAME OF RESEARCHER \_\_\_\_\_

SIGNATURE OF RESEARCHER \_\_\_\_\_ DATE \_\_\_\_\_

Oxford Brookes ethics approval number: 150957

## 23. Short demographic questionnaire for both qualitative studies (Study 1 and Study 2)

Participant number \_\_\_\_\_

1. Date of birth: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

BMI \_\_\_\_\_

2. Marital status

- Married, in a civil partnership or cohabiting
- Divorced
- Widowed
- Single

3. Postcode (*please provide full post code*)

\_\_\_\_\_

4. Education level

Please tick the highest level completed

- No qualification
- Below level 2 (less than 5 GCSEs)
- Above Level 2 (more than 5 GCSEs)
- NVQ or equivalent
- A Level
- University degree
- Post-graduate University degree
- Other
- Prefer not to say

5. Employment status

- Employed full-time
- Employed part-time
- Unemployed

## 24. Anonymised example of field notes kept in reflexive diary

Male XX

Divorced so very hard / unsure how to approach the topic of female involvement or influences on weight status. Very chatty and talks about sports a lot and also portion sizes, plate sizes. The participant makes the researcher feel very uncomfortable by graphically describing major surgery he had at a young age. He seems to fill his spare time with sport. I wonder how active he was with a spouse?

Female XX

Self blaming. Body posture changes whenever we talk about her husband's weight. She looks very worried? She hunches and leans forward and makes her body "smaller". She talks about her grown up sons and how she relies on one of the sons for information (about health, etc). Seems frustrated that her partner won't exercise with her (despite both having a gym pass for the same gym) but seems resigned to the fact that he will exercise with his sons if they're home. They play a sport she can't play, so she doesn't or can't join in? Jealousy?

Male XX

Younger adult, sometimes talked off topic, went off at a tangent and forgot what the question was so I had to repeat it. Talks about parental influence but also girlfriend influence.

Female XX

Hard to talk about her very recent break up. She didn't mention this when we decided she was eligible for the study. She doesn't seem too bitter though or upset but I recommended NHS choices if she felt like she needed advice/to talk to someone about what we discussed. Feels like she was the motivator for exercise when in a couple with her now ex. She seems happy and proud of this. Very smiley and chatty, perhaps she needed a stranger to talk to about her now ex?

25. Braun and Clarke 15 steps to qualitative data analysis  
(Braun and Clarke, 2006, p96)

Process	No.	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for “accuracy”
Coding	2	Each data item has been given equal attention in the coding process
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive
	4	All relevant extracts for all each theme have been collated
	5	Themes have been checked against each other and back to the original data set
	6	Themes are internally coherent, consistent, and distinctive
Analysis	7	Data have been analysed – interpreted, made sense of- rather than just paraphrased or described
	8	Analysis and data match each other – the extracts illustrate the analytic claims
	9	Analysis tells a convincing and well-organised story about the data and topic
	10	A good balance between analytic narrative and illustrative extracts is provided
Overall	11	Enough time has been allocated to complete all phrases of the analysis adequately, without rushing a phase or giving it a once-over-lightly
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated
	13	There is a good fit between what you claim to do, and what you show you have done -i.e. described method and reported analysis are consistent
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis
	15	The researcher is positioned as <i>active</i> in the research process; themes do not just “emerge”