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The Development and Evaluation of a Holistic Approach to Obesity Management for Primary Care Nurses

Jennifer E Brown

A Thesis submitted in partial fulfilment of the requirements of

The Robert Gordon University

For the degree of Doctor of Philosophy

August 2008



DECLARATION

I, the undersigned, declare that this thesis has been constructed entirely by me. The original work, of which this is a record, has not been accepted on any previous application for a degree and was done by me. All sources of information have been specifically acknowledged.

Signed

Date

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Firstly, I am very grateful to all the participants for making this research possible. The contribution of many individuals who had problems with their weight was invaluable. I am also particularly indebted to those practice nurses who gave so willingly of their expertise and time to carry out part of the study and share their experiences.

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Abstract

The prevalence of obesity ($\text{BMI} \geq 30 \text{ kg/m}^2$) in the Scottish population is rising at an alarming pace. The health implications for those affected and the lack of sustained success in treatment, demands that new strategies be explored to improve patient outcomes (Harvey et al. 2005). Primary care nurses appear well placed to address obesity management. Therefore, the aim of this research was to develop and evaluate an evidence based, holistic, person centred approach to management, which was relevant to both professionals and those who are obese.

A conceptual framework was developed to encompass the physical, social and emotional components of weight management in conjunction with the nursing models of Roper, Logan and Tierney and Peplau. The approach used mixed methods of data collection, which was carried out in two phases. Outcomes from the initial exploratory, longitudinal survey phase, involving 64 outpatients attending a specialist obesity clinic, showed that physical, social and emotional factors, in conjunction with beliefs about weight management are interrelated.

Evidence from the exploratory phase contributed to the development of materials for the intervention phase which was implemented in primary care by nine practice nurses (PNs) who recruited 28 obese individuals for a three month period. Methods of data collection included questionnaires, booklets, field notes and interviews.

The key findings of this study confirmed that obesity is complex and a holistic, person centred approach to weight management through partnership working between nurses and obese individuals can be effective. While PNs have a key role to play in obesity management they recognised their need for appropriate tools and education to help individuals towards self-management. The results also suggested that nurses and individuals who took ownership of this approach had successful outcomes in terms of weight loss.

TABLE OF CONTENTS

	Page
Title Page	
Declaration	
Acknowledgements	
Abstract	i
Table of Contents	iii
List of Tables	xi
List of Figures	xii
List of Abbreviations	xiv
List of Appendices, bound in publications and booklets	xv
CHAPTER 1 Introduction	1
1.1 Obesity and health	3
1.1.1 Health benefits of weight loss	6
1.1.2 Cultural beliefs about weight change	8
1.2 The prevalence of obesity	9
1.3 The cost of obesity	10
1.4 Obesity management and research	11
1.4.1 Approaches to obesity management	12
1.5 Obesity management and nursing education	13
1.6 Obesity management and the role of the nurse	15
1.7 Self management in obesity	18
1.8 Synopsis of the thesis structure	19
CHAPTER 2 Developing a holistic approach to obesity management – literature review	22
2.1 Literature review	22
2.2 Holism	25
2.3 Holism and nursing practice	26
2.4 Nursing and obesity management	27

2.4.1	Interpersonal relations in nursing	28
2.4.1.1	Orientation	30
2.4.1.2	Identification	31
2.4.1.3	Exploitation	31
2.4.1.4	Resolution	31
2.4.2	Activities of living	32
2.5	Exploring weight management requirements	34
2.5.1	Psychobiological approach to obesity	34
2.5.2	Attribution theory	37
2.5.3	Social support theory	40
2.5.4	Energy intake	43
2.5.5	Energy expenditure	46
2.5.6	Weight control beliefs	49
2.5.7	Physical well-being	52
2.5.8	Social well-being	55
2.5.9	Emotional well-being	59
2.6	Application of the literature to a conceptual framework	63
2.7	Overall study aim	66
2.7.1	Aims of the exploratory phase	66
2.7.1.1	Objectives	66
2.7.2	Aims of the intervention phase	67
2.7.2.1	Objectives	67
CHAPTER 3	The research design for a holistic approach to weight management	68
3.1	Research paradigms and rationale	68
3.2	Exploratory phase	72
3.3	Questionnaire design	74
3.3.1	Demographic information	74
3.3.2	Questions on the physical aspects of weight management	74
3.3.3	Questions on the social aspects of weight management	76
3.3.4	Questions on the emotional aspects of weight management	76
3.3.5	Face validity and internal consistency/ Quality assurance in research design	78
3.4	Pilot study for the exploratory phase	78
3.5	Exploratory phase	80
3.5.1	Sample	80

3.6	Exploratory phase data analysis	81
3.6.1	Primary analysis	81
3.6.2	Secondary analysis	82
3.6.3	Tertiary analysis	83
3.7	Interpretative phase	83
3.7.1	Nurse booklet	84
3.7.2	Individual booklet	84
3.7.3	Cover design	85
3.7.4	Question design	85
3.7.5	Weight management map	86
3.7.6	Goal setting	87
3.8	Intervention phase	88
3.8.1	Accessing nurses	90
3.8.2	Data collection	91
3.8.3	Questionnaires	92
3.8.4	Interviews	93
3.8.5	Carrying out the interviews	94
3.9	Intervention phase data analysis	95
3.9.1	Concurrent data analysis	97
3.10	Ethical considerations	98
3.10.1	Exploratory phase ethical considerations	99
3.10.2	Intervention phase ethical considerations	100
3.11	Researcher's reflections	101
 CHAPTER 4	 Generating the evidence to develop a holistic approach to weight management	 104
4.1	Sampling	105
4.2	General demographic information	106
4.2.1	Perceived reasons for onset of weight problem	109
4.2.2	Family history of weight problems	109
4.3	Physical aspects of weight management	110
4.3.1	Co-morbidities	111
4.3.2	Symptoms	112
4.3.3	Functional ability	114
4.3.4	Leisure activity	115

4.4	Emotional aspects of weight management	115
4.4.1	Body satisfaction	116
4.4.2	Feelings	116
4.4.3	Anxiety and depression	118
4.5	Social aspects of weight management	120
4.5.1	Social support	120
4.6	Beliefs about weight management	123
4.7	Expectations of weight change	125
4.8	Weight change	126
4.8.1	Categorization of weight change groups	126
4.8.2	Demographic aspects of weight change groups	127
4.8.3	Group allocation	127
4.9	Physical aspects of weight change	129
4.9.1	Co-morbidities of weight change	129
4.9.2	Symptoms and functional ability in the weight gain group	129
4.9.3	Symptoms and functional ability in the 0-5% weight loss group	130
4.9.4	Symptoms and functional ability in the >5% weight loss group	131
4.9.5	Physical activity changes in the weight gain group	134
4.9.6	Physical activity changes in the 0-5% weight loss group	134
4.9.7	Physical activity changes in the >5% weight loss group	134
4.9.8	Group differences in physical activity levels	135
4.10	Social aspects of weight change	136
4.10.1	Perceived levels of social support in the weight gain group	136
4.10.2	Perceived levels of social support in the 0-5% weight loss group	137
4.10.3	Perceived levels of social support in the >5% weight loss group	138
4.11	Emotional aspects of weight change	140
4.11.1	Negative and positive feelings in the weight gain group	140
4.11.2	Negative and positive feelings in the 0-5% weight loss group	141
4.11.3	Negative and positive feelings in the >5% weight loss group	142
4.11.4	Group differences in negative and positive feelings	142
4.11.5	Anxiety and depression levels in the weight gain group	143
4.11.6	Anxiety and depression levels in the 0-5% weight loss group	143
4.11.7	Anxiety and depression levels in the >5% weight loss group	144
4.11.8	Group differences in anxiety and depression levels	144
4.12	Summary	145

CHAPTER 5	Integrating the evidence for a holistic approach into practice in primary care	148
5.1	The individual's perspectives of weight management	148
5.1.1	Physical well-being	148
5.1.1.1	Symptoms and physical well-being	149
5.1.2	Social well-being	152
5.1.3	Emotional well-being	152
5.1.3.1	Stigma and emotions	153
5.1.3.2	Stress and negative emotions	154
5.1.3.3	Beliefs and emotions	155
5.2	Incorporating the evidence in the booklet for individuals	156
5.3	Facilitating nurse education	157
5.4	Integrating the evidence into practice	159
CHAPTER 6	Implementation and outcomes of the holistic approach to weight management in primary care	161
6.1	Nurse recruitment	162
6.1.1	Geographical spread	162
6.1.2	Background information of nurses	163
6.2	Recruitment of individuals	165
6.2.1	Background information of individuals	166
6.3	PN role in primary care	172
6.3.1	Support and education for role development	173
6.3.2	Support for obesity management in practice	174
6.3.3	Obesity education for PNs	176
6.3.4	Educational influences on PNs approach to obesity management	177
6.4	Support for implementing the holistic approach to weight management	179
6.5	Contextual influences on implementing the holistic approach to weight management	180
6.5.1	Autonomy	181
6.5.2	Negotiation	183
6.5.3	Bending the rules	184

6.6	Barriers to weight management	185
6.6.1	Motivation	186
6.6.2	Not ready	189
6.6.3	Can't cope	190
6.6.4	Too deep	191
6.6.5	Blamed by others	192
6.6.6	Self-blame	193
6.7	Partnership	196
6.7.1	Realisation	197
6.7.2	Identifying the problems	198
6.7.3	Reflection	200
	6.7.3.1 Facilitating reflection/empowerment	201
	6.7.3.2 Self-reflection/empowerment	203
6.7.4	Knowing the individual	204
6.7.5	Self-awareness	206
6.7.6	Responsibility	207
6.8	Practice comparison in context	210
6.8.1	Practice G	211
6.8.2	Practice B	217
6.9	Filling the void in weight management	226
6.9.1	Time issues	227
6.9.2	Fear of the unknown	228
6.9.3	Credibility of the materials	229
6.9.4	Changing practice	230
6.9.5	Working in partnership	232
6.9.6	Taking a holistic approach	232
6.9.7	Not for everyone	233
6.9.8	Future use	234
5.10	Applicability of the conceptual model	220
CHAPTER 7	Discussion of the relevance of a holistic approach to weight management in primary care	236
7.1	The relevance of taking a holistic approach	236
7.1.1	The effectiveness of the holistic approach in terms of weight change	236
7.1.2	Identifying parts of the whole	238

7.2	Putting the holistic approach to weight management into practice	240
7.2.1	Booklet for holistic care	241
7.2.1.1	Weight management map	241
7.2.1.2	Goal and action planning	243
7.2.1.3	Written plans	243
7.3	Experience of using the intervention	245
7.4	Education and support	247
7.4.1	Outreach visits	248
7.4.2	Education and attitudes	249
7.5	The role of the nurse in primary care	251
7.5.1	Obesity management in primary care	251
7.6	Partnership	255
7.6.1	Nurse self-awareness	255
7.6.2	Knowing	256
7.6.3	The power balance	257
7.6.4	Empowerment through partnership	258
7.7	Self management	258
7.7.1	Individual empowerment	259
7.7.2	Towards self-management	259
7.8	Practical aspects of implementing the holistic approach	261
7.9	Conclusions	264
CHAPTER 8	Conclusions, limitations and recommendations	267
8.1	Conclusions	267
8.1.1	Aims and objectives revisited	267
8.1.1.1	The objectives of the exploratory phase	268
8.1.1.2	The objectives of the intervention phase	269
8.1.2	The applicability of the conceptual framework	271
8.1.3	The effectiveness of the holistic approach for PNs	273
8.1.3	Support for implementing the holistic approach	275
8.2	The utility of the materials provided for the holistic approach	275
8.2.1	Booklet for individuals	275
8.2.1.1	Weight management map	275
8.2.1.2	PN booklet and practical materials	277
8.3	Overall conclusions	277

8.4	Methodological issues and limitations	279
8.4.1	Limitations of the exploratory phase	279
8.4.2	Limitations of the intervention phase	280
8.5	Implications and recommendations for practice	282
8.6	Recommendations for continuing professional development for nurses	283
8.7	Recommendations for further research	284
8.8	Dissemination strategies	284
	REFERENCES	286

LIST OF TABLES

	Page
Table 1.1 Classification of body mass index (BMI) and severity of co-morbidity risk	4
Table 1.2 Waist circumference level of risk for men and women	4
Table 1.3 The health risks associated with adult obesity	5
Table 3.1 Table of data collection methods for individuals and practice nurses	91
Table 4.1 Table of recruitment for males and females	105
Table 4.2 Table of Spearman's rho correlations of symptoms with sleep, body pain and skin problems	113
Table 4.3 Table of significant correlations between mobility problems, poor sleep, breathlessness and body pain in weight change	132
Table 6.1 Table of the years qualified, years in primary care, age group, hours worked per week and number of diplomas for each recruited nurse	164
Table 6.2 Table of individuals approached and recruited by nurses, booklets and questionnaires returned by individuals, and physical parameters taken by nurses	165
Table 6.3 Table showing the number of co-morbidities per individual for the exploratory and intervention phases	168
Table 6.4 Table showing the number of previous attempts at weight loss by male and female	169
Table 6.5 Weight Management Map for Q01	199
Table 6.6 Action Map for R01	203
Table 6.7 Table of background information for nurses B and G	210
Table 6.8 Action Maps for G01, G02 and G03	215
Table 6.9 Before and after Weight Management Maps for B02	223

LIST OF FIGURES

	Page
Figure 2.1	Conceptual framework for intervention and outcome 65
Figure 3.1	Diagram of the research process 70
Figure 3.2	Analysis framework for the intervention phase data 96
Figure 4.1	Clustered bar chart showing the percentage of males and females in each BMI category 107
Figure 4.2	Clustered bar chart showing the distribution of age range for males and females 108
Figure 4.3	Clustered bar chart showing the number of family members identified by male and female respondents as having weight problems 110
Figure 4.4	Pie charts of the prevalence of obesity related co-morbidities for males and females 111
Figure 4.5	Clustered bar charts showing the levels of anxiety and depression for males and females 119
Figure 4.6	Clustered bar chart showing the numbers of individuals allocated to the groups of weight gain, 0-5% body weight loss and >5% body weight loss by gender 128
Figure 4.7	Clustered bar chart showing mean score changes for symptoms by group 133
Figure 4.8	Clustered bar chart showing changes in different physical activities for each group between visits 1 and 3 135
Figure 4.9	Clustered bar chart of mean differences in perceived support scores between visits 1 and 3 for each group 139
Figure 4.10	Line chart of mean rank scores for family, friends, colleagues, professionals and community support for each group at visit 3 140
Figure 4.11	Clustered bar chart showing changes in feelings for each group between visits 1 and 3 143

Figure 4.12	Clustered bar chart of mean differences in anxiety and depression scores between visits 1 and 3 for each group	144
Figure 4.13	Changes between groups	147
Figure 6.1	Clustered bar chart showing distribution of age range of males and females	166
Figure 6.2	Clustered bar chart showing the number of males and females in each BMI category	167
Figure 6.3	Pie chart showing the number of individuals having each co-morbidity	168
Figure 6.4	Clustered bar chart showing the number of strategies employed by individuals in previous attempts at weight loss and the professionals they consulted by male and female	170
Figure 6.5	The percentage of individuals who gained weight, lost 0-5% and >5% of their body weight	171
Figure 6.6	The theme or role development and related categories of support and education, support for obesity management and obesity education	172
Figure 6.7	The categories of autonomy, negotiation and bending the rules in the theme of contextual influences	181
Figure 6.8	The categories of motivation, not ready, can't cope, too deep, blamed by others and self blame in the theme of barriers to weight management	185
Figure 6.9	The categories of realisation, identifying the problems, reflection, facilitating reflection for empowerment, self-reflection for empowerment, knowing the individual, self-awareness and responsibility in the theme of partnership	196
Figure 6.10	The categories of time issues, fear of the unknown, credibility of materials, changing practice, working in partnership, taking a holistic approach, not for everyone and future use in the theme of Filling the void	227

ABBREVIATIONS

BMI	Body Mass Index
SIGN	Scottish Intercollegiate Guidelines Network
GPs	General Practitioners
DAGOS	Dietitians Action Group on Obesity Scotland
PNs	Practice Nurses
RMR	Resting Metabolic Rate
HADS	Hospital Anxiety and Depression Scale
SPSS	Statistics Package for the Social Sciences
ANOVA	One-way Analysis of variance
TV	Television
SD	Standard Deviation
GMS	General Medical Services

APPENDICES

APPENDIX 1:	EXPLORATORY PHASE QUESTIONNAIRE EXPLORING THE ASSOCIATION BETWEEN FEELINGS AND WEIGHT MANGEMENT
APPENDIX 2:	PERMISSION LETTER FOR USE OF THE HADS
APPENDIX 3:	EXPLORATORY PHASE LETTER OF INVITATION TO INDIVIDUALS
APPENDIX 4:	CONTENTS LIST OF BOX OF MATERIALS
APPENDIX 5:	RECRUITMENT FLIER TO PRACTICE NURSES FOR THE INTERVENTION PHASE
APPENDIX 6:	BACKGROUND QUESTIONNAIRE FOR NURSES IN THE INTERVENTION PHASE
APPENDIX 7:	EVALUATION QUESTIONNAIRE FOR ‘MY PERSONAL APPROACH TO WEIGHT MANAGEMENT’
APPENDIX 8:	SHEET FOR RECORDING PHYSICAL PARAMETERS OF INDIVIDUALS IN THE INTERVENTION PHASE
APPENDIX 9:	CHARTS PROVIDED IN BOX OF MATERIALS FOR THE INTERVENTION PHASE
APPENDIX 10:	INTERVIEW SCHEDULE FOR NURSES WHO RECRUITED IN THE INTERVENTION PHASE
APPENDIX 11:	INTERVIEW SCHEDULE FOR NURSES WHO UNABLE TO RECRUIT FOR THE INTERVENTION PHASE
APPENDIX 12:	INFORMED CONSENT FOR THE EXPLORATORY PHASE
APPENDIX 13:	INFORMATION SHEET FOR THE EXPLORATORY PHASE
APPENDIX 14:	ETHICS APPROVAL LETTER FOR THE EXPLORATORY PHASE
APPENDIX 15:	ETHICS AMENDMENT APPROVAL
APPENDIX 16:	APPROVAL LETTER FROM RESEARCH AND DEVELOPMENT FOR THE INTERVENTION PHASE
APPENDIX 17:	DIAGRAM OF THE RESEARCH DESIGN FOR THE EXPLORATORY PHASE

APPENDIX 18: CORRELATIONS OF NEGATIVE FEELINGS FROM THE
EXPLORATORY PHASE

APPENDIX 19: CORRELATIONS OF POSITIVE FEELINGS FROM THE
EXPLORATORY PHASE

APPENDIX 20: REVISED 'MY ACTION PLAN' FOR THE BOOKLET 'MY
PERSONAL APPROACH TO WEIGHT MANAGEMENT

Chapter 1

Introduction

This thesis originated from a desire to develop a holistic nursing approach to obesity management. The researcher's interest in obesity management was stimulated through the experience of working as a nurse in both research and clinical practice within the National Health Service (NHS). This interest grew through increasing contact with individuals seeking treatment for their obesity. It appeared that these individuals often had numerous health problems associated with their weight.

It became apparent to the researcher that, in addition to the numerous health issues related to obesity, weight management in itself was a much more complex problem than at first appeared. This view was formulated via several avenues, namely, clinical practice, practice development, research and education. Initial realisation about the difficulties of weight management was gained through clinical practice while working as a research nurse for clinical drug trials for obesity and being part of what was then a very small specialist out-patient clinic team in the early 1990's. To gain a deeper understanding of the issues related to obesity management from the perspective of an obese individual the researcher undertook a psychology and counselling degree module. As the team grew to incorporate the disciplines of medicine, dietetics, psychology and surgery, greater insight into various aspects of the development and management of obesity was acquired through working as part of that multidisciplinary team.

The experience gained from practice was supplemented by a greater depth and breadth of knowledge ranging from animal research to human interventions for obesity through links with academic, scientific and research institutions. In addition, a global

perspective of obesity was obtained through multidisciplinary, national, and international obesity conferences. These practical and theoretical engagements suggested that obesity management is complex involving many different perspectives and knowledge sources. Furthermore, there appeared to be a dearth of successful interventions for people with obesity particularly for use by nurses. Further insight into how obesity management could be implemented into practice by nurses was accrued through taking the nursing lead in a national research programme in primary care. This programme challenged me to consider the needs of primary care nurses and obese individuals.

Previous experience also indicated that nurse education about obesity was lacking. Courses on obesity management are rare and any seminars which take place, generally only do so through the support of the pharmaceutical industry. Furthermore, the available literature, although increasing, tends to be focused primarily on diet. Therefore, there is a need for obesity education to have a nursing perspective and to have a broader base.

Furthermore, the patient's perspective was often not taken into account in planning care. For example, during clinical sessions patients often revealed feelings of self-criticism and low self-worth but were not addressed in their overall management. These disclosures suggested to the researcher a need for them to be addressed in practice in addition to traditional medical and dietary approaches. Taking a person-centred, holistic approach and addressing the interaction between physical, social and emotional aspects of obesity appeared relevant to addressing what is a complex problem. However, holistic care may be problematic to understand and enact as it focuses on the individual rather than their disease.

Through knowledge and experience gained by working with obese individuals the researcher has come to realise that for any intervention to be effective the practitioner must embrace a whole person approach for the enhancement of care. However, this approach must be viewed in the context of what is known about obesity.

This chapter now sets out to outline the health implications of obesity and the extent of the obesity problem particularly within the United Kingdom (UK). There will be emphasis on the Scottish context, where the research was carried out. The need to develop new interventions is highlighted, particularly in relation to the role of nurses in primary care. In addition, the feasibility of person centred, holistic approaches will be outlined.

1.1 Obesity and health

Obesity is considered to be a multi-factorial problem (NIH 1998; NICE 2006) which affects the health and well-being of individuals within society (NAO 2001; NICE 2006). Prior to examining the implications of obesity for health it is pertinent to define obesity. Obesity is usually defined in physical terms and occurs when energy intake exceeds energy expenditure on a regular basis resulting in excess body fat stores (Di Girolama et al. 2000). WHO (1998) classified obesity as a disease and defined it as “a condition of abnormal or excessive fat accumulation in adipose tissue to the extent that health may be impaired” (WHO 2002 p.4). The current accepted method of measuring obesity was developed by the Belgium statistician Adolphe Quetelet (1796-1874) (Eknoyan 2008) and was known as the Quetelet Index, now termed the Body Mass Index (BMI), which is calculated using the formula, weight in kilograms divided by height in metres squared (kg/m^2).

Once BMI has been determined, it is possible to classify individuals into categories ranging from underweight to morbid obesity. The World Health Organisation (WHO 1998), use this classification to determine whether or not an individual is obese and their level of health risk (See **Table 1.1** below)

Classification	BMI (kg/m²)	Risk of co-morbidities
Underweight	≥ 18.5	Low (but risk of other clinical problems increased)
Normal range	18.5-24.9	Average
Overweight	25.0-29.9	Mildly increased
Obese	≥30	
Class I	30-34.9	Moderate
Class II	35.0-39.9	Severe
Class III (morbid obesity)	≥40.0	Very severe

Table 1.1 *Classification of body mass index (BMI) and severity of co-morbidity risk.*

However, there are limitations to the use of BMI (Frankenfield et al. 2001). It does not distinguish between those who have excess adipose tissue and the well-developed muscle of trained athletes (Prentice and Jebb 2001). Furthermore, the suggested BMI classification of risk differs between ethnic groups. For example, the classification for overweight and obesity in the Asian community is lower than for Caucasians while for Pacific Islanders it is higher (International Diabetes Institute 2000). In addition to BMI, waist measurement is important in assessing the risk to health (WHO 1998) The following **table 1.2** indicates the level of risk for waist circumference.

	Increased risk	Substantial risk
Men	> 94 cms (37 in)	>102 cms (40 in)
Women	>80 cms (32 in)	> 88 cms (35 in)

Table 1.2 *Waist circumference level of risk for men and women.*

The relevance of obesity to health was recognized by Hippocrates (460-377BC) (Office of Health Economics 1994). He observed that sudden death occurred more frequently in the obese. Later, Athenaeos (230-170BC) the Greek historian and philosopher, reported what appeared to be sleep apnoea in relation to obesity (Michalopoulos et al. 2003). Michalopoulos et al. (2003) indicates that although obesity, at that time, was recognised as a health problem, its impact was primarily limited to the wealthier echelons of society Michalopoulos et al. (2003). In the present day, a greater understanding of the health impacts has emerged, allied to the escalating prevalence of obesity within society. While the general adult population is at risk of developing poorer health, the obese are at increased risk. The most prevalent health related conditions or co-morbidities are documented in **table 1.3** below, (adapted from WHO 1998). The table identifies the increased level of risk for the obese in the development of a broad range of co-morbidities.

Level of risk	Obesity related co-morbidities
Slightly increased	Cancer (Breast in postmenopausal women, endometrial, colon) Reproductive hormone abnormalities Polycystic Ovarian Syndrome Impaired Fertility Anaesthetic complications Foetal defects associated with maternal obesity
Moderately increased	Coronary Heart Disease Hypertension Osteoarthritis (knees and hips) Hyperuricaemia and gout
Greatly increased	Type II Diabetes Dyslipidaemia Metabolic Syndrome Gall Bladder Disease Breathlessness Sleep Apnoea

Table 1.3 *the health risks associated with adult obesity.*

In addition to the physical health risks listed in **table 1.3**, obesity is also associated with asthma, stroke, gastro-oesophageal reflux, lower extremity venous stasis, urinary stress incontinence (National Institutes of Health 1998). The National Institutes of Health (1998) also identified psychological disorders as co-morbidities such as poor self-esteem, depression, body dissatisfaction and disordered eating (Mulvihill and Quigley 2003). However, the National Institutes for Health (1998) obesity guidelines state that there is strong evidence of weight loss reducing the development of co-morbidity risk factors. They also stated that some existing obesity co-morbidities improve with weight loss.

1.1.1 Health benefits of weight loss

A systematic review undertaken for a Health Technology Assessment (Avenell et al. 2004) highlighted that to accrue health benefits need not entail huge weight loss. Like the Scottish Intercollegiate Guidelines Network (SIGN 1996) before them, Avenell et al. (2004) highlighted physical benefits of moderate weight loss. SIGN (1996) and Avenell et al. (2004) identified reductions in mortality rates, blood pressure, type II diabetes and cholesterol levels. The review by Avenell et al. (2004) underlined the benefits in that a 10kg weight loss gave a 6.1mmHg fall in systolic blood pressure and a 5% drop in total cholesterol. There were also benefits of weight loss for Type II diabetes. Two of the studies (Tuomilehto et al. 2001; Diabetes Prevention Program Research Group 2002) included in the systematic review demonstrated a 58% reduction in the risk of developing diabetes with a 5-7% weight loss. SIGN (1996) had previously indicated at least a 50% risk reduction with 10% weight loss. The accumulated evidence seems to suggest that moderate weight loss is more strongly associated with risk reduction than previously identified. The evidence therefore, points

towards physical health benefits being accrued with moderate weight reduction for those who are obese.

In addition to physical health in the obese, Larsson et al. (2002) recommended that mental well-being should be recognised. This recognition certainly appears warranted as Simon et al. (2006) estimated that obese individuals have a 20% elevated risk of depression compared to individuals of normal weight. However, the negative impact of obesity on mental well-being (Larsson et al. 2002) and psychosocial functioning (Karlsson et al. 2003) can be reversed with weight loss (Herpertz 2003).

It may be that, in addition to physical and mental well-being, social support is also relevant to obesity management. Social support not only aids weight loss (Gallagher et al. 2006) but also helps weight maintenance following weight loss (Kayman et al. 1990, Elfgah and Rossner 2005). However, a lack of support is less likely to result in weight loss (Lambert et al. 2005). Social support therefore appears to have both negative and positive effects on weight. Perhaps the relationship between social support and weight loss is bi-directional as (Herpertz et al. 2003) identified that weight loss improves social relations. It could be argued that weight gain may affect social well-being in a negative way. Therefore, family structure, roles and relationships may be important aspects of how individuals manage their weight (McLean et al. 2003; Furst 1997; Karner et al. 2005). Taking this a step further by examining cultural influences on social and mental well-being may be of value.

1.1.2 *Cultural beliefs about weight change*

Although there are health benefits associated with weight loss the perception of what is a ‘normal’ weight often varies due to cultural influences. The current climate within western society encourages a low body weight particularly on cosmetic grounds (Katzmarzyk and Davis 2001). However, trying to achieve a low body weight through rapid weight loss may have a detrimental effect on mental well-being even for the non-obese (Caulfield and Karageorghis 2008). On the other hand, different cultures may value obesity (Pollock 1995; McDowell and Bond 2006) with the result that individuals try to gain weight rapidly (Rguibi and Belahsen 2006) not realising the health consequences of obesity. Addressing beliefs about healthy weight is therefore an important aspect of weight management. Those who are obese may also be influenced by the beliefs of others thus affecting their social and mental well-being.

Western society exerts pressure, particularly on women, to strive for the ‘thin ideal’ body shape (Tiggeman and Lynch 2001). The result is stigmatization of obesity from both a physical and moral point of view (Brown et al. 2006) where individuals are blamed for not achieving the societal idea of body perfection through their lack of self control. Media images perpetuate these negative messages (Cusumano and Thompson 1997; Greenberg et al. 2003). Furthermore, both men and women who are obese, suffer discrimination in employment education and social settings (Sargent and Blanchflower 1994, Puhl and Brownell 2001). It would seem that obesity affects all aspects of everyday life. How obesity is viewed and therefore the way obese individuals are treated is of concern, not only for society, in general, but those working in health care in particular.

While the effects of weight loss on physical health are clear it is suggested here that social and emotional aspects of everyday life for the individual could also improve from enhanced weight management. Having established the health implications of obesity there is a need to consider the extent of the problem.

1.2 The prevalence of obesity

In many societies there are reported increases in levels of obesity in both industrialised and developing countries (WHO 2003). In 2003 the World Health Organisation (WHO) reported that about 1 billion adults, world-wide were overweight with at least 300 million of them being clinically obese. The number of individuals affected by this ‘globesity’ as it is termed (Eberwine 2002; Goldberg 2003), has overtaken those who are undernourished and is “*one of today’s most blatantly visible – yet most neglected – public health problems*” (WHO 2000). Of even greater concern is the increasing prevalence rates reported with each new publication of statistics. Furthermore, the exponential rise in childhood obesity may result in children of the current generation dying before their parents due to obesity related health problems (Steinbeck 2006).

In Scotland, (SIGN 1996) the adult incidence rate of obesity ($BMI \geq 30$) by 1996 was 14% in men and 17% in women. Only two years later, the Scottish Health Survey reported that these figures had risen to 19.6% in men and 22.1% in women (Shaw et al. 1998), demonstrating an even greater increase than the UK figures of 17% in men and 21% in women (Department of Health 1999). Following the publication of the 2003 Scottish Health Survey (Bromley et al. 2005) it was evident that Scotland had the dubious reputation of maintaining the lead over England with 22.4% vs 22.2% of men and 26.0% vs 23.0% of women being obese. Furthermore, the population is becoming

heavier with morbid obesity (BMI ≥ 40) rates rising from 0.5% in 1995 to 1.8% in 2003 for men and 1.3% to 3.6% for women. In an international league table of developed countries produced by the Organisation for Economic Co-operation and Development (OECD), Scotland's rates of obesity were second only to those of the United States of America who were top of the table (OECD 2006).

Even more worrying, is the increasing prevalence of obesity among children (Bundred et al. 2001; Dietz 2004) as childhood obesity is a risk factor for adult obesity (Eriksson et al. 2003; Power et al. 2003) especially if there is a family history of this disease (Stunkard et al. 1990). This does not augur well for the future health of the nation, as even in childhood, cardiovascular risk factors and type II diabetes are now being diagnosed (Reilly et al. 2003). Therefore, the increasing numbers who will require treatment due to the associated morbidity and mortality of obesity (Manson et al. 1995) will impact on health care costs.

1.3 The cost of obesity

For the UK as a whole, there are high cost implications for health care services in managing the consequences of obesity (Seidell 1995). Seven years ago a National Audit Office (2001) report stated the annual costs of obesity, to the NHS in England, were estimated to be £½ billion and the cost to the economy £2 billion. Since obesity rates continue to rise in line with projections the anticipated annual cost of £3.6 billion to the economy by 2010 could be reached (NAO 2006). However, these projections may be reached sooner as more recent estimates of direct NHS costs have already reached £3.2 billion annually (Allender and Rayner, 2007). The Scottish Office (1998) had recognised the financial implication for the health service in Scotland and targeted a

reduction in the incidence of obesity but with prevalence rates continuing to rise these targets will not be met.

Concern was expressed by Haslam et al (2006) about the ability of the UK health care system to cope. The seriousness of the situation was recognised by Tony Blair (2006), the then UK Prime Minister, who stated that the health service would ‘buckle under the strain’. In addition to increasing NHS costs there are also economic and social consequences for the individual (Bray 1996; Rissanien 1996; Rossner 1997). It is imperative, therefore, that effective interventions are developed and implemented to tackle the increasing obesity problem to reduce the impact, not only on health care costs, but also for the health and social well-being of individuals.

1.4 Obesity management and research

The health and financial implications of the obesity burden on health care services is clear. Therefore, there is a need to reduce this burden by having effective interventions in place. The lack of such interventions was recognised by the Scottish Office (1998) who recommended that research be carried out to develop more successful interventions. SIGN (1996) had already highlighted this need by their recommendation that the NHS needed to promote research into the management of obesity as a health problem. Three years on from this, a systematic review of interventions for obesity management by Harvey et al. (1999) and, more recently, an updated review by the same authors stated that it was difficult to find good quality evidence for interventions and even those identified as being effective have not been routinely implemented (Harvey et al. 2005). This apparent failure could partly explain why obesity management has not been given prominence in the prevention or treatment of co-morbidities. Further

examination of the approaches already researched with nurses may provide some clues as to what is needed for a new intervention. In order to understand how these approaches may have developed a historical glimpse of weight management is given.

1.4.1 *Approaches to obesity management*

Interest in diets is not new, as Plato (427-347 BC) the Greek philosopher recognised the importance of a healthy diet and was purported to advocate many components of what we today term the ‘Mediterranean diet’ (Skiadas and Lascaratos 2001). Many centuries later, William Banting (1796-1878), an English carpenter and undertaker, who suffered from what he termed the ‘affliction’ of obesity was so enthused by a high protein, low carbohydrate diet prescribed by his doctor, William Harvey, that he published his regimen (Banting 1869). Diet was also the mainstay of treatment in the latter half of the 20th century but the apparent lack of long-term efficacy has led to other avenues of research related to physical activity and behavioural therapies being undertaken.

Physical activity (National Institutes of Health 1998) alone can be effective and more importantly has a beneficial influence on abdominal fat, which is a risk factor for type II diabetes (Kay and Singh 2006) and cardiovascular risk (Avenell et al. 2004). The main benefit of physical activity appears to be in maintaining weight loss (Mulvihill and Quigley 2003). When used in combination with diet, physical activity can be more effective for weight loss than when used alone (Avenell et al. 2004).

The addition of behavioural therapies to diet and physical activity were later used (NHS CRD 1997) and this combined approach is considered the most effective to date (Steptoe et al. 1999, Avenell et al. 2004). Therefore it seems that the more aspects

addressed in managing weight the better the outcome (Harvey et al. 2005) but including diet, physical activity and behaviour therapy may not be sufficient if outcomes are to improve. The effectiveness of interventions carried out in the nursing arena, are therefore, reviewed.

1.5 Obesity management and nursing education

Only four interventions for obesity management and specifically aimed at nurses were identified (Cadman and Wiles 1996; Ogden and Hoppe 1997; Moore et al 2003; Counterweight 2004a). They all appeared to have diet as their main focus. Although dietary education, in a very small study of five nurses (Cadman and Wiles 1996), increased nurses' confidence levels about discussing diet, the outcome of this for obese individuals was not reported. It is possible that dietary interventions may not have the anticipated outcomes. In fact, Moore et al. (2003) found that individuals who consulted nurses in the intervention arm of their dietary study had poorer outcomes.

As greater dietary education, although improving knowledge (Moore et al 2003), did not improve outcomes perhaps a broader perspective to weight management is required. The Counterweight programme (2004a), in addition to a focus on diet, included physical activity and behavioural strategies resulting in better outcomes. An element of this improved success rate, may have been influenced by the addition of follow-up support for nurses, following basic introductory education sessions. Both the education sessions and follow-up support took place in the practice setting, perhaps indicating the relevance of education not being divorced from practice and taking a broader approach to implementing interventions.

The manner in which interventions are delivered may also be important. Although Ogden and Hoppe (1997) introduced the element of person centredness, it appeared that consultations continued to take the form of advice giving and again resulted in poor outcomes. This may highlight the need for a better understanding of person centred practice. Another study undertaken for weight management in primary care, although not carried out by nurses, may provide further insight. Rapoport et al. (2000) did not emphasise diet but took a broad based approach including emotional well-being resulting in modest weight loss. However, although addressing the importance of emotional well-being, this study was very intensive for both obese individuals and health professionals, therefore, would not fit well within the practice setting.

It would appear that greater educational input with follow-up support combined with a broader based approach of diet, exercise and behaviour strategies improves outcomes. More intensive interventions with psychological input also appear to improve outcomes. Perhaps taking a more holistic, person centred intervention including emotional well-being would show more promise. However, the difficulty with intensive programmes is that they are not practical due to time constraints. Practicality of interventions was identified by Mulvihill and Quigley (2003), as being a reason for not implementing them.

In addition to the issues already addressed, nurses may be more familiar with medical aspects of obesity management which also require inclusion in a holistic approach. Ideally, drug treatment, should only be introduced when previous approaches fail to achieve a realistic weight loss. However, drug treatment should be in addition, rather than instead of, these other approaches (NICE 2006). At the time this study was undertaken two drugs were licensed for use in the United Kingdom. These drugs had

different modes of action. Xenical (Orlistat), a pancreatic lipase inhibitor, acts on the gastrointestinal tract to reduce fat absorption by up to 30% (Guercioli 1997). Sibutramine (Reductil), on the other hand, has a different mode of action. It acts centrally by preventing the re-uptake of serotonin and norepinephrine to suppress appetite by enhancing satiety (Royal College of Physicians 2003). It would therefore appear that Xenical would be appropriate for those individuals who consumed a high fat diet and Sibutramine may be more appropriate for those who ate large amounts of food. When all these approaches fail there is the further option of bariatric surgery for those who are morbidly obese (Scottish Executive 2004; NICE 2006) but this study did not aim to focus on specialist care. However, awareness of other options may be pertinent.

The challenge is, therefore, to develop an approach that is comprehensive yet practical for both nurses and individuals with obesity. Before developing an intervention it would be pertinent to understand the nursing context.

1.6 Obesity management and the role of the nurse

Nurses have traditionally played a minor role in obesity management and treatment. However, the opportunity exists to develop the role of the nurse in obesity management particularly in those areas where nurses have contact with obese individuals in need of health care. Primary care appears to be the ideal setting to carry out obesity management as it is accessible to most of the general population. In addition, 82% of those registered with general practice attend at least once a year and almost a quarter of those, that is 6.5 million, are seen by practice nurses (ISD 2005). This is important not only for identifying those who may benefit from weight management but also for easy

access to intervention at a time when an individual is ready to make changes to achieve weight loss.

Support for this argument comes from policy documents (Scottish Executive, 2005; Scottish Executive 2006; NICE 2006) which recommended that obesity should be a priority in primary care. There are two main ways of approaching this; one at a population level and the other by targeting individuals (Chambers and Wakley, 2002). Given the government commitment, there is clearly a role for primary care nurses in obesity management.

As part of the multidisciplinary team providing healthcare in the community, primary care nurses have a crucial role to play. Although their remit is influenced by their employers, usually general practitioners, and the characteristics of the teams in which they practice (Jenkins-Clarke and Carr-Hill, 2001) opportunities may exist to develop the nurse role. Extended nursing roles emerged in line with the prevailing, disease orientated, medical model where tasks usually undertaken by junior doctors were allocated to nurses who had to obtain certificates of competency for doing so. This focus on tasks was criticised for limiting the parameters of nursing practice by reducing the importance of holistic nursing care (UKCC 1992a). Role expansion, on the other hand, should be developed through autonomous practice in response to the changing health care needs of the individual (Hunt and Wainwright 1994).

As primary care nurses are increasingly involved in chronic disease management (Department of Health 2005a) it may be that obesity management would sit well within their remit and it has already been acknowledged as part of the practice nurse role (Hampson 2006). The practice nurse (PN) role in the UK has evolved in a similar

manner to nursing in general with some taking on more progressive roles such as advanced nurse practitioner (Stilwell and Hobbs 1990). PNs are now able to develop their roles with an emphasis on promoting health (Paniagua 2001, Hampson 2006) but nurses are searching for “*new knowledge and skills in order to realise their vision and provide more proficient, holistic and innovative care*” (Paniagua 2001 p. ix). The question is how to involve nurses in obesity management to reflect this vision.

The purpose of this thesis was to develop an intervention to aid nurses in obesity management on a one-to-one basis. Although it is acknowledged that health visitors and primary care nurses in general have a part to play in obesity management, PNs were selected because of their accessibility. As practice nurses (PNs), in particular, have regular contact with patients, often through chronic disease management they would be ideally placed to incorporate obesity management into their practice. In relation to diabetes, one of the diseases strongly associated with obesity, (WHO 1998) a Cochrane Review (Renders et al. 2007) provided examples of how this regular contact improves outcomes. It has been argued that a holistic, person-centred approach, with its emphasis on the individual, is required for weight management. In addition, NICE (2006) recommends that interventions should aid the identification of barriers to good weight management and provide written goals and actions. Supported self management would fit with a holistic person centred approach. Therefore it appears that what is required is a more holistic approach including not only physical but also social and emotional aspects for example particularly if nurses are going to be at the forefront of practice. This approach encourages both nurse and individual to gain a deeper understanding which, in turn, may provide a basis for self management.

1.7 Self management in obesity

Recent department of health publications have encouraged health professionals to support individuals in their efforts to self-manage their condition, particularly in chronic disease management (Department of Health 2005a). Obesity comes under that category but the complexity of management makes it difficult to encompass all physical, social and emotional aspects in a manner that is not too time consuming. A way forward may be to involve individuals more fully in their care.

Individuals with obesity, like others with various chronic diseases, manage their condition on a daily basis. However, they may lack the confidence, knowledge and understanding to implement good self care (Department of Health 2005b). Providing the right support is therefore important. Self care programmes, as demonstrated in systematic reviews for diabetes, hypertension, arthritis and asthma (Warsi et al. 2004; Gibson et al. 2007), tend to be implemented from the perspective of the health professional and provide education. Whilst education is an important aspect in obesity management it would appear that current interventions may not have self care or person centred elements. It could be argued that unless self care is initiated by the individual who decides what, where and when they want to implement action then long term success will not be achieved. In one survey, less than half (42%) of primary care participants felt encouraged by health professionals, including nurses, to self manage their condition. Should this be so, one reason may be the lack of structured approaches. However, a structured person centred method was provided for PNs by Pill et al (1999) to help individuals with type II diabetes but consultations generally reverted to the PN taking the lead. This possible reluctance to implement self management strategies from a patient perspective may be due to health professionals having difficulty in power

sharing in decision making. Nevertheless, it is contended here that with the right support and materials PNs could deliver person centred care to support individuals in their efforts to self manage their obesity.

One of the reasons why health professional have difficulty changing their approach may be historical. Traditionally, the role has been advice giving and ‘patients’, as the term infers, being viewed in a sick role. This view of a person as being passive is in contrast to empowerment (Nyatanga and Dann 2002) required for self-management. Although the more recent term ‘client’ is considered by Ellis-Stoll and Popkess-Vawter (1998) to imply more of a working relationship, Neuberger (1999) argued that it inferred a purchaser/provider relationship. For the purposes of this study in an effort to create a more equal relationship, patients/clients will be referred to as individuals. The term ‘individuals’ also reflects how each person is a unique human being and should be treated as such.

1.8 Synopsis of the thesis structure

The purpose of the research was, therefore, to develop a practical, evidence based approach for nurses to use in partnership with individuals in their care. In an effort to reflect the complexity of weight management it appears that a broader view of factors that impact on obesity needs to be taken. To identify more specific details related to these factors, knowledge from various disciplines will be reviewed. Identification of these details will provide a basis to research relationships between the factors. The evidence from such exploratory research will inform the intervention. The format of this thesis in the remaining chapters is as follows:

Chapter 2 sets out to explore the key elements of a conceptual framework to guide the study. Essentially this chapter is seeking to answer the question “what should go into a holistic, person centred approach?” which, from the introduction appears to have potential to be effective. In addition, this chapter seeks to highlight/outline the extent to which such a holistic approach can be used by nurses. Therefore nursing models to assist in a structure for holism are identified.

Chapter 3 provides the methodological underpinning and methods used to develop and evaluate the holistic approach. It draws on a mixed methods approach consisting of two phases of work. The first exploratory phase is primarily quantitative and the second intervention phase primarily qualitative. This chapter explains the research design for each phase of the study.

Chapter 4 details the results from the exploratory phase undertaken to provide evidence for the intervention phase used to develop weight map/intervention for a holistic approach. Analysis of the data using SPSS examines patterns between the variables to identify the parts relevant to a holistic approach. Further analysis of the relationship between these parts and weight change are explored.

Chapter 5 discusses the evidence generated from the exploratory phase to provide a grounding for the development of a holistic approach. These insights were used to provide the basis for PNs to work in partnership with individuals to reflect the holistic nature of the approach. Consideration is given to the tools required, educational needs and working context of PNs.

Chapter 6 provides an analysis of the implementation of the holistic approach to weight management by PNs in primary care. The outcomes of how the parts of ‘the whole’ are linked and interact in everyday situations are presented.

Chapter 7 discusses the relevance of a holistic approach to weight management for PNs in primary care. Consideration is given as to the effectiveness of this approach in terms of weight loss and self management. The practicalities of implementing the holistic approach are discussed in relation to the utility of the booklets, the experience of using the holistic approach and the education and support provided.

Chapter 8 states the conclusions, limitations and recommendations for practice with regards to a participatory, holistic, person centred approach to weight management for PNs in primary care.

Chapter 2

Developing a holistic approach to obesity management – literature review

Developing a holistic approach to obesity management requires a review of not only literature on holism but also literature related to obesity and obesity management. It is the combination of these two perspectives that is central to this thesis. The introduction identified the relevance of obesity to health and the need for different interventions to be developed in relation to weight management. While it was highlighted that nurses could have a major role to play in helping individuals manage their obesity it is also evident that there is a lack of available education and tools to assist them. In particular, there appears to be no emphasis on holistic approaches, which it is argued reflect more fully the complexity of obesity management. This chapter reviews the pertinent literature and current approaches to obesity management particularly in relation to physical, social and emotional aspects. The chapter concludes with a reflection on the literature reviewed and identifies the aims and objectives for the research.

2.1 Literature Review

Having already identified the need for different interventions for obesity management, in order to define the requirements for such an intervention, a broad-based search of on-line and library databases for books and journal articles was undertaken.

The initial phase of this was carried out at the commencement of the thesis work to assist in scoping the extent of the literature within this field (Parahoo 2006). Therefore, no attempt was made to systematise this process at this stage (Griffiths and Norman

2005). The purpose was to build on the experience of the researcher. This was particularly important considering the complex nature of obesity management which is suggested to be more than just the sum of the parts (Hawe et al. 2004) and therefore is more difficult to define boundaries (Plsek and Greenhalgh 2001).

The all encompassing nature of a holistic approach created difficulties in grappling with the volume of literature. The second phase consisted of a more focused literature search for physical, social and emotional components of obesity management. From this more focused review the following were identified:

- the psychobiological approach to obesity
- attribution theory
- social support theory
- energy intake
- energy expenditure
- weight control beliefs
- physical well-being
- social well-being
- emotional well-being

The third phase dealt with the context of this thesis namely, holism, person centred care, self management, nursing, primary care, and education.

The databases searched were:

- Cochrane
- EBM Reviews

- Medline
- Pubmed
- AMED
- BNI
- CINAHL
- EMBASE
- ERIC
- PsychoINFO
- ASSIA

In addition hand searching was carried out in specialist journals, for example, International Journal of Obesity, Obesity Reviews and Obesity Research.

After dividing the searches into themes to make it more manageable, as indicated from the following examples from each search phase:

- Obesity management, weight management, obesity intervention
- Physical well-being, social well-being, emotional well-being
- Nursing, primary care, role development

Tools such as the thesaurus and truncation were employed in an effort to identify all possible relevant material before initially limiting the search by meta-analyses, systematic reviews, English language, time limits of ten years and using Boolean logic. Further literature was filtered out by reviewing the resulting titles and abstracts, for relevance before obtaining the full text articles for synthesis. The literature was also searched by author, those well known not only in the obesity field but also in each particular field of inquiry. Refworks, although not available at the beginning of the

study, later proved to be an invaluable tool for storage and retrieval of the pertinent literature.

The above literature search process provided useful background to this holistic approach to obesity management, however, as the thesis was taken over a number of years, search processes were often fragmented and acknowledged as a limitation.

The available literature is now presented. Firstly it presents the issue of holism and how it relates to nursing practice. Following this, the relevant components of the holistic approach to weight management will be considered.

2.2 Holism

The term ‘holism’, derived from the Greek ‘holos’, was introduced in the early part of the nineteenth century by Jan Christian Smuts (1926). Unlike the Cartesian medical model, the two major components of body and mind in holism, are not viewed as being separate but seen as interacting with each other (Pearson et al. 2005). Holism has been incorporated into a number of nursing models although debate about its precise meaning still continues (Smart 2005). It is recognised that some nursing models, for example Watson (1988), include spirituality as a third component but this is not specifically addressed in this thesis.

Pearson et al. (2005) state that the two basic assumptions underlying holism are:

1. *“the individual always responds as a unified whole.”*
2. *Individuals as a whole are different from and more than the sum of their parts”*

If, as assumption 1 states, individuals respond as a unified whole it means that viewing the parts in isolation would not provide the whole picture. Therefore, physical, social and emotional aspects of obesity management should not be viewed in isolation. Furthermore, assumption 2 states; individuals as a whole are different from, and more than the sum of their parts. If this assumption is accepted then to see the 'whole' there needs to be an awareness of the interaction between physical, social and emotional aspects of daily living for obese individuals. Otherwise, inaccuracies may occur when trying to understand individuals, an important issue in weight management as it may have an effect on outcomes.

Thorne (2001) describes holism as coming "*to know the whole through learning as much as possible about all the parts*" (p.261). The many 'parts' of those who are obese, that is, weight beliefs, physical, social and emotional well-being will be influenced by many factors. Furthermore, identifying not only these factors but also how they interlink is complex. A way of facilitating the identification of these factors without losing the complexity of the 'whole' is required.

2.3 Holism and nursing practice

Holism is relevant to nursing, particularly in the area of promoting health. The word 'health' "*is based on the Anglo-Saxon word 'hale' meaning 'whole'*" (Bohm 1995 p.3). However, taking a holistic approach is demanding for the nurse as it means becoming involved with the 'whole' person and is not an easy option (Henderson 2001). Nonetheless, when nurses give of themselves to create a partnership with individuals, it allows emotional well-being to be addressed (Phillips 1996). However, if nurses do not

feel comfortable with this approach they may adopt avoidance tactics (Thomas and Cohn 2006) to the detriment of developing partnership working.

Paniagua (2001) sums up holistic care as “*Successful relationships fostered through holistic interaction and a sense of closeness between patient and nurse*” (p.40) being key to effective consultations.

2.4 Nursing and obesity management

To date, there is limited evidence of nurses being involved in obesity management in any significant way. Although there are some instances of practice nurses (PNs) providing valuable services in relation to obesity (NAO 2001) a Scottish survey (Hankey et al. 2004) reported that PNs felt unskilled in this area of practice. In addition to providing evidence for practice, this thesis aimed to develop an intervention relevant to nurses.

It appears that for some time, PNs have been aware of the relationships between obesity and, for example, hypertension (Stilwell and Hobbs 1990). However, in a more recent practice nurse handbook, the complexity of weight management has been recognised and the suggestion put forward that rather than just focusing on diet, the underlying cause of being obese should be identified (Hampson 2006). Therefore, there seems to be a need to develop an intervention to aid PNs to engage with individuals who are obese in order to identify underlying causes of obesity. Adopting a holistic approach would, therefore, appear relevant with regard to developing such an intervention.

With this in mind Peplau (1988) and Roper, Logan and Tierney (RLT) (2000) were selected not only as a means of delivering a holistic person centred approach to weight management but because they are embedded in practice (Gastmans 1998, Pearson et al. 2005) and to try and avoid the criticism aimed at other models for their inapplicability to practice (Timmins and O'Shea 2004). Perhaps combining nursing models with practitioner experience to formulate a model for a particular area of practice is the way forward (Fraser 1996) as it appears that failure to utilise nursing models at all means that practice is often based on the medical model (Fawcett 2000). The narrow confines of the medical model may be one of the reasons for the lack of success in obesity management. It is acknowledged that in the general health promotion field some techniques such as the stages of change (Prochaska et al. 1992) and motivational interviewing (Miller and Rollnick 1991) are used. However, the purpose of this thesis was to provide an intervention for obesity management to incorporate the whole person and capitalise on the on-going relationship between PNs and individuals. Therefore, the possible relevance of Peplau and RLT will now be discussed for their applicability to obesity management.

2.4.1 Interpersonal relations in nursing

Although the model of Peplau (1988) was developed for use in the mental health field and has been used extensively in that area (Forchuk 1994) it is applicable to other areas of nursing (Walsh 1991; Pearson et al. 2005). This psychodynamic approach was pioneered in psychiatric nursing and appears to have a great deal to offer weight management.

It seems particularly pertinent to obesity management for several reasons. As in mental health, emotional factors have a high impact on well-being in obesity (Edman et al. 2005; Wadden and Stunkard 1985). Furthermore, both conditions are stigmatised (Rogge et al. 2004) making everyday interpersonal interactions difficult. Therefore, establishing a therapeutic relationship where individuals are accepted unconditionally by the nurse, provides a basis for developing trust. It is important that individuals who are obese do not feel that they are being judged. Only then will progress be made towards an awareness of their situation and what strategies are necessary for good weight management. Peplau (1988) views the interpersonal relationship between nurse and individual as crucial and therefore her model is very relevant to obesity management.

This relationship between nurse and individual, however, although being viewed as equal in terms of respect, is nevertheless unequal in that the nurse is a professional with specialised knowledge that is used for the benefit of the individual (Peplau 1987). Moreover, the relationship is envisaged to be for the long-term (O'Brien 2001) which again applies to obesity management.

Therefore, Peplau's model would be applicable to obesity management as it is "*a significant, therapeutic, interpersonal process. It functions co-operatively with other human processes that make health possible for individuals in communities...Nursing is an educative instrument, a maturing force, that aims to promote forward movement of personality in the direction of creative, constructive, productive, personal and community living.*" (Peplau 1988 p.16). Peplau (1988) also focuses on health rather than disease where the individual is treated holistically in the sense that their family and community setting are included. However, Comley (1994) argues that Peplau's view of

holism was limited due to her work being developed before holism became an important concept in nursing. Nevertheless, it is applicable to obesity management as described in the following Phases of interaction identified by Peplau (1988):

- orientation
- identification
- exploitation
- resolution

Each of the above phases are discussed in relation to weight management. Although these phases each have a distinct role they are also interlinked and according to Wesley (1995) correspond to the stages of assessment, diagnosis, planning, implementation and evaluation in the nursing process.

2.4.1.1 Orientation

Orientation is the phase where a trusting relationship is established between nurse and individual. This phase may have already begun if individuals are attending on a regular basis, for example as in chronic disease management. However, Walsh (1991) warns that focusing on the disease, or in this case weight loss, creates a “*danger of relapsing into the medical model at this stage*” (p.112) and may result in the individual feeling that they are being blamed for their obesity (Rogge et al. 2004). Orientation is the foundation on which the therapeutic relationship is built and demands that nurses have “*highly developed communication skills*” (Simpson 1991 p.98) to uncover the needs and expectations of the individual (Pearson et al. 2005). Therefore, any difficulties encountered in developing this relationship may lead to poor outcomes (Forchuk et al. 1998) or individuals not returning for follow-up (Forchuk and Reynolds 2001) resulting in lost opportunities for individuals to explore how their needs, feelings, attitudes and beliefs impinge on their ability to achieve good weight management.

2.4.1.2 Identification

The identification phase builds on the orientation phase where the nurse/individual relationship develops further. Beliefs about obesity can be addressed in this phase where the nurse uses his/her knowledge to act as a resource for the individual. The individual is helped to identify those who will support them in their weight management strategies and conversely those who will try and sabotage their attempts. As they begin to have a clearer picture of what they need to do to improve weight management their feelings of helplessness decrease and confidence grows (Wesley 1995).

2.4.1.3 Exploitation

Having established what the issues are for the individual the exploitation phase is used to plan what requires to be done to facilitate better weight management by looking at all aspects of coping with everyday activities. Difficult situations can create anxiety in individuals but Peplau (1988) considers anxiety to be useful in helping individuals take control as long as they are not overwhelmed by it. Those who use emotional coping mechanisms, resulting in comfort eating, can be helped to find new ways of dealing with particular situations. The role of the nurse in this phase may be that of counsellor. By encouraging individuals to problem solve and set goals, the nurse instigates the transference of power to the individual thus enabling the move towards self-care.

2.4.1.4 Resolution

The ultimate aim of the resolution phase would be total self-care but this is not realistic for most obese individuals, as obesity is a chronic relapsing disease (Orzano and Scott 2004). Therefore, long-term follow-up is required. Nurses often have continued contact with individuals through other areas of practice and have the opportunity to maintain support for weight maintenance or further intervention if required.

However, although the development of the relationship is central to self management it needs to be understood in the context of how everyday life affects people's weight.

2.4.2 Activities of living

Everyday life affects how individuals manage their weight therefore the Roper, Logan and Tierney (RLT) (Roper et al. 2000) model of nursing was also considered useful to conceptualise a holistic nursing approach to obesity management. This model, which is familiar to UK nurses (Walsh 1991; Pearson et al. 2005), is based on the following twelve activities of living:

- Maintaining a safe environment
- Communicating
- Breathing
- Eating and drinking
- Eliminating
- Personal cleansing and dressing
- Controlling body temperature
- Mobilizing
- Working and playing
- Expressing sexuality
- Sleeping
- Dying

According to Tomey (Roper et al. 2000) who wrote the foreword for their book, The RLT Model of Nursing: Based on Activities of Living, they had “*taken the complexity of living and nursing and created a model that appears relatively simple....That simplicity allows the model to be readily understood, relevant and applicable to nursing practice....it helps individualize nursing care.*” Everyday living involves an amalgam

of activities that interact with each other and where no one activity is completely independent of the others. It seems then that activities of living would be a useful means of guiding the exploration of how obesity affects everyday life and vice versa. There has been some criticism however that the activities of living function as a checklist (Reed and Robbins 1991) encourage a task orientated approach to care (Chavasse 1987). The model has also been criticised for being too physically orientated (Fraser 1996; Walsh 1989). This seemed to be borne out when it was used in psychiatric nursing (Murphy et al. 2000). Newton (1991) however, refutes these accusations and contends that it helps to identify factors that influence activities of living. For the purposes of this study it does appear applicable to living with obesity as it addresses physical, psychological, sociocultural and environmental factors at an everyday level. At the same time, it recognises that the ability to cope with change is not linear but moves back and fore on a continuum. Furthermore, RLT appears to provide direction for assessment and goal setting which, seem to be an important aspect of aiding behaviour change. In addition, the individuality of each person would be recognized so providing a person centred approach to intervention.

The RLT model of nursing may also be relevant to practice as it is widely used in nursing practice across the UK therefore familiar to practising nurses and is said to be *“the ideal marriage of theory and practice, and perfectly encapsulated the new ways of thinking about nursing.”* (Salvage 2006 p.24). It is proposed that it be used in conjunction with Peplau in this study to guide the approach to nursing thereby providing care in a holistic manner.

The approach developed by Peplau, combined with RLT's model, provides a conceptual framework to address weight management in a holistic way. However, like all models

usage will be heuristic rather than practical or pragmatic, that is the model will guide thinking without being used overtly (Wimpenny 2002).

2.5 Exploring weight management requirements

If a holistic approach is going to be taken the specific components and their relationships need to be addressed. The information already gleaned from the literature about weight beliefs, physical, social and emotional well-being indicates that research from other disciplines would provide a greater depth of understanding to inform a holistic intervention for obesity management. Peplau (1988) concurred with this view as she suggested that *“nursing as an applied science develops its principles by interrelating ones from all other known sciences and applying them to everyday nursing problems”* (p14). This section identifies some of the key areas that would appear to be central to developing a holistic approach to weight management. To do this, relevant theories and concepts are explored namely, the psychobiological approach to obesity, attribution theory, social support, energy intake, energy expenditure, weight control beliefs, physical, social and emotional well-being.

2.5.1 Psychobiological approach to obesity

Understanding the psychobiological approach to obesity may provide nurses with insight into the mechanisms that control energy intake and energy expenditure. This knowledge can be used by nurses to provide education for obese individuals and convey an understanding particularly of the biological effects on weight management. It takes account of hunger, cravings, hedonic sensations, appetite, meals and their constituents, metabolism and the interactions with the brain and suggests that obesity effects homeostasis through a negative feedback system (Rodin 1992). The body's internal

cues for hunger are stimulated by a fall in blood glucose creating an eating response to that hunger. Once eating commences, the action of positive feedback from the nose and mouth, continues to stimulate this process until negative feedback, from the stomach and small intestine, becomes equal to or greater than the positive feedback, so terminating food ingestion. This process should create homeostasis but in obesity this may not occur.

One example of how this applies in practice is that individuals eat too quickly therefore eat a larger portion before satiety signals are stimulated (Otsuka et al. 2006). Satiety may also be affected by the type of foods eaten. A recent review by Skidmore (2007) concluded that consuming protein or carbohydrates rather than energy dense high fat foods increases satiety. Therefore, it is important for nurses to educate individuals on the benefits of making changes to their diet. Actually implementing these changes may not be easy for some due to our environment. For example some individuals may be lured into the chip shop by the smell emanating from it. For nurses it is therefore important to help individuals identify triggers of overeating to enable them to decide on management techniques. Since obesity is an imbalance between energy intake and output, the psychobiological theory can also be applied to energy output.

Comprehending the various ways that energy is expended may help individuals, not only understand their particular difficulties with weight but also aid them in deciding how to address them. Energy expenditure occurs through the metabolism of food. Flatt (1992) suggests that even the thermogenic response, in the long term, can either prevent or aid the development of obesity. Of greater importance, is the resting metabolic rate (RMR), which represents a much higher daily energy expenditure. The resting metabolic rate (RMR), accounts for about 70% of daily energy expenditure. However,

those with obesity rather than having a lower metabolic rate than their lean counterparts (Bruce et al. 1990) usually have a higher RMR and expend more energy in activity because of having a larger body mass (Ravussin et al. 1985). Therefore, it would seem that their total energy expenditure would be higher than their lean counterparts. However, this is not the case as they generally have a sedentary lifestyle (Blanchard et al. 2005) thereby creating a homeostatic imbalance but an increase in physical activity may redress this imbalance. The challenge for nurses is to address any misconceptions in an empathic manner and facilitate the exploration of possible solutions with obese individuals.

Another challenge is maintaining motivation when weight loss slows down. Understanding that the metabolic rate reacts to weight loss by slowing down to preserve the body's fat stores (Leibel et al. 1995; Doucet et al. 2003) can be disheartening. However, knowing that this can be reversed by increasing physical activity (Yoshioka et al. 2001) may help motivation.

A further benefit of physical activity that nurses need to convey to individuals is the reduced risk on mortality and morbidity (Blair and Brodney 1999). The associated comorbidities have already been discussed in the introduction and are very relevant to treatment. For example, a systematic review by Lieveense et al. (2002) demonstrated that the development of osteoarthritis of the hip was influenced by obesity. They indicated that the association was moderate but the BMI criteria was lower than the usual classification therefore the assumption could be made that the association may even be stronger than their findings would suggest. It follows that physical function may be impaired in those who are obese. This was supported by a cross-sectional, population-based study by Surtees et al. (2004). Nurses are well placed to explain the

relationship between obesity and any co-morbidities an individual may have. Awareness of the possible benefits of weight management on health may be a motivating factor to lose weight. Physical and metabolic aspects of obesity are therefore important to management and are the main focus of the psychobiological approach to obesity. Other factors such as beliefs and emotions also influence obesity management and Weiner's Attribution Theory is more applicable in these areas.

2.5.2 Attribution theory

Individuals may have tried to lose weight many times in the past and lost confidence in being able to control their weight. Nurses have an important role to play in supporting and encouraging individuals to regain self belief. The perception of control is a central part of attribution theory and so helps the exploration of individual beliefs about the reasons for success or failure. These beliefs also influence motivation, achievement and expectations of future success or failure (Weiner 1985) and are explained by three underlying dimensions; locus of control, stability and controllability.

Locus of control is internal or external (Rotter 1966). Those with an internal locus of control believe themselves to have more control over events, have greater problem-solving abilities and are not so easily influenced by others as those with an external locus of control (Lefcourt 1982). Weiner took this a stage further and suggested that outcomes do not depend only on locus of control but that expectations and controllability have also to be taken into account. By using a holistic approach nurses may be able to engage individuals in their own care thus enabling them to feel more in control.

For nurses, helping individuals identify how much control they feel they have over their weight may be of importance as it seems that those who have more control have greater success (Elfhag and Rossner 2005). This is relevant for practice as, for example, if an individual feels that their weight problem is caused by a medical condition, and of course, there may be good reason for believing that, they may think they have no control over their weight. However, even those whose weight is compromised by a medical condition may still be able to implement good weight management strategies and nurses are well placed to educate individuals and encourage empowerment to make the necessary changes.

Some individuals, on the other hand, may believe that weight loss is achievable without a lot of effort (Brownell 1991). Therefore, they may not make sufficient effort and perhaps offer a vague reason for not succeeding. An awareness of this possibility may be useful for nurses. However, there may also be a danger of conveying a sense of blame if nurses allow themselves to become frustrated or even angry with the individual (Weiner et al. 1987). Perhaps, taking a person-centred holistic approach would lessen the possibility of this happening.

For those individuals who are successful in weight management it may be that they attribute their success to their own efforts and will be able to sustain the changes. Primary care nurses may be key players in helping individuals with weight maintenance following weight loss through regular follow-up. However, some individuals may not attribute success to themselves. An example may be where, following drug treatment, there is weight regain as the individual attributes success to the drug rather than their own efforts. In this scenario, nurses can focus the individual's attention on their own achievements.

From reflection on practice, it seems that sometimes the individuals intend to make a real effort to implement changes to achieve weight loss but are unsuccessful. One of the reasons for not succeeding may sometimes be that unrealistic goals are set. As a result they may feel a failure and become angry with themselves. They may also judge themselves harshly and feel guilty about their perceived lack of control. For some this might result in overeating (Meyer and Pudell 1972; Costanzo et al. 2001). It would seem that individuals may benefit if nurses were able to help them become more aware of their emotions and reactions in order to identify new coping strategies and set realistic goals.

Emotions may not be addressed in weight management but could be pertinent to nursing practice. It appears that negative affect such as anger, depression, tiredness, boredom or loneliness may instigate overeating (Popkess-Vawter et al. 1998) and be areas for nurses and individuals to explore and address. It is probable that the uniqueness of each individual means that these feelings are generated by a multitude of situations and different for each person. Therefore, ascertaining the individual's perspective may be crucial from a nursing perspective.

Negative feelings may also be influenced by societal stigmatisation of obesity and individuals are reported to cope in various ways. Myers and Rosen (1999) identified that problem solving, confrontation and social support may be used to good effect but they also suggested that sometimes individuals isolated or blamed themselves. These negative feelings may engender a sense of failure which would be compounded if the individual was also depressed (Abramson et al. 1978). Nurses may be able to help individuals implement positive coping mechanisms to reduce self-blame, depression and raise self-esteem (Robinson and Bacon 1996). It would appear, therefore, that by

addressing negative feelings and identifying the possibility of depression may be an important part of nursing care. One way of coping may be to access good support from others.

2.5.3 Social support theory

Social support affects health (Sarafino 1990; Brannon and Feist 1997) and is particularly relevant to those who are trying to manage their weight (Verheijden et al. 2005). It is therefore important that nurses explore with individuals the extent of social contacts and how much support they feel they have from others. As positive social support improves success rates in achieving and maintaining good weight management (Elfhag and Rossner 2005) nurses can help individuals to identify those who can provide support. However, it may also be pertinent to identify the saboteurs.

A holistic approach looks at not only the individual but their social environment. In consideration of this it may be that spouse, friends, family, or colleagues, for example, influence eating and activity habits and therefore weight management. Raising awareness of these influences and exploring any necessary changes could be a key area in management. However, it may be that individuals feel they have little or no support from others and isolate themselves. (Verheijden et al. 2005).

Alternatively, there is evidence to suggest that social contact may be avoided due to an expectation of being a victim of prejudice (Puhl and Brownell 2003a) This would seem to suggest that not only actual support but the perception of support is important. Awareness of this may guide nurses and individuals in forming coping strategies as

people may otherwise isolate themselves thereby reducing their opportunity to acquire both actual and perceived support from others (Puhl and Brownell 2003b).

Unlike other stigmatised groups, for example HIV/AIDS (Mallinson et al. 2005) and depression (Das et al. 2006), whose members often support each other, the obese individual may internalise the stigma and accept these beliefs (Wang et al. 2004). In turn the negative affect creates guilt and shame but if the perception is of having no support, individuals may find it difficult to express their emotions. Having someone to provide support and act as a buffer against negative life experiences (Cohen and Wills 1985; Cohen et al. 2001) may therefore be crucial for some. Should there be no-one available to provide this type of support the nurse's role may be to act as a surrogate.

Social support is most frequently classified into four types: a) emotional, b) instrumental, c) informational and d) appraisal (Hinson-Langford et al. 1997). Each of these will now be discussed in relation to weight management.

a) Emotional support

Emotional support, sometimes called esteem support, is conveyed when an individual feels valued and accepted for who they are (Cohen and Wills 1985) and provides comfort and reassurance (Sarafino 1990). It is particularly pertinent for weight management as those who have low self-esteem perhaps due to internalising societal values of body image, and lack support from others, may be less likely to participate in healthy behaviours (Biggs and Fleury 1994). It seems that emotional support by being able to talk about one's feelings is important to those having difficulty controlling their weight (Surtees et al. 2004). Kayman et al. (1990) identified that relapsers, although

wanting more understanding and support, felt that there were few people available to give them the support they needed. Nurses, for example, may find themselves acting as a surrogate in these instances.

b) Instrumental support

Instrumental support is more direct assistance. Family members and friends can provide this type of support through practical help, for example, by babysitting or providing transport to allow an individual to go swimming. This is particularly pertinent to women who are less likely to participate in healthy behaviours due to home and family responsibilities (Oldridge et al. 1992; Thomas 1994).

c) Information support

Health information can be accessed from a variety of sources. Television and magazines provide information, for example, in relation to cardiovascular risks (Murray et al. 2000). However, if obese individuals access weight management advice from similar sources it may not always be appropriate. Healthy eating advice from government bodies and the advertising of high fat foods can be a source of confusion as conflicting messages are being conveyed. Education on weight management is therefore an important aspect of any consultation. However, providing information alone does not always change behaviour (Nestle et al. 1998).

d) Appraisal support

Appraisal support may be more effective where the nurse can help individuals to define, understand and problem solve any difficulties. This type of support provides feedback and again may come from a variety of sources. For example, if a mother tries to alter

family eating habits to healthier foods there may be objections from family members. Since food is a symbol of love and caring (Lupton 1996) this may cause some conflict and stress resulting in less healthy food choices being made (Boutelle et al. 2003). Similarly, peer pressure from friends may lead to the inappropriate consumption of high fat foods (Nestle et al. 1998). Positive feedback, on the other hand, would encourage individuals to maintain healthy behaviours. For example, changes are more easily maintained if family members are willing to provide or share healthy food.

In conclusion, social support is therefore a constructive part of the conceptual framework for this research. It provides a means of exploring the environmental and interpersonal influences on weight management. What this means for everyday life will now be examined.

2.5.4 Energy intake

During the last twenty years there have been changes in both food quality and quantity as well as changes to eating patterns. Energy dense snacks and drinks together with convenience foods are available round the clock. The popularity of convenience foods rose by 24% in 10 years and with easy access to ready-made and take-away meals combine to create an obesogenic environment (House of Commons Health Committee 2004). These types of foods are mostly energy dense which is highly correlated with fat content (Prentice and Jebb 2003). A lack of awareness of this fact means that while the same bulk of food is consumed, actual energy intake is increased. In fact, 'passive over-consumption' is highly probable as demonstrated by Stubbs et al. (1995) in an experimental study where food for lean young men was covertly manipulated to contain three different levels of fat. Individuals ordered meals and snacks whenever they

wanted. The results confirmed that a high-fat diet encouraged a higher energy intake. This would appear to explain why people are unable to assess the fat content of diets (Lloyd et al. 1995) but Prentice and Jebb (2003) demonstrated through other trials that it was not the fat but the energy density that prompted over-consumption.

In theory, helping individuals to understand food labels would aid healthier choices but these are complicated and often, in very small print. It should also be borne in mind that not everyone is literate and obesity has a higher propensity in lower socio-economic groups (National Audit Office 2001). Therefore it is encouraging that the food industry is currently starting to implement a simpler traffic light system recommended by the Food Standards Agency (Food Standards Agency 2006). The sensory responses of smell, taste and texture of foods influence food choice (Hargreaves et al. 2002; Nestle et al. 1998; Willenbring et al. 1986) and even if there is no intention to consume these foods, going past a fast food outlet may, for example, provide sufficient stimulation to induce consumption.

Trying to assess accurate energy intake is fraught with difficulties since self-reported food intake is underestimated (Nestle et al. 1998). One study reported that both obese and non-obese women underestimated their intake by 12% (Poppitt et al. 1998). Although meals were reported accurately, more than one third of between-meal snacks were not recorded. Since both healthy (eg fruit) and unhealthy (eg chocolate) snacks went unreported the authors suggested that it was partly due to poor memory. The recording method used in that study was 24hr recall. Food diaries where people write down everything they eat and drink immediately afterwards should give more accurate results but without the utmost diligence they too fail to provide accuracy as real life situations change priorities. Nevertheless, a comparative study of obese and normal

weight women demonstrated that obese women, although they consumed significantly less fruit, had a higher calorie intake (Pullen et al. 2005) probably because they ate more frequently (Forslund et al. 2002) and it is known that snacks are not very satiating (Marmonier et al. 2002).

Planning meals is the key to reducing inappropriate food intakes and is associated with a higher intake of fruit and vegetables (Boutelle et al. 2003). Once meals are planned it is important to make out a shopping list to reduce the probability of buying unwanted foods. Even planning when to shop is important as the internal cue of hunger encourages people to buy more (Boutelle et al. 2003) and anecdotal evidence would suggest that it is usually unhealthy foods that are bought in such circumstances.

Not having breakfast is said to encourage a higher energy intake from snack foods (Elfhag and Rossner 2005; Sjoberg et al. 2003) but in the large ongoing Swedish Obese Individuals (SOS) study, obese women were no more likely than others to skip breakfast (Forslund et al. 2002). However, their meals were more frequent and mostly consumed later in the day especially after 20.00hrs. In addition, the type of breakfast food consumed is important as Song et al. (2005) indicated by stating that the ingestion of cereals was preventative against obesity. Therefore, educating individuals to be aware of eating patterns in addition to the type of food, including snacks, is important. However, traditional food diaries rarely accommodate eating patterns (Forslund et al. 2002) so may miss important information, particularly in relation to disordered eating such as night eating syndrome. Night eating syndrome is defined as morning anorexia, night-eating and insomnia and, according to Stunkard, who first reported it in 1955 may include depression (Stunkard and Allison 2003).

In addition to food, energy intake is influenced by readily available energy dense soft drinks. For example, according to the House of Commons Health Committee (2004) there are 139 calories in a standard 330 ml can of Coca-Cola. Alcohol intake also influences obesity in men (Rosmond et al. 1996). There must be concern however, about the dramatic increase in the alcohol consumption rates of women and young people (House of Commons Health Committee 2004) encouraged by calorie laden ‘alcopop’ type drinks and the culture of binge drinking.

2.5.5 Energy expenditure

Energy expenditure through physical activity has also declined dramatically over the last 50 years. In fact, the decline began with the industrial revolution and the emergence of mechanised equipment. Motorised transport and energy saving domestic appliances have lessened the need for physically arduous tasks and led to a more sedentary lifestyle. Escalators and lifts in public places encourage further inactivity. Therefore it seems that exercise has to be a deliberate activity and is in competition with other social pastimes (Kushi 2006). In recognition of this it was recommended that every adult should accumulate 30 minutes of moderate physical activity (eg brisk walking) on at least five days a week (House of Commons Health Committee 2004). While those in the general Scottish population achieving this level of activity are in the minority (45% men and 33-35% women), in those who are obese it is even lower with 37% men and 22% women reportedly having met the recommendations (Bromley, et al. 2005). However, a consensus statement of experts stated that even for those who have lost weight to prevent regain would require 60-90 minutes of moderate accumulated daily activity (Saris et al. 2003).

The obvious difference in the recommendations and what individuals are achieving poses a problem. Nevertheless, it highlights the necessity of assessing current activity levels before encouraging possibly inappropriate changes. Tremblay et al. (1999) suggest that for long term success physical activity should be enjoyable with the person feeling motivated and in control. It is, therefore, important that individuals choose activities that they enjoy and can be fitted into their daily routine. Success breeds success and as individuals begin to be more active they may increase their activity levels as they become fitter. The National Weight Control Registry (Wing and Hill 2001) tracked over 3000 individuals in 2001 whose average weight loss of 30kg had been maintained for an average 5.5 years. It was calculated that they undertook one hour of moderate intensity activity such as brisk walking every day thereby exceeding the recommendations. Increasing activity levels are associated with a corresponding reduction in energy intake (Jakicic et al. 2002) perhaps due to a speculated reduction in perceived hunger (Westerterp 1999). It is also suggested that hunger is reduced by eating breakfast and this provides more energy for physical activity (Elfhag and Rossner 2005). Therefore it could be argued that they are closely linked.

In addition to activity levels it is important to assess inactivity. It has been demonstrated that there is an interaction between television watching and inactivity (Hu et al. 2001; Hu et al. 2003; Salmon et al. 2000). This could also be applied to other sedentary pastimes such as computing. However, it is not only in leisure time that people can be inactive. An Australian study (Brown et al. 2003) also took into account the time that people sat in connection with travel and work. While they demonstrated that both men and women were more likely to be overweight or obese if they sat for long periods at a time they also illustrated the complexity of assessing different influences on activity levels.

However, a UK household survey of 18-64 year olds, which has been conducted every two years since 1996, has demonstrated that activity levels vary over time (Popham and Mitchell 2006). They found that activity levels were likely to be reduced in those who had children and worked long hours while those who were retired were more likely to be active. Another longitudinal UK survey corroborated these findings among white-collar civil service individuals but, furthermore, they demonstrated a dose-response where the more a person worked the less active they became, with retired people being the most active (Mein et al. 2005).

These results are helpful in highlighting that domestic circumstances and time pressures are challenges for people trying to be more active and vary over time. In an effort to veer individuals towards self-management it is suggested here that the use of pedometers would provide a cheap, convenient yet fairly reliable (Tudor-Locke et al. 2004) means for continued self-assessment of physical activity while helping to maintain motivation. The promotion of 10,000 steps/day while giving a good guide may not, however, be relevant to everyone but using a pedometer to provide baseline activity levels in steps can be used to encourage increasing activity into everyday living. The drawback of a pedometer is that the intensity of activity cannot be measured nor is it useful for cycling or swimming (Tudor-Locke and Bassett 2004). Nevertheless it can be a useful tool to increase walking.

Concerns have been expressed about environmental factors affecting activity levels. A large Australian survey (Pikora et al. 2006) identified good walking surfaces and a range of local amenities as factors which encouraged walking but they reported that safety was not an issue that concerned walkers. In an English study, although safety was not a concern for men (Foster et al. 2004) it created some unease among women

particularly for walking at night. Those who felt unsafe walking during the day were the ones found to be least active. It is, therefore, imperative to explore with individuals what they view as feasible ways of increasing their activity levels.

Physical activity also has an effect on reducing abdominal fat, which is highlighted as a risk factor for cardiovascular disease and type II diabetes. While waist circumference is a useful and simple measurement to assess abdominal fat which individuals themselves can monitor, it is not always easy to measure. Due to this difficulty, inconsistencies of measurement can occur particularly if undertaken by a variety of professionals. This can be discouraging for the individual if results vary. On the other hand, sometimes when weight is static there is an alteration in fat distribution resulting in an improvement in waist circumference. In these circumstances, this change can be heartening for the individual. A recent systematic review by Kay and Singh (2006) pointed out that waist circumference did not always reflect the changes identified by more robust imaging methods. Furthermore, waist circumference measurement has less clinical relevance for those with a BMI ≥ 35 kg/m² as they are already known to be at risk (National Institutes of Health 2000). While acknowledging the difficulties associated with waist measurement, it nevertheless remains a useful monitoring tool.

2.5.6 Weight control beliefs

Beliefs about weight management may hinder successful outcomes. While the Health Belief Model (Rosenstock 1990) aids the identification of beliefs through the constructs of perceived susceptibility, perceived severity, perceived benefits, perceived barriers and later perceived self-efficacy, it focuses on disease rather than health. This focus on disease is apparent from research undertaken in a variety of countries (Omran and Al-

Hassan 2006; Karayurt and Dramali 2007; Lyon and Reeves 2007; Menon et al. 2007; Chang et al. 2007) and does not fit with the holistic approach.

A common misconception is the belief that obesity develops because of a low metabolic rate. While this can be true for some, it is rare. Another common belief is that obesity is genetic and therefore nothing can be done about it. While there can be a genetic component to obesity (Loos and Bouchard 2003; Clement 2006), the environment still has a large part to play. In fact it is thought that environmental factors have the biggest impact on obesity (House of Commons 2004). Therefore, it is important that health professionals educate and encourage individuals to address their weight.

In this situation the health professional should help them to change this external stable attribution by realising that although they may have a hereditary factor or a disease such as hypothyroidism they can still address their weight problem in spite of this difficulty. If they then lose weight this should motivate them to continue, particularly if they attribute the success to their own efforts and believe that they have the ability to succeed.

Past experiences of weight loss and subsequent regain may develop a belief of never being able to succeed. This feeling of helplessness may discourage individuals from trying again. Attribution theory argues that it is not possible to change this without finding the cause. Weiner (1985) provides the following analogy of success and failure to further explain *“The warrior needs to know why he is winning battles so he can survive the next one, just as the union representative needs to explain why the industry is doing poorly in order to urge wiser actions in the future.”* (Weiner 1985 p.549). Although individuals have the answers, sometimes unknowingly, to what impinges on good weight management, they need to be encouraged to focus on finding solutions to

implement changes for better weight management. The development of the nurse/individual partnership is crucial in creating optimism for success. However, weight loss induces a defence mechanism to protect body weight by decreasing the resting metabolic rate (Westerterp 1999) therefore individuals should be under no illusion that it is easy to lose weight. Awareness of that fact will counter disappointment when weight loss slows down in spite of continuing to follow the changes made in their lifestyle. Increasing activity levels help to combat the effects of weight loss (Erlichman et al. 2002) and reduce disappointment, particularly if there are unrealistic expectations.

Previous failures in weight management may have been influenced by unrealistic expectations of weight loss. Research has shown a marked difference between the expectations of individuals and the recommended target for health benefits. Individuals expect to lose 20-35% of their initial weight (Foster et al. 1997; Foster et al. 2001; Wadden et al. 2003) whereas targets currently recommended are between 5-10% with a weekly weight loss of 1-2lbs. These high expectations are probably influenced by the previous practice of advocating ideal body weight (20-24.9 BMI kg/m²). It seems that health professionals too can have unrealistic expectations of people in their care and set high goals for weight loss (Hargreaves et al. 2002). Nor do they take account of people's lifestyles, such as those who travel a lot for work purposes (Noel et al. 2005) or work shifts (Faugier et al. 2001). Many aspects of people's lives impinge on their ability to eat healthily and be active, for example, their beliefs about weight management. Physical, social and emotional pressures of everyday living also impact on how weight is managed. All these aspects are inextricably linked, highlighting the need to take a holistic approach and involve individuals in their own care.

Knowledge and beliefs about food are mostly learned from parents but ironically, obese children are the most knowledgeable regarding healthy foods (Jefferson 2006). The same study also indicated that negative feelings made them feel less in control of choosing healthy options. They also saw activity as ‘burning off food’ rather than in a positive way of giving them more energy. Although some energy expenditure occurs through the metabolism of food the thermogenic response of food on total energy expenditure is minimal (Passmore and Eastwood 1986). However, Flatt (1992) suggests that even this, in the long term, can either prevent or aid the development of obesity. Therefore, when helping obese adults whose obesity began in childhood, exploration of these beliefs may aid understanding since their behaviours will have become stable beliefs and habits. Beliefs about the effect of obesity on physical health should also be explored.

2.5.7 Physical well-being

Obesity, as noted earlier, is related to multiple co-morbidities. More specific relationships have been examined and provide information to enable individuals to make decisions regarding health status improvement. For example, the consumption of fast foods is related not only to weight gain but can lead to insulin resistance (Pereira et al. 2005). Furthermore, a sedentary lifestyle of television watching has been associated with type II diabetes in both men and women (Hu et al. 2001; Hu et al. 2003). On the other hand giving individuals information about the benefits of physical activity levels on existing co-morbidities rather than just on weight loss may assist them in decision-making. For example, a literature review identified a reduction in risks associated with type II diabetes and cardiovascular disease with weight loss as well as improvement in

physical function in back pain and arthritis, all of which are related to obesity (Teixeira et al. 2005).

In addition to the well-known link with other diseases, obesity affects individuals in ways, which are less likely to attract attention but where nurses can make a difference. Urinary incontinence, insomnia, body pain and immobility are problems that individuals may be too embarrassed to mention or feel that although important to them, health professionals would have no interest. Urinary incontinence, like obesity causes embarrassment and shame and impacts on self-esteem (Davis and Kumar 2003). Primary care nurses are well placed to assess and incorporate urinary incontinence advice into obesity management as it may impinge on the ability to increase activity levels (Brown and Miller 2001). Furthermore, it not only disturbs sleep but nocturia has been identified as a symptom of sleep apnoea (Lamberg 2003). Although sleep apnoea is one of the most documented associations between insomnia and obesity there are other causes such as polycystic ovary syndrome (PCOS), depression, stress and poor sleep habits (Merritt 2000; Vgontzas et al. 2003).

Physical symptoms from co-morbidities such as pain from osteoarthritis or cardiac disease and dyspnoea of congestive cardiac failure or asthma may also disturb sleep (Wyman 2003). This vicious circle can be reversed with weight loss and increase activity levels (Karason et al. 2000). The more recently recognised gastroesophageal reflux disease has also been demonstrated to disturb sleep and is more prevalent in weight gain and obesity (Dent et al. 2005; Suganuma et al. 2001). Insomnia is therefore related to many aspects of obesity and an important one since it is suggested that 50% of individuals with chronic disease suffer from it but physicians are either reluctant or unable to address it (Katz and McHorney 2002).

The obese are more at risk of developing pain related to co-morbidities such as osteoarthritis of the hip and knee, however weight loss can delay onset or progression (Lievense et al. 2002; Sharma et al. 2006). In addition, obesity is an independent predictor of back pain in the UK population (Webb et al. 2003). Both knee arthritis and back pain are associated with functional problems in the obese (Sharma et al. 2006; Webb et al. 2003). The incidence of developing chronic pain in women who did not exercise regularly was 2.1% but in those who are obese it was vastly increased to 24.2% (Jones and Bell 2004). These women all had severe mobility problems. Mobility problems and pain hinder physical activity and in the general population the obese are less active (Harrison et al. 2006). It should not be surprising then that the obese have poor physical functioning (Ferraro et al. 2002; Katz et al. 2000) making climbing stairs, bending and walking difficult (Banting 1869; Tsai et al. 2004). A UK population survey indicated that even those who were obese but had no other chronic condition were physically compromised (Doll et al. 2000).

Therefore addressing urinary incontinence, insomnia, body pain and immobility may be priorities in weight management while trying to increase activity levels and vice versa. Nurses are ideally placed to assess and often treat these issues. Furthermore, urinary incontinence, body pain and immobility may be related to skin problems. Skin problems in the obese individual are given scant attention in practice and in the literature. They may have particular problems with skin fold areas where friction and moisture can cause skin breakdown. These were identified by 45 (70%) individuals and reflected the results of a previous survey (Brown et al. 2004) of a comparable clinic population when 75 (75%) stated they had a variety of skin conditions. Crucially, each individual while encouraged to identify their own particular issues can be helped to

overcome or manage them better with education and support from the nurse, which may include referral to other appropriate agencies.

2.5.8 Social well-being

The social fabric of Scottish society is changing (McCrone 2001). Families no longer all live in the same area. Many factors such as the need to relocate in order to acquire further education or employment and marriage break-ups disrupt family ties and therefore the support available to individuals. Even within the home, individuals are often isolated from each other through having multiple television sets and rarely get together, even at mealtimes. In the UK only 14% of families share mealtimes and this may reflect one reason for our high obesity rates (Jefferson 2006). The advent of television has also changed eating patterns. Even for some who do eat together the tendency is to eat while watching television (Boutelle et al. 2003) thereby restricting conversation. In this situation, there is no escape from the aggressive marketing by the food industry. Television advertising of snack foods encourages over-consumption through visual senses and inferences. These foods are portrayed as being attractive and delicious while the inference is that consumption produces a desirable affect such as a feel good factor. It may be that the obese have a greater reaction to external stimuli like advertisements.

Furthermore, those who habitually watched television during meals were more likely to have a higher fat intake while those who watched less television consumed more fruit and vegetables and planned meals in advance (Boutelle et al. 2003). Planning ahead is not always easy as the pace of modern life creates pressure particularly for some working mothers resulting in a poorer quality of diet (Hargreaves et al. 2002). This may

be due to a perceived lack of skill or time for cooking leading to an increase in the consumption of fast foods. Nurses can help individuals to see the benefits of planning and explore with them how they can incorporate beneficial changes into their lifestyle thereby stimulating a sense of control over their situation.

Nonetheless, control can be compromised through cultural influences where food plays a significant symbolic role (Helman 2000). Personal experience of the researcher suggests that, in general, it is an important part of major life events, such as weddings. It is not, however, confined to 'happy' celebrations as, in Scotland, the partaking of food amongst mourners provides an opportunity to show care and support to the bereaved. In everyday situations it is also symbolic as, again in Scotland, there is a strong tradition of hospitality where, for example, visitors are welcomed with home baking or bought 'fancy pieces' and for a visitor to refuse the offering is seen as a rejection of the friendship offered (Helman 2000). While major events happen occasionally and may not have a big impact on weight management everyday occurrences are so enmeshed in our culture that making changes is not always easy particularly for older women.

If people felt they wanted to make lifestyle changes and were in control of making the necessary changes they would have less need of support (Dalgard et al. 1995). Those who lacked confidence in their ability to achieve changes would benefit from identifying sources of support. However, it may be that in spite of wanting to make changes putting plans into action may require support from others. For example, women who have the responsibility of a caring role often put family needs before their own (Walters and Charles 1997). This is evidenced by many women's views that their role is to provide family meals but the type of food they provide is in line with family

preferences (Furst 1997). The popularity of fast foods and snacks means that making changes to a healthier eating pattern may not be met with approval so reducing the control women, in particular, have over their intake at meal times. Some try to take control by preparing different food for themselves or negotiating small changes but this takes time and energy making it difficult to achieve. Although individuals are encouraged not to buy unhealthy foods to avoid the stimulus of having them in the house, thereby reducing the opportunity for ingestion, the belief that not having 'treats' available especially for children or grandchildren makes this option difficult for some individuals. Therefore it is not only external influences but also internal ones, which mean that family members can constrain efforts to change (Karner et al. 2005).

Sometimes, the reaction of spouses can be unpredictable (Teixeira et al. 2005) as illustrated in the following experience from the researcher's practice. One individual had achieved substantial weight loss with support from her husband but started to regain. It transpired that he began to routinely buy her a past favourite food of cream buns. This created a dilemma for her, as she did not feel able to reject his gifts. Later, it emerged that his motives were self-serving as he was afraid that by losing so much weight she would become attractive to other men and leave him. The unexpected turn of events reflects further the complexity of weight management. Lloyd et al. (1995) found that a lack of family support was rarely anticipated, highlighting that raising individuals awareness is important so that they can plan how to deal with difficult situations.

Support for change may come from other sources. Women, unlike men who turn to their spouses, tend to look for support outside the family (Walters and Charles 1997; van Dam et al. 2005). For those living alone peer support can be pivotal in making

positive changes (Dennis 2003) by acting as a buffer (House 1981) particularly in providing emotional support. In addition to helping individuals feel accepted for who they are (Cohen and Wills 1985) it also facilitates “*spending time with others in leisure and recreational activities*” (Winemiller et al. 1993 p.640). Another aspect is that contact with others is likely to alleviate boredom which is a common experience leading to excessive eating in those who are obese (Popkess-Vawter et al. 1998).

An example would be where friends go swimming together on a regular basis thereby becoming not only habitual but socially rewarding. For someone who is sedentary, incorporating activity into daily routines is also habit forming and therefore more likely to continue. New habits however, can be disrupted by changes in routine such as work commitments, illness, bereavement or holidays. Support in dealing with these issues can be an important part of the nurse/individual interaction particularly for those who do not perceive themselves to have support from elsewhere.

Social support is not always forthcoming when trying to make changes particularly when those around are unwilling to provide support by accommodating desired changes in behaviour and sabotage attempts (Nestle et al. 1998). Therefore, social contacts can influence behaviour through peer pressure (Cohen et al. 2001). Habits are difficult to break and individuals may conform to social pressure to avoid rejection (Aronson 1999). However, “*liking oneself more and feeling better with oneself*” (Elfhag and Rossner 2005, p.72) increases self-esteem and creates confidence. The nurse/individual relationship will play a crucial part in helping people gain the confidence to make changes particularly if they have minimal or negative support.

Gaining support from outwith the usual social circle may be possible. Nurses who have knowledge of local amenities are in a position not only to inform individuals of what is available but may be able to suggest contact with another individual who is also looking for support. Some individuals may be willing to join, for example, a local walking group. As safety is often an issue for individuals and prevents them going out (Walters and Charles 1997), being part of a group may allay their fears and encourage habitual participation.

The difficulty with increasing activity levels may be exacerbated by caring commitments. Individuals who look after ill or elderly relatives or young parents (Popham and Mitchell 2006), particularly mothers may acquire the support of sitter services either through friends or a more formal service often carried out by volunteers. There needs to be confidence in these facilities however, for carers to take advantage of them.

2.5.9 Emotional well-being

Everyday happenings can cause anxiety but each individual feels varying levels according to how they perceive these situations. Those who are attempting weight management find social interaction can cause anxiety. Since obesity, unlike some other stigmatised conditions, cannot be hidden, individuals are continuously open to the prejudice of others. Crandall (1994) purported that attitudes towards obesity were akin to racism in that both were attributed to being undisciplined and lacking self-control. However, unlike other stigmatised groups, bias against obese individuals is accepted in society (Wang et al. 2004) confirmed by their negative portrayal on television thereby contributing further to obesity stigma (Greenberg et al. 2003). These attitudes are

translated into prejudice in education, employment (Gortmaker et al. 1993; Sargent and Blanchflower 1994) and also pervasive in health care (Puhl et al. 2005) even among those who specialise in obesity research or management (Schwartz et al. 2003). Primary care health professionals are no different where nearly half the physicians viewed the obese as lazy and weak-willed and almost half of nurses felt that empathy did not come easily (Foster et al. 2003). Puhl et al. (2005) suggested that in order to reduce bias, health professionals should be educated regarding the complexity of obesity to create a greater understanding. Therefore, it is advocated here that education in tandem with using a holistic approach where respect for the individual and working in partnership with them would help dissipate current prejudices.

Prejudice is bound up with cultural influences. If it is believed that obesity in an individual is caused, for example, by a physical condition out-with their control, according to attribution theory, the individual would not become stigmatised. Anti-fat attitudes emerge when the belief that weight is under the person's control combines with cultural values that promote thinness (Puhl and Brownell 2003b). Ideal body shape and size are defined by notions of beauty (Helman 2000). As previously mentioned, in our culture at present, fashion models and celebrities who are 'stick thin' are portrayed as having the desirable body to aim for. Trying to achieve the 'body beautiful' where 70% of models are underweight (Katzmarzyk and Davis 2001) and women are becoming heavier (Spitzer et al. 1999) is not only unrealistic but unhealthy. Apart from being unrealistic for most of the population it puts extra pressure on those who are obese and adds to the difficulty of making changes. For example, if personal safety is an issue in trying to increase outside activity, joining a fitness club, if mobility will allow, may be even more intimidating. In fitness clubs the body is often exposed to the possibility of scrutiny making individuals feel uncomfortable. The same applies to

swimming. Although predominantly a female issue since physical attractiveness is related more to a woman's identity (Tiggemann and Lynch 2001) men are not immune. It seems that even in the mid nineteenth century prejudice was encountered. Banting (1869) stated that the remarks endured from others, discouraged socialisation.

Sufferers of prejudice react in different ways. When prejudice is internalised it lowers self-esteem as individuals begin to believe the views of society and blame themselves leading to feelings of guilt and shame which can, in turn, lead to anxiety and disordered eating (Tiggemann and Lynch 2001). Furthermore, the reaction is often to comfort eat in an effort to make themselves feel better. Research has demonstrated that the obese eat more in reaction to emotion (Meyer and Pudel 1972). It was detected that in an effort to improve their mood some individuals consumed excessive amounts of carbohydrate-rich foods usually at a specific time of day (Wurtman et al. 1981). However, the results of a small study by Toornvliet et al. (1997) found that carbohydrate ingestion did not provide the anticipated mood changes. This was not surprising as protein ingestion enhances the activity of the neurotransmitter serotonin (Cateron and Broom 2001) and that increased serotonin levels have been demonstrated to alleviate depression (Wurtman and Wurtman 1989).

Similarly, failure to manage weight appropriately, if internalised, creates feelings such as guilt and shame. Again, these feelings of failure decrease self-esteem. If these internalised feelings of failure continue then the probability of anxiety and depression is higher (Abramson et al. 1978). The converse is also true, according to (Hamilton and Abramson 1983), where depressed mood increases the likelihood of feelings of failure being internalised and continuing.

The association between obesity and depression has been debated over decades. While agreeing that there was a link (Stunkard 1957; Galletly et al. 1996) researchers in the 1960's and 1970's concluded that it was a frequent cause of obesity (Wolman 1982). However, there has been a radical change in this view with researchers, including Stunkard (Wadden and Stunkard 1985), now suggesting that anxiety and depression are more likely to be a consequence of obesity (Larsson et al. 2002; van Gemert et al. 1998). However, the actual weight loss itself may be the factor that affects anxiety and depression. In the obese population, depression usually decreases with weight loss (Wadden et al. 1996) and increases with weight regain (Wadden et al. 1994). As weight loss is nearly all regained within 5 years (Stern et al. 1995) there is a need for improved weight maintenance strategies following weight loss.

Weight cycling, when weight has a yo yo effect of increasing and decreasing, has been implicated in some studies but not others as having an effect on anxiety, depression and binge eating (Bartlett et al. 1996; Foreyt et al. 1995; Foster et al. 1997; Yanovski et al. 1993). While primary care nurses may be aware of eating disorders, binge eating, could be more difficult to identify. It seems that specific risk factors are childhood obesity and family overeating (Striegel-Moore et al. 2005) and should alert nurses to the possibility of binge eating, particularly if related to depression. These factors have also been related to verbal, physical and sexual abuse in childhood (Gustafson and Sarwer 2004; Williamson et al. 2002). Abuse may only come to light when the therapeutic relationship between nurse and individual has developed into one of trust. Nurses may wish to seek advice and with the individual's permission refer to appropriate agencies thus being aware of their own limitations.

2.6 Application of the literature to a conceptual framework

The literature highlighted the complex interrelationships between individuals and their weight control beliefs, physical, social and emotional well-being thus underlining the need to view and understand each person as a whole. It follows that a holistic person centred approach would facilitate the application of these concepts to practice. Consideration had to be given as to the best way of combining all these elements into a conceptual model for obesity management.

It would appear that the combination of the Psychobiological approach to obesity, Weiner's Attribution Theory and social support, provide insight into weight control beliefs, physical, social and emotional well-being of those who are obese. Both the theories and concepts, therefore, appear applicable to the development of a conceptual framework. While it is recognised that in reality individuals and their actions and reactions cannot be separated and each person is unique for theoretical purposes the concepts are listed but no priority in the order of the concepts is inferred.

However, applying knowledge from other disciplines to practice is not straightforward as any intervention for nurses needs to be viewed in the light of current nursing practice. It appears from the literature that in order to address these concepts in practice the nursing models of Roper, Logan and Teirney (2000) and Peplau (1988) would facilitate a holistic, person centred approach and aid self management. Therefore these are included in the conceptual framework. The aim is to create a safe environment where individuals can reveal intimate details and not feel that they are being judged (Peplau 1988). Furthermore, in partnership with the nurse, individuals can develop and move towards self-management.

It is proposed that the emergent conceptual framework in **Figure 2.1** be applied to research the development of a holistic nursing intervention for weight management.

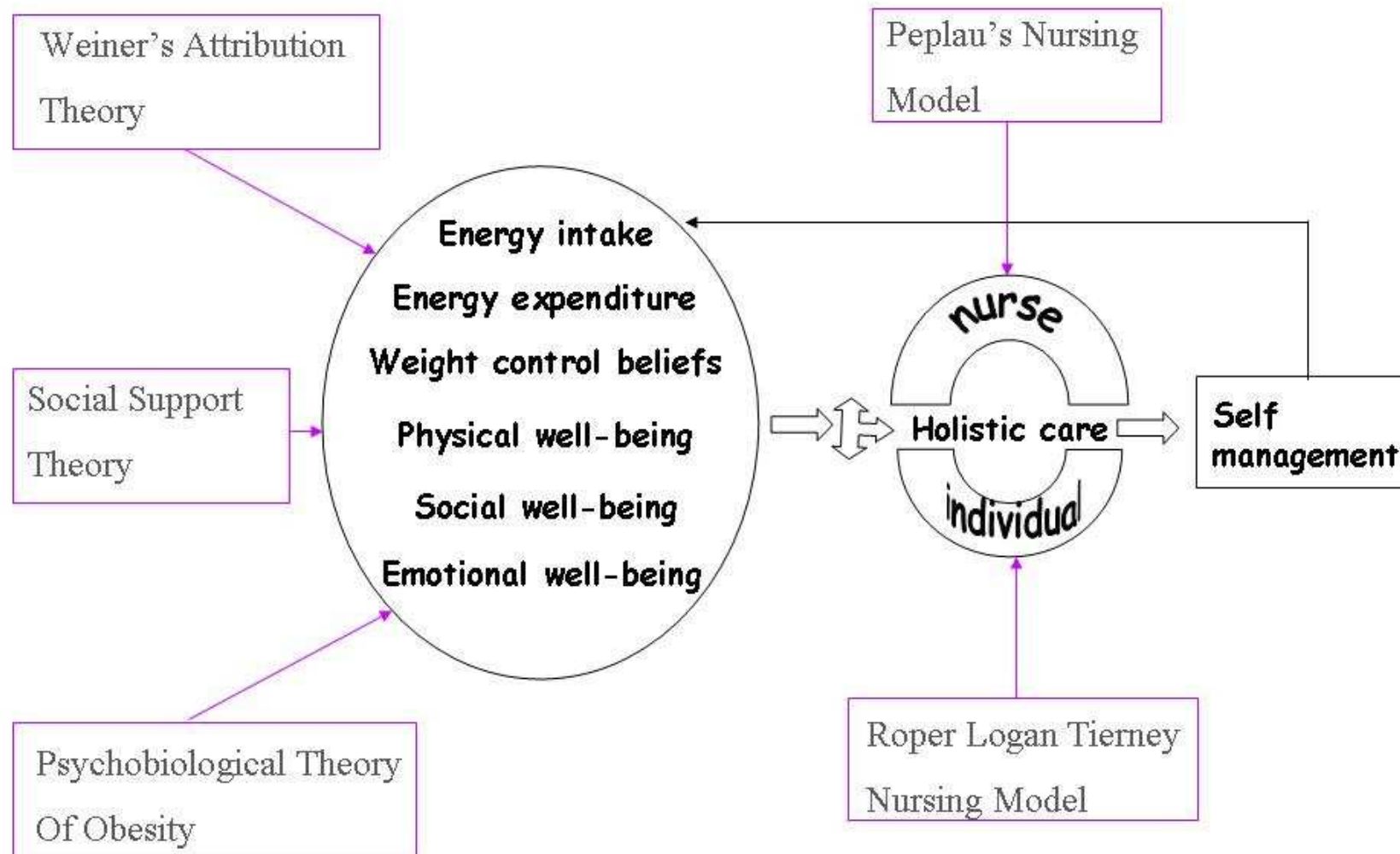


Figure 2.1 Conceptual framework for intervention and outcome

2.7 Overall study aim

The conceptual framework will guide the exploration of the study aims and objectives.

The overall aim of the study is:

- To develop and evaluate a holistic approach to obesity management for primary care nurses and obese individuals in their care.

In order to address this aim, the study was carried out in two phases. The exploratory phase provided evidence for this approach from the obese themselves whilst the intervention phase incorporated that evidence in the development and evaluation of a holistic approach to weight management. The aims and objectives for each phase as described below.

2.7.1 *Aims of the exploratory phase*

- a) To ascertain the extent of the relationship between weight beliefs, expectations of weight loss, physical, social, emotional well-being and weight management in obese individuals who did not have an identified eating disorder.
- b) To examine the changes in these variables that take place over time and their association with weight change.

2.7.1.1 Objectives

- Identify patterns of behaviour and explore how they impact on weight management
- Ascertain the association of physical well-being and weight management
- Explore the role of perceived social support on weight management

- Detect the range of emotions experienced by obese individuals and the perceived impact of them on weight management
- Examine the beliefs and expectations of obese individuals with regard to weight management

2.7.2 Aims of the intervention phase

The aim of the intervention was to implement the outcomes of the exploratory phase and evaluate impact on obesity management for primary care practitioners and obese individuals in their care.

2.7.2.1 Objectives

- Develop a person centred approach for nurses and obese individuals to work within a mutually agreed partnership
- Introduce and evaluate the approach for acceptability and utility
- Determine the level of individual satisfaction with the approach

The manner of achieving these aims and objectives is discussed in the following chapter.

Chapter 3

The research design for a holistic approach to weight management

The previous chapters have contextualised the need for developing a holistic approach to obesity management, particularly in primary care. A conceptual framework to inform this emerged through the examination of obesity perspectives from various disciplines and applied to weight management from a nursing perspective. This chapter now describes the rationale and design for the research approach. The design for the exploratory phase to ascertain the association between weight beliefs, physical, social and emotional well-being and their relevance to individuals with obesity is explained. This is followed by details of how the results from the exploratory phase were transferred into the development of materials for the planned intervention. Finally, the evaluative process to determine utility and relevance of the intervention for service development is delineated. The methodology and methods for each phase is described sequentially.

3.1 Research paradigms and rationale

Making decisions on research methodology and method is not necessarily straight forward. As Parahoo (2006) states these decisions should be based on the questions asked. Overall the study aimed to explore the complexity of obesity management and meet the requirements for nursing practice in primary care. In order to achieve that aim, consideration was given as to the most appropriate approach for data collection.

After reflecting on the different needs of the two phases laid out in Chapter 2 it was decided to take a pragmatic approach and implement a mixed methods design. This approach appears to offer a more comprehensive way of finding answers to research questions (Johnson and Onwuegbuzie 2004).

The initial exploratory phase required a design that would allow examination of the relationships between the concepts already identified in the literature review. The intention was not to intervene at this stage, nor to ascertain causal links, but simply to establish the prevalence of these relationships in obese individuals. Therefore, a correlational, more quantitative approach was taken (Parahoo 2006). To gain further insight, a longitudinal design was applied to identify changes in these relationships (Watson 1998) with weight change. This was carried out prospectively to access more robust data (Parahoo 2006). Although the dominant approach was quantitative, qualitative data was also gathered to provide illumination to some of the results (Clarke 2001). According to Parahoo (2006) different methods allow complex issues to be addressed.

The purpose of the second phase was to evaluate the implementation of the intervention developed from the first, exploratory phase. In order to reflect holism and person-centredness it was decided to take a qualitative approach to the research. In particular, the interpretive paradigm seemed applicable as it permits the multiple perceptions of both nurses and individuals to be explored and understood (Weaver and Olson 2006) in obesity management. Furthermore, it appeared that a predominately, qualitative approach would help gain insight into the process of applying the holistic approach in the practice context (Watson-Miller 2005). The process for carrying out the study is delineated in **Figure 3.1**.

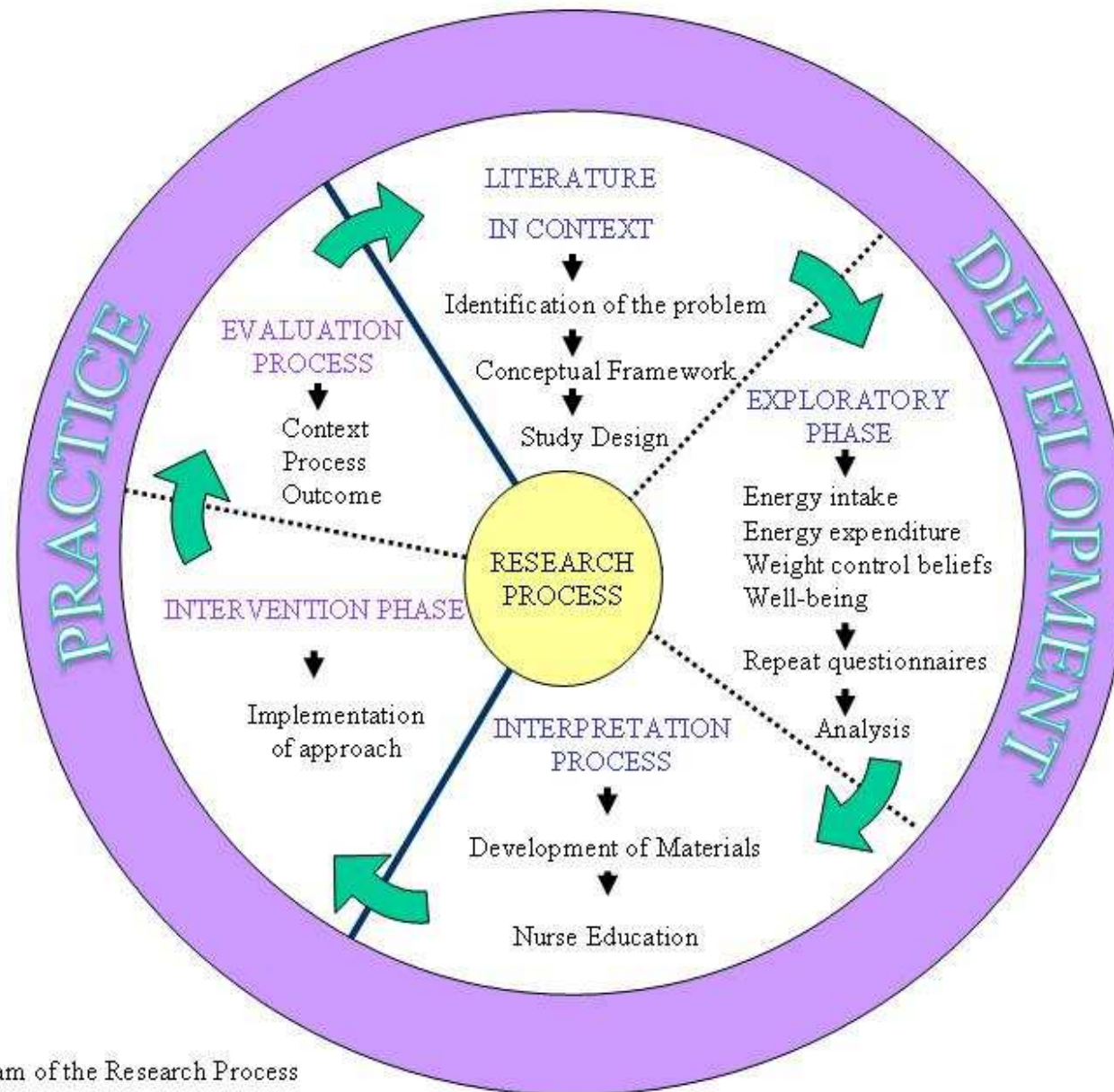


Figure 3.1 Diagram of the Research Process

Figure 3.1 reflects the research process symbolised by the wheel and spoke to indicate how the research approach in the hub is the driver to explore the cycle of phases undertaken in the study to develop practice. The sections demonstrating the developmental process and intervention phase of this approach are divided by thick spokes running from the hub to the circumference. Within each of these sections dotted lines show the different stages used. The large arrows indicate the cyclical nature of practice development and how the current study goes through one cycle.

It is acknowledged that the design of the initial exploratory phase of the research may be considered unconventional. The research design for a fairly new area of nursing practice may be expected to begin with an in-depth exploration of the phenomenon, for example, through interviews or focus groups. In this case, the literature reviewed indicated that considerable evidence to inform the intervention already existed although it was not linked. Furthermore, the broad spectrum of that information appeared to support the need for a more comprehensive approach to management. However, these components needed to be amalgamated, incorporated and understood in the nursing context. Furthermore, there was a need to explore the relevance of this, to individuals with obesity therefore, there was a need to gain their perspective to inform a person centred approach (Lewin et al. 2007). For these reasons, a survey method for initial data collection was used and the results analysed to inform the development of an intervention.

Nursing interventions require in-depth explanation as well as description and need to be viewed in context as *“The more closely that an intervention matches the manner in which the problem is experienced, the more effective it is”* (van Meijel et al. 2004 p.87).

In addition, it was important to gain both the perspectives of individuals and nurses in primary care. The qualitative methodology/method seemed appropriate to gain insights into the processes of how the intervention worked in addition to understanding the limitations of the approach.

It appears that drawing on mixed methods would facilitate the study of a person centred holistic approach as it focuses on “*doing research with and for people, rather than on people*” (Meyer 1995). As one of the objectives of the study was to produce an acceptable and useful approach to weight management it was felt necessary to involve both individuals and nurses in the development as well as the implementation of the approach. With this in mind, the methods used were considered an appropriate way to encourage empowerment for change through collaborative participation for both nurse and individual while reflecting the complexity of these changes (Greenhalgh et al. 2004).

Therefore, using a pragmatic approach provided not only the means to measure outcomes, but also to illuminate the process of implementing the intervention, thereby addressing both the science and art of nursing. By combining methods it was hoped to bridge the gap between theory and practice.

3.2 Exploratory phase

The purpose of the first phase of the study was to explore physical, social and emotional aspects of weight management with individuals. Due to the wide-ranging nature of the stated aims and objectives, survey type questionnaires were used to obtain information about demographics, attitudes, beliefs (Oyster et al. 1987; Knapp 1998; Polgar and

Thomas 2000), to establish behaviours (Treece and Treece 1986), and to examine the relationship between these variables. A prospective study design was used to gather data. Since the purpose of the exploratory phase was to identify changes over time a longitudinal design was selected as being the best method to examine these changes (Carter 1991). The reason for doing so was to inform a new intervention for weight management, from a person-centred perspective, therefore, it was necessary to recruit individuals who had a great deal of experience of managing their weight. Hence the exploratory phase was carried out at a specialist, secondary care, outpatient clinic for obesity management. Those referred to the secondary care clinic would be familiar with approaches to weight management in primary care where they would have undergone some form of weight management, either in group sessions or one to one consultations, prior to referral. Trying to identify individuals in the primary care setting was not a viable option, therefore, individuals who attended the clinic from primary care, provided a convenient sample (Blacktop 1996). The types of interventions they received would probably be diverse according to which professional was consulted and whose knowledge and views of weight management may differ. The secondary care clinic covered a wide geographical area thereby providing access to a study population from city, suburban and rural areas who were often referred back to primary care for follow-up particularly if they lived a distance away.

To facilitate this method of data collection a questionnaire was developed using the conceptual framework, as described in chapter 2. Since the questionnaire was to be administered three times over a six-month period as explained below, booklets for each individual were compiled. Each booklet had three colour-coded questionnaires for easy identification at each visit. The time between visits was organised to coincide with clinic visits, which were usually 3 monthly, to lessen disruption to both individuals and

health professionals. It was also to try and minimise the loss of individuals to the study, which according to Watson (1998) is one of the problems with a longitudinal design.

3.3 Questionnaire design

The questionnaire (APPENDIX 1) was divided into sections to gather information on demographics, weight beliefs, weight loss expectations, physical, emotional and social aspects of weight management. Thus the questions resulted in the following information being collected.

3.3.1 Demographic information

General demographics of gender, age, marital status, household members, and occupation were collected to provide a picture of the context in which individuals lived. These were forced-choice questions with the exception of occupation, which was written in text and later coded for analysis according to the classification by the Office of Population Census and Surveys (1991). A history of the weights of the individual and their family members was also obtained.

3.3.2 Questions on the physical aspects of weight management

As both co-morbidities and lifestyle are implicated in physical well-being, questions about the physical aspects of weight management included standard measurements, co-morbidities, treatment, symptoms, functional ability and activity levels. The standard measurements of weight, height, Body Mass Index (BMI), body fat percentage, blood pressure and waist measurement (where appropriate) were extracted from the clinical data sheets while obesity related co-morbid data and treatment were obtained from patient notes. Treatment and co-morbidity questions were multiple choice with an

'other' category to permit further individual information to be included. Information about alcohol and tobacco usage in addition to dietary prescription was obtained. Ordinal scales of 1-10 were to assess severity of symptoms. The same measures were repeated in order to assess any changes over time. A 'not applicable' box was available should any symptom not apply.

It was decided to use five point Likert type scales (Likert 1932) to gain information and so start building a picture of everyday function and activity. This type of scale also allowed the assessment of changes over time that may be associated with weight management. Perceived functional ability detail was measured by assessing the frequency of difficulty with walking, going up or down the stairs, bending or stooping, getting in and out of the bath, dressing and doing household chores. The same Likert scales (Sechrist and Pravikoff 2001) were used to gain information on how often individuals chose to walk, take the lift, use the stairs and travel by car, bus or taxi. Similarly, to try and assess social activity, information on how often individuals spoke to family and friends, went out with them or had them visit was assessed on the same Likert type scale (Likert 1932) in addition to how often individuals went out on their own.

A different question design was selected to explore leisure activity. The matrix design was chosen to provide more comprehensive detail of activities and although more difficult to construct (Polit and Beck 2006) was more easily encoded and analyzed (Polgar and Thomas 2000). The aim was to continue building up a picture of everyday activity by accruing details of both active and passive pastimes during the course of a week. The difficulty was deciding on the time scales to employ as activities such as swimming would not be expected to last as long as, for example, watching television.

A variety of activities were suggested with three extra unspecified scales to allow individuals to add their own particular different pastimes.

3.3.3 Questions on the social aspects of weight management

Exploration of social aspects of weight management involved identification of the levels of perceived support which individuals felt they had from family, friends, colleagues, health professionals and community contacts. In an effort to cover all types of family situations, that section included husband/wife/partner, children, parents, other household members and an option to identify any other person. The friends section included both close friends and acquaintances. The work section included supervisor/manager and colleagues. The health professionals section covered general practitioner, specialist doctors, nurses, dietitians to try and identify the perception of support from those involved in weight management. As everyday contacts were thought to influence the level of support individuals feel they have, the general contacts section included clothes shop assistants, leisure centre staff and school/college staff. This section, like the other sections under social support, provided an option to identify 'other' supportive/unsupportive people. There was also a 'not applicable' option for each variable. Ordinal scales were the means by which data was collected and further information was gathered through a comments section.

3.3.4 Questions on the emotional aspects of weight management

To detect emotional aspects of weight management, questions were formulated to gain data about feelings, beliefs, expectations of weight loss, body satisfaction, anxiety and depression. Feelings and body satisfaction were assessed on ordinal scales of 1-10, as in other sections, to make data collection more consistent and analysis easier. However,

this section did not provide a 'not applicable' option as everyone experiences feelings. Examination of beliefs and expectations of weight loss on the other hand used Likert scales as these are more appropriate for attitudinal data (Sechrist and Pravikoff 2001). However, these methods did not allow more in-depth information to be gathered (Oppenheim 1992) so these questions were followed by an option to clarify or explain answers. Beliefs about weight management were thought to be an important aspect of motivation, particularly the level of control individuals perceived themselves to have over their weight. These beliefs may affect how much weight individuals expect to lose and what they perceive as success, especially if they have unrealistic expectations. Perception of failure and a lack of control may be associated with anxiety and depression.

Anxiety and depression was measured using the Hospital Anxiety and Depression Scale (HADS), (Zigmond and Snaith 1983) and incorporated into the questionnaire (APPENDIX 1). HADS is a validated tool to assess the prevalence and changes in anxiety and depression levels. Permission from Zigmond and Snaith (APPENDIX 2) was obtained to include the HADS in the questionnaire. The reason for choosing this scale was that it separates anxiety and depression while aiming to detect the presence of mild degrees of mood disorder in non-psychiatric patients. It also assesses the present state of mood that permits detection of changes over time and has the advantage of being brief, easily understood, with good reliability and validity. It has been used in different settings and issued in many languages, indicating cultural diversity (Herrmann 1997). Careful construction of the questions was required to allow patterns to emerge over three visits.

3.3.5 Face validity and internal consistency/Quality assurance in research design

Robust data will only be accessible if the questions asked are adequate and relevant (Parahoo 2006). Therefore, content was important. To ensure face validity of the questionnaire, it was reviewed by a hospital medical consultant and senior dietitians, all of whom were experienced in managing obesity. In addition, a researcher with experience of health surveys reviewed the questionnaire. After taking into account their comments and making small adjustments, the questionnaire was ready for piloting.

Further testing for internal consistency was undertaken. This was carried out after the first round of the questionnaire to look for consistency in response. The dimensions tested within the questionnaire were functional difficulty, perceived support from family, friends and colleagues, positive and negative feelings, internal and external beliefs and body satisfaction. Cronbach's alpha-coefficient was applied as it "*measures the extent to which item responses obtained at the same time correlate highly to each other*" (MacInnes 2003, p.58). They ranged from α 0.64 to α 0.93. According to Anthony (1999), the acceptable level for Cronbach' alpha-coefficient is 0.7 for this type of research. However, as all but one of the correlations were greater than α 0.70, no amendments were made. Therefore, the researcher was confident that the questions were applicable, that is, would gain answers to what was asked.

3.4 Pilot study for the exploratory phase

Prior to administering the questionnaire in the exploratory phase and testing for internal consistency it was vital to know how individuals would respond to the questions. That is, would they consistently understand the format and instructions for answering the questions and were the questions relevant to their weight management (Parahoo 2006).

Carrying out a pilot study by administering the questionnaire to a small sample of individuals attending the clinic was therefore undertaken. Another aim of the pilot study was to try out administrative processes at the busy clinic. Based on these findings any necessary changes were made.

Before commencing the pilot study, discussions took place with colleagues involved in the clinic to gain their co-operation so that there would be minimal disruption to both staff and individuals. A letter of invitation to the pilot study (APPENDIX 3) was sent out prior to clinic appointments to twelve individuals allowing them sufficient time to decide whether or not to take part. All of these individuals had a BMI ≥ 30 .

Since mailed questionnaires would have been more likely to be discarded (Barker 1991), thereby reducing the response rate and thus the validity (Polgar and Thomas 2000), the data was gathered at the specialist clinic. This was achieved prior to any intervention by clinic staff to reduce possible impact on responses. One person refused, one did not attend and ten completed the questionnaire. Individuals with a BMI ≥ 30 were recruited over a two-week period after giving written informed consent. A room was made available for the study and an explanation about the questionnaire given by the same researcher who then left the individual to complete it in privacy to protect their rights (Polgar and Thomas 2008). Individuals were invited to give feedback about the questionnaire format. They were also eager to elaborate on personal issues raised by the questions. This seemed to confirm that the questions were very relevant and provided additional information to the evaluation sheets they were asked to complete.

However, it posed a difficulty for the researcher as some of the individuals participating in the study knew her as part of the clinic team thus making it challenging to

differentiate between the roles of researcher and practitioner. The researcher reflected on the effect her role and presence could have on the way individuals responded (Parahoo 2006). As a result, clarification of the researcher's role was considered prior to the exploratory phase being undertaken. In addition, scrutiny of both the evaluation sheets and the pilot questionnaires led to slight adjustment of two questions in order to achieve more precise responses in the exploratory phase.

3.5 Exploratory phase

Following the pilot study and the revisions to the survey questionnaire the exploratory phase was initiated.

3.5.1 *Sample*

It was not feasible to carry out research on the whole clinic population of 474 due to costs and researcher time. The aim was to have a representative sample of the clinic population. Therefore, sample size, characteristics, setting and response rate were considered (Parahoo 2006). In order to achieve this purpose, consideration was given to clinic organisation, sampling methods and the overall aim of the research. A three month recruitment time was set for the study in an attempt to gain access to all return patients so that they would each have an equal chance of inclusion. Individuals were identified according to appointment time. Consideration was given to the sample size as in longitudinal studies there is a risk of a higher attrition rates (Watson 1998). However, it was anticipated that attrition rates would be similar to those for clinic appointments as data was not being collected outwith usual appointment times. Recruited individuals also had to fulfil the following criteria:

Male or female aged 18 or over.

BMI equal to or greater than 30

Not receiving concurrent psychiatric care

Had previously attended the clinic

Willing and able to give informed consent

3.6 Exploratory phase data analysis

The statistics package for the social sciences (SPSS 11) was used to analyse the data in the following order. The total sample was examined first, then the individuals grouped by weight gain, 0-5% body weight loss and >5% body weight loss. After these three groups were identified differences and similarities between the groups were examined. In addition, changes within groups were established. Analysis was therefore of primary, secondary and tertiary types.

3.6.1 *Primary analysis*

To gain an overview of the study population, descriptive statistics were applied systematically by working through the questionnaire. To provide an overall picture of the study population, demography, treatment, co-morbidity and weight history data were analysed by frequencies and crosstabs.

The data of scaled items in relation to each of the symptoms, each variable in the social support section, each feeling and each variable in the body satisfaction section were also analysed by descriptive statistics. In particular, modes identified the frequency of their severity indicating various physical, social and emotional issues for individuals. Likert

scales were analysed in the same way. The HADS questionnaire was scored by hand following the coding system laid down by Zigmond and Snaith (1983).

3.6.2 Secondary analysis

To make the data more manageable for this particular phase of the analysis each variable, with an ordinal scale of 1 to 10, was collapsed into nominal data to produce three categories: a score of ≤ 3 being classified as low, scores 4-7 being classified as moderate and scores ≥ 8 being classified as high. Likert scales were also collapsed to give three scores. Each of the ordinal scales within the sections for support from family, friends, work, health professionals and general contacts were combined to provide a mean score for each section. Body satisfaction scales were treated in a similar manner. Feelings, although analysed in the same way were first divided into positive and negative sections. Each leisure activity was also recoded into active and inactive to assess the amount of time being active as well as inactive.

To explore the strength of the association between various aspects of weight management for the whole cohort the full ordinal scales of 1 to 10 were analysed using Spearman's rank correlation. Negative correlations, where one variable increases and the other variable decreases, were preceded by a minus (-) sign. Once this was completed for the total study sample, the individuals were divided into three groups of weight gain, 0-5% body weight loss including those who were weight stable, and >5% body weight loss and Spearman's rank correlation reapplied.

3.6.3 Tertiary analysis

One-way Analysis of variance (ANOVA) or the Kruskal-Wallis non-parametric equivalent test was selected when the data was not normally distributed to examine the differences between the groups. ANOVA is concerned with testing means and there is some debate about whether ordinal data can be regarded as numerical for analysis purposes (Kinnear and Gray 2000). The advantage of using it in this study was that the three groups could be analysed simultaneously. Confidence intervals were set at 95%. In addition, the longitudinal nature of the study permitted changes over time to be examined within individuals. For this purpose, paired t-tests or Wilcoxon matched pairs tests were carried out. Paired t-tests are robust measures but if the data are not normally distributed, Wilcoxon matched pairs test is less resistant to outliers and therefore may be more appropriate for rank based data (Greer and Mulhern 2002).

On the basis of the results from the exploratory phase the relationships of the various beliefs, expectations, physical, social and emotional dimensions identified by the conceptual framework appeared to be applicable to weight management. Furthermore, differences were demonstrated within the dimensions between those individuals who gained and lost weight. These results were used to develop and inform the intervention phase of the study in primary care. While the aim of the intervention was to provide a comprehensive person-centred aid to weight management, consideration was also given to the time involvement for primary care nurses.

3.7 Interpretative phase.

The results of the exploratory phase were taken and considered in respect of significant relationships amongst physical, social and emotional factors. These results were used to

develop a booklet for individuals and nurses to work on together. As this approach was different to usual practice a booklet for nurses was also developed. Therefore two booklets were developed. (inserted in pocket of rear cover): an A5 booklet for individuals entitled 'My Personal Approach to Weight Management' and an A4 booklet, 'A Holistic Approach to Weight Management', for nurses.

3.7.1 Nurse booklet

The booklet for nurses contained background information about obesity for educational purposes. It also aimed to provide an explanation about implementing the holistic approach to obesity management. Interspersed in the booklet were six activities for nurses to complete, including two case studies and at the end, websites and other sources were cited to enable nurses to further their learning. In addition to the booklet, nurses were provided with a box of materials, some of which were produced by the researcher, and listed in APPENDIX 4. These materials were compiled to aid nurses in weight management practice and the implementation of the study.

3.7.2 Individual booklet

The underlying philosophy of the booklet 'My Personal Approach to Weight Management' was to help individuals participate in their care in a meaningful way and facilitated assessing, planning, implementing and evaluating care in what Roper, Logan and Tierney (RLT) termed 'individualizing nursing' (Roper et al. 2000). Rather than being bombarded with advice, this approach aimed to assist individuals to discover facts about themselves by completing the initial part of the booklet on their own, up to and including the 'Weight Management Map'. However, there was flexibility as nurse and individual could complete it together if necessary as it was recognised that not everyone

is literate or at ease with completing forms. The aim was to provide a more structured but person-centred way to identify areas, which needed to be changed in order to improve weight management.

3.7.3 Cover design

In an effort to facilitate change, great care was taken in the wording of the booklet for individuals to create an atmosphere of encouragement rather than blame. The logo on the front cover of the booklet was also designed to be user friendly. It represents the individual's journey, beginning with where they meet with the nurse in a non-threatening environment and work together on the various aspects of weight management which are indicated by the various coloured arrows. The cyclical nature of the coloured arrows leads towards a fainter arrow, indicating a move towards self-management. In order that individuals can work towards self-management Peplau (1988) describes the relationship with the nurse as being "*on a continuum*" (p.55) where the nurse provides support in various ways according to the psychological needs of the individual at a particular time. As individuals have these needs satisfied they may become more able to self-manage their weight. Roper, Logan and Tierney (2000) also view individuals as moving on a continuum between dependence and independence with the level of independence varying with changing life experiences.

3.7.4 Question design

Questions in sections one to five of the booklet "My Personal Approach to Weight Management" are designed to assist individuals consider various aspects of their weight management experience:

- why their weight began to increase
- existing and potential health factors associated with their weight
- the influences of home circumstances
- past experiences of ‘dieting’

It was anticipated that these first sections would start to stimulate thoughts of influences in a variety of areas before going on to complete the ‘weight management map’. The map was designed to further this process through the incorporation of data from the experience of individuals in the exploratory phase. Examples of what these individuals found influenced their weight were provided to stimulate thoughts for those in the intervention phase to help them complete their own personal maps. Consideration was given to the number of examples to be provided, as a long list in each may be viewed as simply a choice option and not help to stimulate their own ideas. However, a fuller list from the exploratory phase was provided in the nurses’ box of materials to aid recognition of the possible range of weight associations. After completing the map it was anticipated that the individuals looking at the associations between the variables would trigger thoughts and result in action planning in Section 7 onwards.

3.7.5 Weight management map

The weight management map fits with the holistic approach. It is based on the mind-mapping concept and employed to support individuals in decision making and establishing goals (Buzan and Buzan 2000). The layout of the map allows individuals to set their own priorities and takes the emphasis away from weight. It is relevant too in that the individuals themselves often have the answers, even if they are unaware of it. According to Irvine (1995) mind mapping is a useful instrument if individuals take responsibility for their own learning. She found that in nursing education, learning by

the mind mapping method was more meaningful. Likewise, it could be suggested that if individuals can be encouraged to think about what affects their weight management they may be more likely to set relevant goals to achieve this aim. In similar vein, Kathol et al. (1998) proposed that the maps could stimulate discussion between student and tutor, or in this case between individual and nurse.

The use of personalised mind maps rather than everyone receiving the same advice focuses very much on the individual from their perspective. Furthermore, it facilitates a holistic approach as the advantage of mind-mapping is that the “*interconnectedness of one patient problem to another, connections that are vital to successful patient care*” (Mueller et al. 2001, p.75) can be seen more clearly. Like the Grief Map developed by Clark (2001) the maps in this study are not prescriptive but used for assessment and education as well as a therapeutic tool.

3.7.6 Goal setting

Goal setting is part of the planning stage where both “*each actual and potential problems*” (RLT 2000, p.137) are addressed. For example, in the acute setting, it is crucial to set goals for every problem, but in weight management, goals should be set gradually rather than all at once if long-term changes are to be achieved. Nonetheless, Roper et al (2000) would agree with the clearly defined acronym SMART goals, taken from the world of industry, which suggests that goals should be **S**pecific, **M**easurable, **A**ttainable, **R**ealistic and **T**ime bound. Setting written goals provides an opportunity for the nurse to give positive feedback on achievements but also acts as a catalyst to discuss with individuals why some plans worked and others did not. Although Roper et al. (RLT) (2000) are more focused on goal setting by the nurse, this study was designed to encourage individuals to take more control. By writing the goals themselves,

individuals may take ownership of their plans and begin to monitor themselves as part of the evaluating stage (RLT 2000). Once goals have been set, self-monitoring is important in raising awareness of what aids or hinders weight management (Poston II and Foreyt 2000).

In addition to recording goals and levels of attainment a reward system was put in place. In other words, both short and long-term goals are set in line with Roper et al. (2000). People with obesity often feel that they do not deserve rewards therefore trying to change their mindset is important in raising self-esteem. By incorporating a non-food reward for themselves, for example a massage, individuals may be helped to strive more to reach their goals and see their efforts as being worthwhile. The cycle of achievement and reward is motivational on condition that the goals are not too easy (Weiner 1991). With each success comes a more consistent anticipation of future success (Weiner 1985). If goals are not achieved, however, self-esteem may not be protected if the individual internalises the reason for failure, creating feelings of guilt and shame (Weiner et al. 1987). It is therefore a difficult balance. Sometimes if the individual has not put in the effort they will blame external circumstances but they can be encouraged to learn how to deal with similar circumstances more appropriately in the future. The real test is whether or not theory works in practice.

3.8 Intervention phase

As in the exploratory phase, consideration had to be given to the methods used to evaluate the holistic approach keeping in mind the purpose of the intervention. One objective was to provide support for nurses to enable changes to occur (Mitchell et al. 2005), in a way that recognised their existing knowledge and skills while making available to them additional knowledge and guidance. A variety of approaches to

education were considered. As printed materials on their own appear to have minimal impact (Grimshaw et al. 2001; Freemantle et al. 2006) outreach visits (O'Brien et al. 2006) appeared feasible and desirable and fit with the holistic approach.

Nonetheless, the researcher recognised, from previous experience, that initiating change may sometimes be restricted by the context of nursing practice. Therefore, the aim was to be flexible in response to the fact that each nurse was the expert on their own situation (Holter and Schwartz-Barcott 1993). Taking these issues into account may aid evaluation of the approach through interviews by helping nurses feel that they would not be judged by their reflections.

The holistic approach was designed to facilitate nurses' respect for each individual as an expert who has knowledge of their own life, and work with them in partnership to encourage them to reflect on their current situation (Koch et al. 2002) thereby enhancing self-management (Koch et al. 2004)..

A longitudinal type design was again used but as no single method could address the complexity of this phase (Flemming 2007) a more qualitative method of data collection was required. In order to evaluate the holistic approach in practice, the design of the intervention phase aimed to facilitate the exploration of the process of implementing the approach in the context of primary care. Therefore, to carry out this phase of the research PNs were targeted for recruitment as they represented primary care staff in obesity management (NICE 2006). Furthermore, PNs targeted individuals already known to them who might benefit from weight management thus protecting the confidentiality of individuals (Soteriou et al .2005).

3.8.1 Accessing nurses

In recruiting practice nurses the aim was to invite those who had experience of working in general practice and were willing to participate in the study. At the outset, access proved difficult as some gatekeepers viewed obesity management as strictly the domain of dietitians. After several local meetings and much discussion it was decided to target nurses Scotland wide to avoid further delays. A national body was contacted and agreed to email all their members with details of the project. The initial response was very poor until one practice nurse involved her nurse advisor. This ‘champion’ percolated information to practice nurses at one of their regional meetings by means of a flier (APPENDIX 5). A delay in the recruitment of some of the PNs who expressed an interest was due to them being at a crucial stage in their chronic disease diploma education. Eventually, a one-hour meeting with twelve interested practice nurses was arranged where study materials were dispensed following a presentation. Originally it had been envisaged that a study day be held to enable all participating nurses to develop their understanding of obesity. However, due to the widespread geographical location of the participating nurses, their individual time constraints and lack of funds to release the nurses from work, this plan had to be amended. Interest in the project was expressed by pharmacy and public health leads but they were not included in data collection as practice nurses were the targeted group.

Having initiated the project with one group of PNs, a second meeting with a different group of practice nurses, arranged by another ‘champion’, was proposed. However, the meeting did not materialise, due to time pressures for both individual practice nurses and recruitment deadline. Consequently, these nurses were visited individually by the researcher at their place of work, where a one-hour session on the study took place. The outcome from these visits meant that further recruitment was unnecessary, as the

target of recruiting ten nurses had been exceeded. The judgement of sample size for the intervention phase was based on gaining adequate in-depth data to understand the context and process of obesity management in primary care without being overwhelmed (Sandelowski 1995). The final group of 18 nurses comprised practice nurses, nurse practitioners, specialist practice nurses and a nurse advisor but to protect anonymity they are all generally referred to as practice nurses or nurses.

3.8.2 Data collection

Several methods were used for data collection to access both complementary and differing aspects of putting the intervention into practice (O’Cathain et al. 2007). Field notes, background questionnaires and interviews with PNs, the booklets and individual physical measurements and satisfaction questionnaires from the obese were all used to obtain data as shown in **Table 3.1**

Data collection methods			
Individuals	Booklets	Questionnaires	Physical measurements
Nurses	Field notes	Questionnaires	Interviews

Table 3.1 Table of data collection methods for individuals and practice nurses.

Field notes (Ritche and Lewis 2003) were accrued throughout the study. They aided organisational aspects of the study in addition to providing a greater understanding of each practice and the nurse’s role within it.

3.8.3 Questionnaires

Two questionnaires were formulated for this intervention phase, one for nurses and one for individuals with obesity. The nurse questionnaire (APPENDIX 6) was devised to obtain general background information about participating nurses. The questions were devised to obtain demographic details, current practice area and their approach to weight management. The questionnaire for individuals (APPENDIX 7) was developed to gain insight into what individuals thought of 'My Personal Approach to Weight Management' booklet and their experience of using it. This was to complement the booklets themselves, which were also part of the data collection. The aim was to assess whether or not the individuals receiving care found it relevant to their needs. Relevance is an important aspect of evaluating the quality of care (Clarke 2001). The questions constructed in both questionnaires were a mixture of forced choice, closed and open questions to facilitate as much data as possible to be assimilated, although it should be noted that questionnaires by their nature are restrictive in data gathering (Roberts et al. 2001). Careful consideration was given to the warning by Roberts et al. (2001), who wrote "*Attention to the construction and design of a questionnaire is imperative, especially for self-administration where there are limited opportunities to expand on meaning*" (p.19).

In addition to the questionnaires, a separate sheet (APPENDIX 8) was produced for nurses to document physical parameters of each individual they recruited. Measurements of height, weight, waist and blood pressure in addition to age were requested. The materials were collated in a ring binder and box file, which also contained some extra practical items to aid practice (APPENDIX 9). At the end of the study, interviews were carried out to gain further insight into the context in which the PNs practiced and their experiences of using the holistic approach.

3.8.4 Interviews

Careful consideration was given as to the method of data collection for gathering information regarding the experience of PNs using the holistic approach. Focus groups would have been less time consuming (Daly and Carnwell 2001) but the idea was quickly discarded for the following reasons: in addition to the logistics of gathering everyone together which was not possible due to the geographical spread and time constraints, it was felt that some nurses might be inhibited by the presence of senior colleagues in spite of belonging to a cohesive group. Individual interviews were therefore selected as a means of obtaining rich data as they “*can be versatile, flexible and adaptable, adding to understanding of events and thus enhancing the process of evaluation.*” (Roberts, et al. 2001, p.23). Furthermore, interviews are a useful tool for exploring complex interventions (Clarke 1999). Telephone interviews were selected as the best option due to the travel distances involved for the researcher and to keep costs down (Barker 1991). The drawback of this type of interview is that since they are not face-to-face, non-verbal reactions cannot be observed. However, the advantage of carrying out interviews which are not face-to-face may reduce the pressure on the PNs to participate (Parahoo 2006), particularly when carried out at the end of the study.

On the other hand, as the nurses and researcher had previously built a rapport and hopefully trust, it may have been easier for them to freely express their opinions. The added dimension of both the researcher and PNs being female and practising nurses may have helped the PNs to be more willing to share what they perhaps perceived as being common experiences (Fielding 1994; Wibberley and Kenny 1994).

The interviews were semi-structured to explore the context, process and outcomes of using the holistic approach in primary care. This type of interview was selected as it

came at the end of the study. This meant that data already collected could provide a basis for more focused questions (Clarke 1999). Nevertheless, to gain insight into the nurse experience of using this approach demanded that the structure was not too rigid. The ongoing data collection through the nurse background information sheet, field notes and practice visits influenced the formulation of open questions. For example, it became apparent that there were issues concerning the continuing education of PNs. Interview schedules (APPENDIX 10) were developed using questions to cover the main areas whilst flexible enough to permit exploration of some areas in more depth. PNs who were unable to recruit individuals also agreed to be interviewed. Therefore, another more appropriate schedule (APPENDIX 11) was devised by omitting the questions about their experience of using the approach and the data produced from these interviews provided further insights.

3.8.5 Carrying out the interviews

Of the 18 participating nurses 16 agreed to a semi-structured, telephone interview, which was tape-recorded. Apart from one nurse, who had to cancel due to work commitments, all nurses who recruited individuals were interviewed. Of those interviewed, 7 nurses had been unable to recruit individuals but their contribution provided valuable insight into implementing nursing research in primary care in general and obesity research in particular.

The telephone interviews were arranged at times suitable to the PNs. Prior to recording the interviews, suitability about the timing was confirmed to avoid interruptions, assurance sought on their continued willingness to participate and confidentiality reiterated. The approximate length of time for the interview was established as being 40-50 minutes with the proviso that they could terminate it at any time.

The interview guide developed by the researcher ensured that the main topics were covered. However, open-ended questions encouraged PNs to talk freely about their work and experiences of using the holistic approach to weight management. Techniques such as clarification and non-directive probes helped obtain accurate responses (Parahoo 2006). The nature of these interviews sometimes resulted in scheduled questions not being followed in order.

During the interview the researcher endeavoured to listen attentively as it has been shown that this is crucial to good interviewing (Ritchie and Lewis 2003). This enabled cues to be identified for further exploration, perhaps at a later time in the interview. Time was also allowed for silences when it was sensed that interviewees were thinking. On completion of the interview they were thanked and asked if they had any questions.

There were, however, limitations to this process of interviewing. Repeat interviews may have provided the opportunity for more robust data to be elicited. The potential for bias may have been avoided had someone other than the researcher carried out the interviews.

3.9 Intervention phase data analysis

The analysis contained both quantitative and qualitative data to try and capture the intricacies of human interactions (Sandelowski 2000) in addition to outcomes. Nursing research, according to Clarke (2001) *“is not only about measuring the effectiveness of particular interventions..., but also about illuminating the processes going on within nursing care”* (p.12). Therefore, although quantitative analyses measured outcomes the qualitative data provided clarification about the process of arriving at these outcomes. The analysis procedure can be seen in **Figure 3.2**.

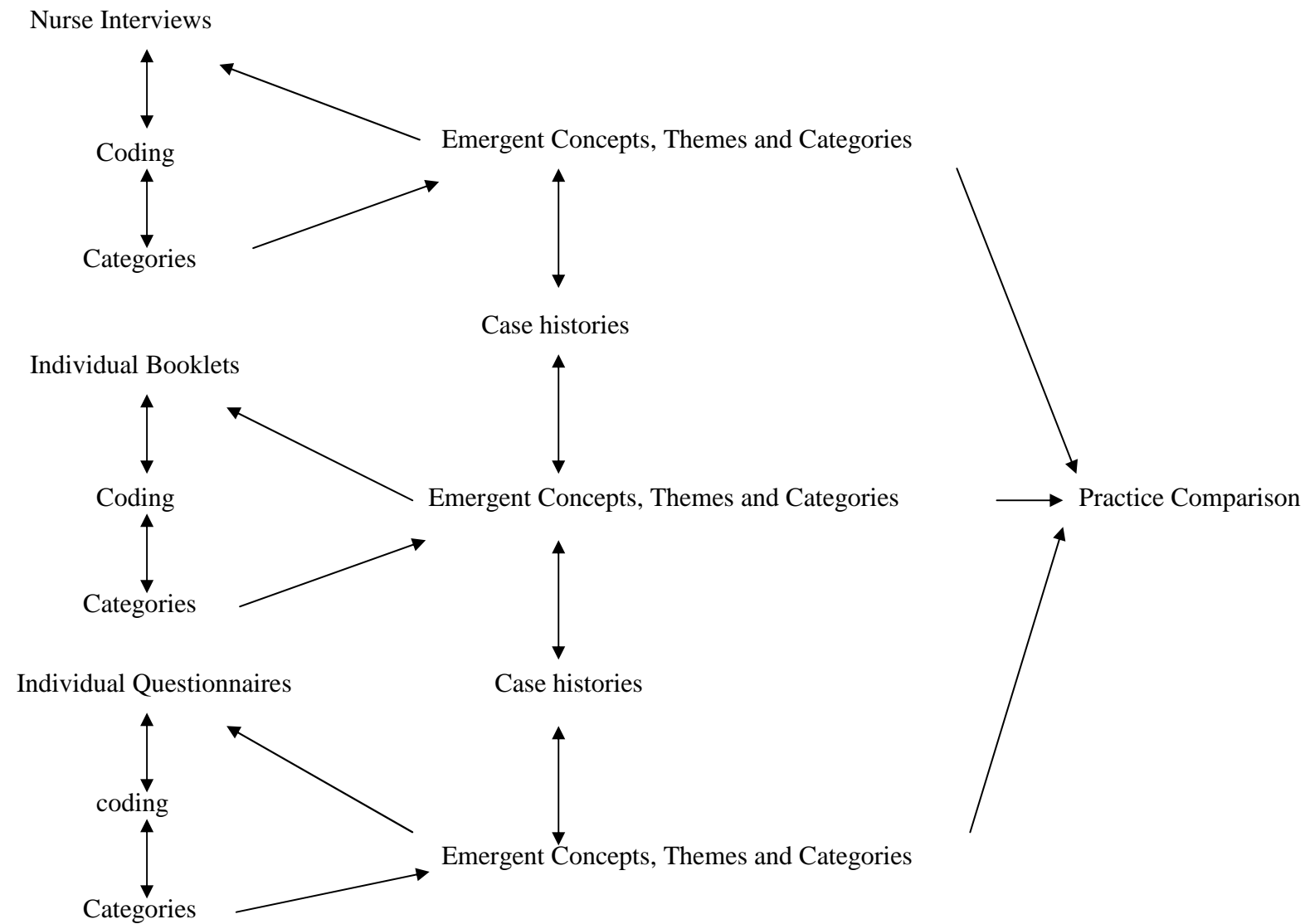


Figure 3.2 Analysis Framework for the intervention phase data

3.9.1 *Concurrent data analysis*

Analysis of quantitative data in the intervention phase was carried out using SPSS 13. Two databases were created, one for nurses and one for individuals. The nurses' database contained demographic details and information from the coded background questionnaire. The database for individuals contained similar information with the addition of physical measurements and coded quantitative information from the booklets. Qualitative data was obtained from individual booklets, nurse interviews and field notes. Initial analysis provided details for individuals and nurses as separate groups. Data from individuals in the primary care setting allowed comparisons to be made with the individuals from the secondary care out-patient clinic. This was particularly relevant when assessing the validity of using individuals in different settings. Secondary analysis treated each practice as a unit to allow the process and outcomes of implementing the holistic approach to be identified.

Before secondary analysis could take place, the researcher transcribed the nurse interviews verbatim. These transcripts were read repeatedly before being coded. Significant statements in the transcripts were highlighted and coded in the margins, often being recoded manually as data analysis progressed (Miles and Huberman 1994). Copies of the coded statements were cut into clusters on a large board to develop categories, keeping in mind the broad themes of context, process and outcome. Qualitative data from the individual booklets, questionnaires and field notes, were treated in a similar manner before being combined with interview transcripts to identify emerging concepts. Personal biases were set aside as much as possible during analysis in an effort to ensure validity.

Descriptive displays of data were analysed firstly to look at within-case analysis (Kinnear and Gray 2000) for nurses to build up a picture of the PNs who participated in the study. This was repeated for individuals and aided changes over time to be identified. After examination of the within-cases, data was organised by for each practice. Conclusions were drawn from the data and explanatory displays arranged to identify emergent themes (Miles and Huberman 1994).

In an effort to understand not only the similarities but also the differences the emergent themes from the exploratory phase analysis were applied to two case studies: the practice where individuals lost most weight and the practice where most individuals gained weight. On completion of data collection and analysis, respondent validation was sought by taking the results back to the group of nurses who participated in the research (Ritchie and Lewis 2003). The response confirmed the interpretation of the data by the researcher. Before going on to present the results, the ethical aspects of both phases are now considered.

3.10 Ethical considerations

It is crucial that ethical considerations be addressed prior to any research procedures being undertaken. While there were some common ethical aspects between each phase of the study, there were also differences. However, there was one overarching premise that applied to both phases, in that, according to Hippocrates, the greatest ethical imperative was to 'do no harm' (non-maleficence). With this in mind, firstly, the particular ethical issues for the exploratory and intervention phases are discussed respectively.

3.10.1 *Exploratory phase ethical considerations*

To ensure specialist dietetic and medical supervision for individuals in the exploratory phase, the study was carried out with the permission of the consultant in charge of the specialist clinic. Since individuals were being assessed for anxiety and depression psychological harm had to be considered (Firby 1995). Consequently, a psychiatrist was consulted regarding the use of the HADS as a precautionary measure.

A further ethical consideration was obtaining informed consent (APPENDIX 12), underpinned by the philosophical concept of 'respect for persons' (Burnard and Chapman 1993). This was to ensure that participants understood that taking part was entirely voluntary and that they had the right to withdraw at any time (Royal College of Nursing 2004). Furthermore, it was particularly important in the clinic setting to guard against the possibility of coercion (Firby 1995).

Another ethical issue, again particularly important in the clinic setting, is that of 'justice' which includes the protection of privacy (Oyster et al. 1987). Having previously being sent written information (APPENDIX 13) as to what was involved in the study, their continued willingness to participate was confirmed and questions answered. A brief explanation of the questionnaire booklet was given to ascertain that they understood how to complete it before leaving them to do so in private. An additional reason for leaving them was to avoid any researcher influence on the answers they provided.

Another aspect of privacy is confidentiality of the data collected. The nature of the longitudinal study meant that it was necessary to identify individuals for repeated administration of the questionnaires. Accordingly, each person was allocated a unique

number, known only to the researcher (Behi 1995). All the above concepts of 'doing no harm', 'respect for persons' and 'justice' are included in the Nursing Code of Professional Conduct (2002) and were addressed in the application for ethical approval from the Local Ethics Committee who granted permission for the study (APPENDIX 14).

3.10.2 *Intervention phase ethical considerations*

Before undertaking the intervention phase, an amendment to the study was submitted to the local ethics committee and once approved (APPENDIX 15) an application was made to research and development units for approval (APPENDIX 16) outwith the local area as per new regulations (COREC 2005).

Recruited PNs gave oral consent for the study and obtained permission from their respective practices before recruiting individuals. A quick reference guide for carrying out study procedures was provided to assist nurses, particularly in the recruitment of individuals, to reduce potential ethical problems. For nurses who invited the researcher to share a consultation, further oral permission was first sought by them from the individuals involved (Soteriou et al. 2005).

To ensure confidentiality of the data collected each practice was coded by letter. The researcher was the only person outwith the practice who knew the codes and these were kept in a secure location (Cerinus 2001). However, the PN was asked to give each recruited individual a number so that all data taken from the practice was anonymous.

3.11 Researcher's reflections

Throughout the study, the researcher was aware of the possibility of introducing bias into the results. The exploratory phase was carried out at a clinic where some of the recruited subjects had previously shared consultations with the researcher. As a result it was difficult for the researcher to stand back from being involved in their care. However, the survey design using a questionnaire helped to minimise the researcher's influence on the outcomes. In the intervention phase of the study carried out in primary care where PNs were responsible for implementing the intervention, the researcher had little influence on outcomes. The exception to this was when the researcher was invited to share consultations with PNs and individuals in their care.

On the other hand, in the role of educator, there was a deliberate intention to influence PNs in their mode of practice. Sharing consultations with PNs when they saw individuals with obesity was not a planned event. It was requested by one PN and subsequently offered to all PNs to ensure an equal opportunity of access to support of this type. During the shared consultations the researcher was aware of the possibility of disempowering the PNs. This caution was warranted as when presenting the results back to PNs they revealed that their previous experience had been that 'outsiders' took over the consultations. They appreciated that this was not the case in this study as their expertise was respected. Previous experience may also have been one of the reasons why only two PNs accepted the offer of shared consultation with the researcher.

Keeping in contact with PNs was difficult. There appeared to be other reasons for this apart from the researcher's base being a considerable distance away. Many of the PNs were not at ease with the email system and telephone contact was difficult due to

pressure of time and their work commitments, particularly as the study was in addition to their normal workload. The researcher knew from previous experience of a national study, where both GPs and PNs were involved, that communication difficulties were not unique to this study.

The telephone interviews with PNs worked well. The opportunity to build a rapport with PNs and see them in the context of their work was achieved through several visits and other means of contact prior to any interviews being carried out. Consequently, this meant that when it came to interviews the researcher had greater knowledge and understanding of the individual PNs and context of their working environment. Although telephone interviews prevented the interpretation of body language they enabled the researcher to change roles from educator to researcher. It appeared that this resulted in PNs giving open and honest feedback on the implementation of the intervention, thus providing extremely valuable insights into weight management in primary care.

The variety of methods used for data collection was beneficial as they complemented each other and provided both detailed and rich data (Risjord et al. 2002). However, the quantity and breadth of data collected made it difficult to structure the results in an ordered fashion without losing accuracy or reporting (Horsburgh 2003). Moreover, it is acknowledged that the interpretation of results was possibly influenced by the researcher's own philosophy despite attempts to remain neutral (Parahoo 2006).

Optimal data collection was not achieved in either phase of the study. In the exploratory phase, the lack of visit 2 data restricted further analysis where it had been

intended to examine the change in individuals' expectations with weight change over time. In, the intervention phase, the data collected were not always complete. However, the fact that individuals sometimes missed appointments or dropped out of studies simply reflects real life.

Although there has been debate in the literature about the criteria for judging qualitative research (Rolf 2006; Hope and Waterman 2003; Cutcliffe and McKenna 1999; Sandelowski 1993) this study draws on the criteria proposed by Lincoln and Guba (1985). They recommended that trustworthiness should be assessed, that is, credibility, transferability, dependability and confirmability. It was envisaged that the longitudinal nature of both the exploratory and intervention phases in addition to the researcher sustaining contact with primary care nurses over time would increase credibility (Speziale and Carpenter 2007). Visiting practices would also provide the opportunity to validate findings from other data such as field notes. These in turn, would aid reflection for further feedback. In addition to other data collection methods, questionnaires and recorded interviews may further aid credibility (Tuckett 2005) and dependability (Miles and Huberman 1994). It may be that recruiting practices in different areas would provide insight into similarities and differences in various contextual situations.

This chapter has given an overview of the complex methodology used in each phase of this study. A description of the development of materials for the intervention phase was also included. The next chapter presents the evidence from the exploratory phase which was then incorporated into the materials for the intervention phase.

Chapter 4

Generating the evidence to develop a holistic approach to weight management

This chapter details the results of the exploratory phase of the study. The concepts of energy intake, energy expenditure, weight control beliefs, physical, social and emotional well-being as shown in the conceptual framework were explored to identify their possible relevance for the intervention. The purpose of doing so was to act as a grounding for the holistic approach to weight management by allowing, not only the 'parts of the whole' to be scrutinised but also to try and ascertain how individuals respond 'as a unified whole'. Therefore, there was a need to examine patterns in the data and identify relationships between the variables. Gathering qualitative data may provide further insights into how individuals responded. For these reasons, it was decided to analyse the data in the following manner.

Primary analysis of the data was undertaken using descriptive statistics. Spearman's bivariate correlation was used for secondary analysis to identify the relationships between the variables. Tertiary analysis, using one-way analysis of variance (ANOVA), Tukey's HSD test and Kruskal-Wallis tests, identified the differences between the following three groups; a) those who gained weight, b) those who were weight stable or reduced their body weight by up to 5% and c) those who reduced their body weight by over 5%. In addition, paired t-tests allowed examination of the extent of within-subject changes.

4.1 Sampling

As described in the previous chapter, individuals for this exploratory phase were recruited from an out-patient clinic specialising in obesity management. The following **table 4.1** shows the breakdown of the numbers of individuals from initial approach to participation followed by more detailed information on the recruitment process.

	Males	Females	Total
Approached	25	77	102
Non-responders	2	9	-11
Refusals	2	5	-7
Consented	21	63	84
Changed appointments	0	12	-12
Did not attend	0	2	-2
Exclusions	2	4	-6
Total recruited	19	45	64

Table 4.1 *Table of recruitment for males and females.*

At the outset, 102 individuals were selected from a clinic list according to appointment times and invited to participate in the study. The reasons given for refusing were difficulty filling in forms (1 male and 1 females), and looking after sick relatives (2 women) with the remaining 3 giving no explanation.

The remaining 84 individuals agreed to participate. However, 12 (females) of these had their appointments changed by the clinic to outwith the recruitment time and therefore had to be excluded. A further 2 females, who did attend their appointments, also had to be excluded as one was being transported by ambulance and the other had a family crisis, therefore she had no time to participate in the study. In addition, 2 males and 4

females were excluded for a variety of reasons, 3 had reduced their BMI to <30 , 1 had learning difficulties, 1 was undergoing psychiatric treatment and another was too ill to attend.

In summary, 84 (82%) consented to the study but the actual number eventually recruited was 64, for the reasons given above. The following results in percentage terms have been rounded up or down to the nearest 1%. Consequently, the cumulative percentage total may not always be exactly 100%.

4.2 General demographic information

An audit of the clinic population from which the individuals were selected provided parameters of gender, BMI range, and mean weight by which to judge the representativeness of this study sample. The 64 individuals in this sample consisted of 19 (30%) males and 45 (70%) females reflecting the clinic gender ratio of 28% to 72% respectively. All individuals were over 18 years of age with a BMI ranging from 33.3 to 59.9 for males and 30.4 to 60.5 for females, with 35 individuals (55%) of this sample (14 males, 21 females) being classified as having Class III obesity. The BMI category for males and females is shown in **Figure 4.1**

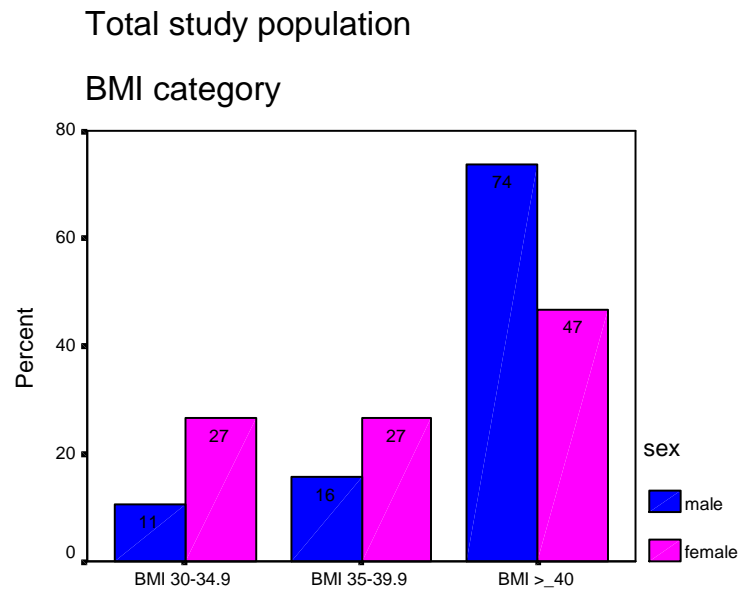


Figure 4.1 Clustered bar chart showing the percentage of males and females in each BMI category.

The mean BMI was 42.4, which was in line with the general clinic population mean of 40.6. In addition, the mean weight of 116kg for the clinic population compared favourably with the 110kg in the sample. The weight range was 62.3kg to 185.7kg. These results suggest that the sample was representative of the clinic population.

The majority of women in this study were younger than the men, with 29 (64%) females being in the under 50 age group, 6 (13%) of whom were under 30 years of age. In comparison, there were no males under 30 years of age and, in fact, the majority of men, 13 (68%), were ≥ 50 years of age. The following **Figure 4.2** provides an overall picture of the age ranges by gender.

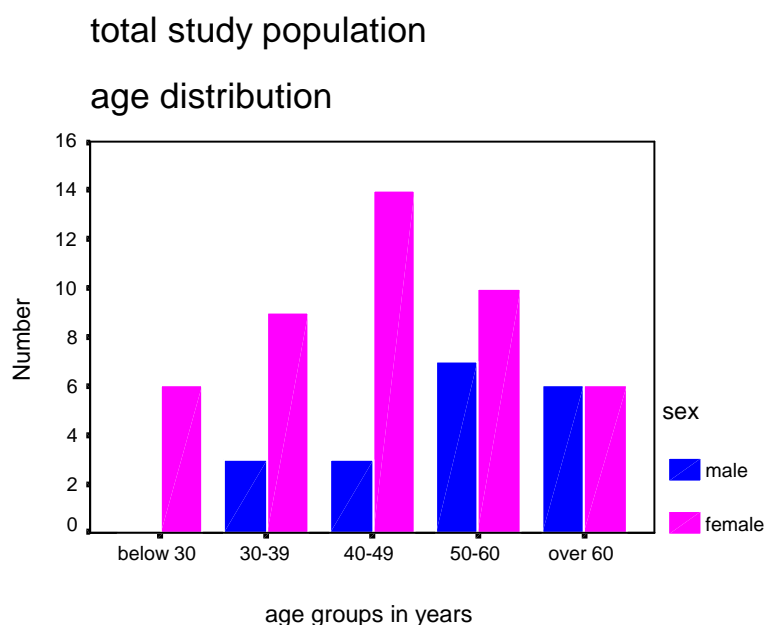


Figure 4.2 Clustered bar chart showing the distribution of age range for males and females.

The office of population census and surveys (1991) classification was used to identify social class by employment. There was high unemployment [9 (47%) males and 20 (44%) females] within the sample, most of whom, (7 (78%) males and 11 (55%) females), were in the morbidly obese category, having a BMI of $\geq 40\text{kg/m}^2$.

Those who were employed were identified as belonging to all social class groups except social class I. Of the 35 (55%) individuals who were working, all but 3 (9%) belonged to social classes II and III with a greater proportion of working males [6 (60%)] being in class II while the majority of working females [15 (68%)] were in class III. Only 2 (20%) working males had manual jobs. One female in the under, 30 age group was under threat of losing her employment due to her obesity.

The majority of individuals, 37, [11 (58%) males and 26 (58%) females] were married, while all divorced or separated individuals (6) were female and there were 4 (21%) males and 8 (14%) females who had never married.

4.2.1 Perceived reasons for onset of weight problem

There was an apparent gender difference in the perceived reasons for the onset of weight gain. For females, the reasons tended to be hormonal with 12(27%) identifying childbirth and 8(18%) the menopause. For males 9(47%), the reasons were more likely to be environmental, especially changing jobs. The majority of males [14 (74%)] stated that their weight gain began in adulthood while 25 (57%) females identified their obesity as starting in childhood or adolescence. Among these women, were 6 (13%) who had Polycystic Ovary Syndrome indicating a hormonal influence on obesity. Therefore, with regard to the development of obesity there is an apparent gender difference. Understanding these influences would seem to be important for both individuals and nurses when considering intervention.

4.2.2 Family history of weight problems

Another influence on obesity development is family history. The respondents perceptions of who in their family had weight problems is shown in **Figure 4.3**

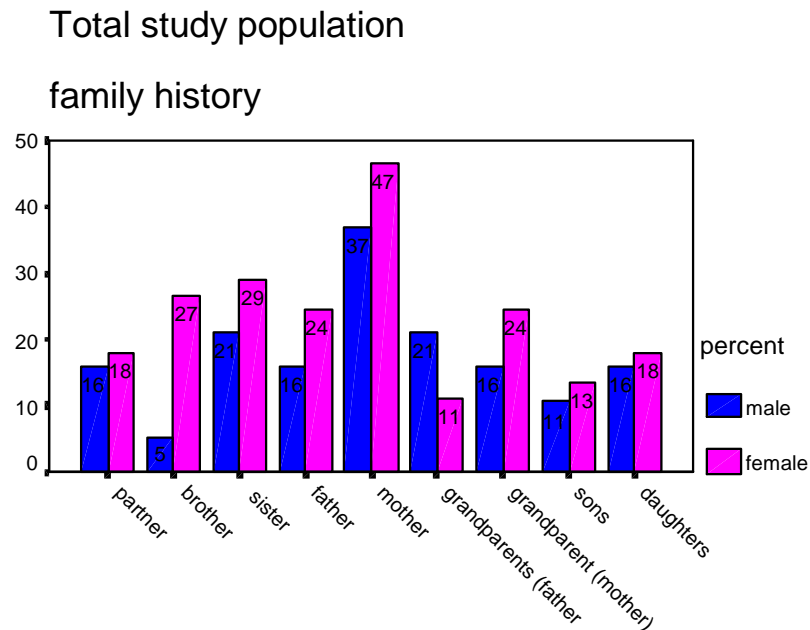


Figure 4.3 Clustered bar chart showing the number of family members identified by male and female respondents as having weight problems.

Both men and women identified their mother as being overweight. This amounted to nearly half (44%) of the total study population while only 17%, that is, 11 (3 male and 8 female) individuals stated that their partner was overweight. It would appear that there is an argument in favour of family history influencing obesity in this population. However, it cannot be ascertained, within the confines of this study, whether this is due to genetics, lifestyle or a combination of both. Nonetheless, the conclusion drawn from these results is that there was a familial component to the development of obesity. Acknowledging family history and helping individuals think about how family life influences weight management may be important considerations for intervention.

4.3 Physical aspects of weight management

The next section describes the physical aspects of co-morbidities, symptoms and functional ability in this sample of 64 individuals.

4.3.1 Co-morbidities

The Royal College of Physicians (RCP) in their 1998 report recognized a range of co-morbidities associated with obesity and these were included in the questionnaire. So as not to miss any co-morbidities, an 'other' category was also included. The patients' hospital notes were reviewed to obtain all relevant information for this particular question. The results show a range of common co-morbidities for males and females, with the exception of type II diabetes, are shown in **Figure 4.4**

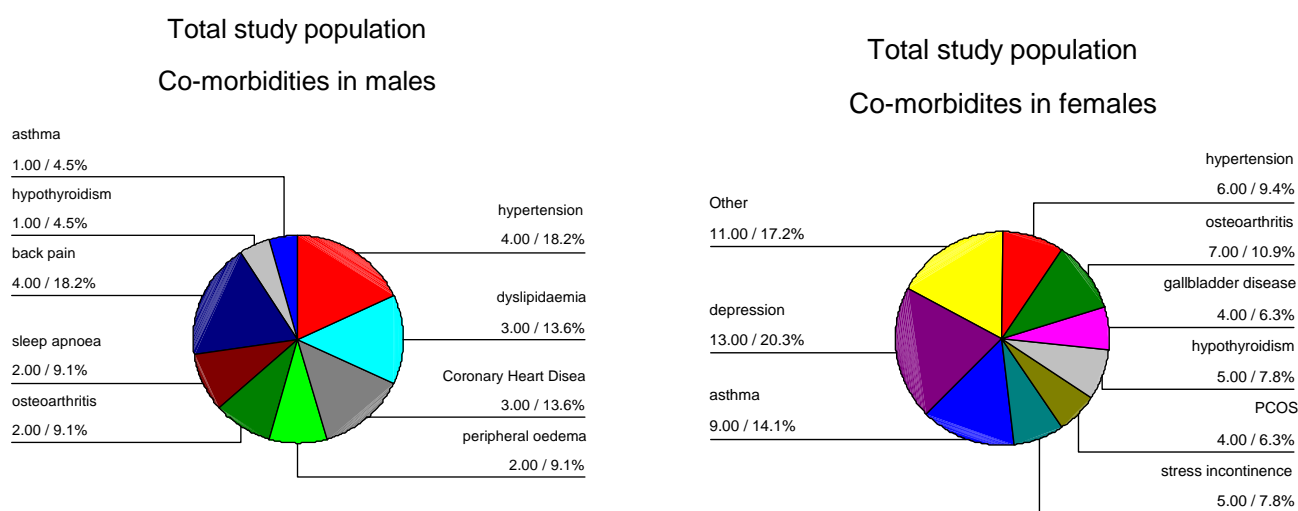


Figure 4.4 *Pie charts of the prevalence of obesity related co-morbidities for males and females.*

Although type II diabetes is a common co-morbidity of obesity, the study did not include anyone with this diagnosis. The reason being, that anyone identified as having type II diabetes is transferred to the diabetic clinic for treatment and therefore is a limitation in terms of representativeness. Of the study population 22 (34%) were identified as having only one, co-morbidity. A total of 15 (23%) had two co-morbidities, 16 (25%) had three, 6 (9%) had four and 1(1%) had five. The remaining

four individuals had no co-morbidities but three of them were in the 30-39 age group and could therefore, be at risk of co-morbidities developing as they became older if their obesity was not addressed.

Hypertension was the most frequently documented co-morbidity for 7 (37%) males and 10 (22%) females, although in females, hypothyroidism (10, 22%), osteoarthritis (9, 20%) and asthma (9, 20%) were also widespread. However, the most frequent co-morbidity identified in females was depression with 13 (29%) having been diagnosed with this condition by clinicians. These results highlight not only the range of co-morbidities in relation to obesity but also that individuals frequently have multiple co-morbid conditions.

4.3.2 *Symptoms*

A list of symptoms was compiled from knowledge of the various co-morbidities, possible side-effects of treatment, information gained through working with obese individuals and the conceptual framework. To identify their perceived frequency, individuals were asked to score symptoms on an ordinal scale of 1 to 10. For any given symptom the lowest score "1" indicated that it occurred very rarely while the highest score "10" indicated that it occurred most of the time. Should a symptom not be perceived as a problem by the individual there was also a 'not applicable' box to capture this information rather than having it be assumed to be missing data. In addition, there were two 'other' categories to allow individuals to insert symptoms not listed. Bivariate analysis of the variables was undertaken using Spearman's two tailed test of significance to explore the associations between weight and symptoms over time.

The scores for the listed symptoms were collapsed from ordinal scales of 1 to 10, into nominal data to produce three categories: a score of ≤ 3 being classified as low severity, scores 4-7 being classified as moderate severity, and scores ≥ 8 being classified as high severity. Symptoms were often related to the co-morbidities of obesity. Sleep was problematic for 59 individuals with 30 of those (8 males and 22 females) saying it was a problem of high severity. Body pain was another common problem for 52 individuals, 29 (8 males and 21 females) of whom, from all age ranges, identified it as being severe. Skin problems were also highlighted as an issue for 45 individuals with 15 of those (4 males and 11 females) indicating that it was severe. Correlations between some symptoms were statistically significant as shown in **Table 4.2**

Correlations	Correlation coefficient	Significance (2-tailed)
Sleep / hunger	.270	.049
Sleep / heartburn	.373	.023
Sleep / cravings	.402	.002
Sleep / body pain	.529	.000
Body pain / breathlessness	.322	.027
Body pain / heartburn	.372	.025
Body pain / abdominal bloating	.346	.022
Body pain / sweating	.391	.006

Table 4.2 *Table of Spearman's rho correlations of symptoms with sleep, body pain and skin problems.*

Sleep problems were related to hunger ($p = 0.049$), heartburn ($p = 0.023$), cravings ($p = 0.002$), and most significantly, body pain ($p < 0.001$). In addition to sleep, body pain was significantly correlated with shortness of breath ($p = 0.027$), heartburn ($p = 0.025$), abdominal bloating ($p = 0.022$) (which was more problematic for women) and sweating ($p = 0.006$).

Furthermore, those who had severe skin problems were more likely to have negative feelings ($p = 0.004$), in particular loneliness ($p = 0.007$) and anger ($p = 0.029$). Therefore identifying and addressing skin problems are an important aspect of care.

The array of symptoms, severity and interrelationships appear numerous but practical experience and local clinic audits suggest they may reflect reality. The difficulty is translating these possible symptoms into a succinct practical approach to intervention.

4.3.3 Functional ability

A five point Likert type scale was used to measure the degree of functional ability and coded for analysis where "1" indicated *never having any difficulty* and "5" indicating *always having difficulty*. Functional ability was reduced for 42(66%) individuals, who had varying degrees of difficulty walking and for 45(72%) for whom going up or down stairs, bending or stooping was problematic. The following activities created some difficulty for individuals; getting in and out of the bath (49%), carrying out household chores (56%), and dressing (34%). The extent to which functional ability was reduced was widespread in this group. If there was difficulty with one function it was more

likely that other functions also caused difficulty. Assessment of functional ability may be another important area to incorporate in an intervention.

4.3.4 *Leisure activity*

The number of hours involved in leisure activities was categorised in the questionnaire and coded on a scale of 1 to 7 prior to entry into the database, ie. a score of "1" being *none* and a score of "7" being *over 40 hours*. The intensity of activities was divided into low (eg watching TV, reading), medium (eg gardening, do-it-yourself), and high (eg swimming, cycling).

Watching television was the most popular leisure pursuit with 23(36%) watching more than 21 hours per week, and 7 (11%) more than 40 hours per week. At the other end of the activity scale, 18 (28%) went swimming and these, like the 10 (16%) who cycled tended to be younger. Those who were more active were more mobile ($p = 0.031$), less bored ($p = 0.006$) and expressed less dissatisfaction with their bodies ($p = 0.026$). These results suggest that activity and inactivity may both be relevant to a weight management intervention.

Physical well-being appears to be an area to address in an intervention by including co-morbidities, symptoms, functional ability and leisure activity.

4.4 Emotional aspects of weight management

Following on from the examination of the perception of physical aspects of obesity the next section provides information on the perceived emotional aspects of body satisfaction, feelings, anxiety and depression.

4.4.1 Body satisfaction

Body satisfaction was scored on a scale of 1 to 10 with "1" being *very satisfied* and "10" being *very dissatisfied*. All individuals had some degree of negative feelings about their body image, males less so than females. Qualitative data from the questionnaire provided additional perspectives on each topic and was further broken down into smaller themes identified in the data.

One female who scored 10 for all sections of this question as well as for shyness stated that she was: *"Generally ashamed of my body's appearance"*. Comments by other individuals such as *"my body is a mess"*, *"sad with my body and myself"* and *"feel fat and therefore unattractive"* gave further insights into how body image was associated with negative feelings ($p = 0.003$) in general. More specifically it was associated with feelings of guilt ($p = 0.002$) as explained in this quote. *"Everything seems to jiggle and this upsets me then I turn to food for comfort. Then I feel guilty then I eat more to try to make myself feel better (vicious circle)"*. The overall conclusion is that negative feelings were generally associated with body dissatisfaction. This suggests that body image may be a pertinent factor to include in intervention.

4.4.2 Feelings

The qualitative data underlined the fact that feelings were particularly important to the individual and provided insight into the quantitative data. These feelings were scored on ordinal scales of 1 to 10 with "1" being *very rarely*, and "10" being *most of the time*. These ordinal scales of 1 to 10, were collapsed to produce nominal data in three categories: a score of ≤ 3 being classified as low frequency, scores 4-7 being classified

as moderate frequency, and scores ≥ 8 being classified as high frequency. The ordinal scales were also grouped to calculate mean scores for both negative and positive feelings.

Some individuals [10 (53%) males and 27 (60%) females] scored ≥ 8 , suggesting that they felt loved. Low levels of pride, indicated by a score of ≤ 3 , were reported by 8 (42%) males and 21 (47%) females. There were high levels of guilt experienced by 2 (11%) males and 19 (42%) females. There were 21 individuals (33%) who had high levels of anger, including 4 out of the 6 in the < 30 age group who were all women. There was a correlation between guilt and anger ($p = 0.001$) and the qualitative data gave insights into the relationship between them as indicated in the following comment *"Generally I am a very positive individual but I have high expectations which I often don't meet hence the guilt/anger"*. Guilt was also correlated with shyness ($p = 0.002$) and appeared to be connected to the weight of individuals as typified in these two written remarks. *"Very shy when meeting people for the first time because of my weight"* and *"I'm far less out-going because of my weight. I tended to be a bit extrovert before I was so heavy"*.

It seems that when people are lonely they are also bored ($p = 0.002$) and the comment *"Have hated my body since about the age of 11/12 yrs when weight started to increase. I try to hide myself if at all possible."* could be interrupted as one reason since boredom is associated with a high BMI, body dissatisfaction and inactivity. Loneliness, as shown in the following negative correlation, can still be an issue even if one feels loved ($-p = 0.039$) as expressed in the following quote *"though I have a loving and supportive husband I often feel lonely"*.

When given the option of identifying other feelings, participants documented frustration in the comments section. This was correlated with anger ($p = 0.003$) and could be due to functional problems as indicated in the following quote: *"The very process of dressing every morning causes frustration and anger"*. The outcome of frustration can have negative effects on weight management. *"It is a vicious circle. Frustration at not losing makes me want to eat which equals more frustration."* It can come from different sources. Caring responsibilities can create difficulties as in this case where *"Mother has been ill - hospital etc - quite frustrating - she doesn't make an easy patient"* but can lessen with a change of circumstance in a different scenario, for example, a *"Change of job (+boss) is removing most frustrations from my day"*. It may be that incorporating the means to identify life situations in an intervention would aid weight management.

Although the myriad of negative feelings, individuals expressed positive feelings like pride and confidence ($p = 0.004$) which were also significantly correlated and appeared to be linked to losing weight as exemplified in the comment: *"Mostly feel very proud of my weight loss over the years"*. It appears that there are intense feelings, particularly negative ones, associated with obesity and therefore it was thought relevant to examine levels of anxiety and depression.

4.4.3 Anxiety and depression

Anxiety and depression was rated using the Hospital and Anxiety Depression Scale (HADS). The HAD scores were divided into 0-7, 8-10, ≥ 11 for each category of anxiety and depression as suggested by Zigmond and Snaith (1983) and coded for analysis purposes. A score of 0-7 indicated a 'probable absence' scores of 8-10

'possible presence' and ≥ 11 'probable presence'. The scores for anxiety and depression are shown in **Figure 4.5**

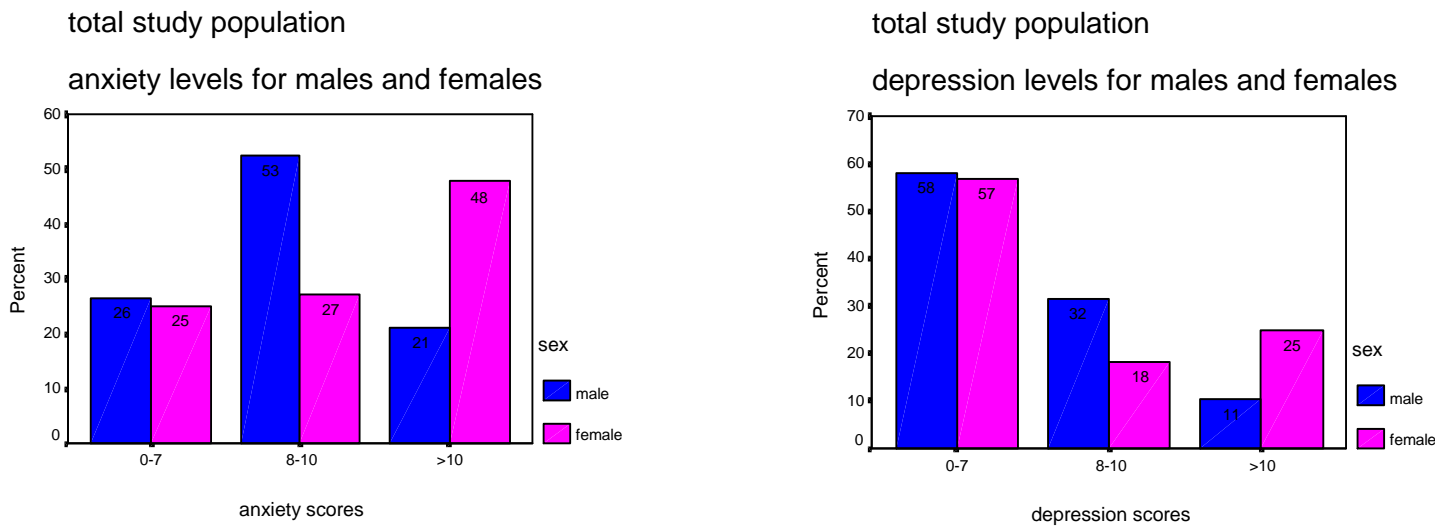


Figure 4.5 Clustered bar charts showing the levels of anxiety and depression for males and females.

Males displayed less anxiety than females, with 10 (53%) males scoring between 8 and 10 compared with 21 (47%) females who scored 11 or more. Most of these men were in the 50-60 age group whereas the 40-49 year old females were more likely to have high anxiety levels. This same female age group also demonstrated high depression levels with 11 (24%) females scoring 11 or more and a further 8 (18%) females scoring between 8 and 10. Depression, as identified by the HAD scores, was significantly correlated with negative feelings ($p = 0.002$) and even more so with mobility problems ($p < 0.001$).

Emotional well-being appears applicable to weight management and perhaps should be incorporated into intervention.

4.5 Social aspects of weight management

The perception of social support was an important aspect for individuals trying to manage their weight. Therefore, this study examined the support individuals perceived themselves to have from their everyday contacts, particularly family and friends.

4.5.1 Social support

Social support was scored on a scale of 1 to 10, with "1" being *very unsupportive* and "10" being *very supportive*. For the purpose of analysis, each variable on the scale was grouped with " ≤ 3 " being *very unsupportive* and " ≥ 8 " *very supportive*. Furthermore, these variables were grouped together to give mean scores for support from family, friends, colleagues, health professionals and others in the community to try and gauge the strength of social support from different people.

Of the 42 individuals who had a partner, 24 (57%) viewed them as being very supportive as reflected in some of the comments: *"My husband has always been very supportive"* and *"I am very lucky in the respect that those closest to me ie husband and children are extremely supportive"*. However, sometimes there was a perception of mixed support from the same person: *"Find partner will one day cook protein only meal then the next encourage me to fall by the wayside"* and *"I feel my husband can be supportive sometimes and others negative"*. Others felt that partners hardly supported them at all in their efforts: *"my husband is not good at helping me"*. Sometimes, partners may not want the individual to change or feel that they are giving support but it was viewed negatively in these instances where my *"Husband 'likes me the way I am"* or says *"You wouldn't be you if you were thin"*. This would suggest that partners may influence how individuals manage their weight.

Of the 42 individuals who had children, 20 (47%) perceived them to be supportive, however, 6 (14%) felt that their children were very unsupportive by giving them a score of 1 but made no comment. Of the 33 individuals who identified parents, 17 (41%) accredited them with being supportive. One female viewed her mother as not providing the support she was looking for as she wrote: *"Sometimes I feel my mum is checking up on what I eat by asking him (husband) questions and I feel a bit betrayed by this at times"*. It may also be helpful to identify other family members and how their actions are perceived.

As well as the perception of support from the family, friends may be influential. 6 (11%) individuals, 5 of whom were females, indicated that close friends were very unsupportive whereas 22 (39%) individuals stated that friends were very supportive. Acquaintances, however, were far less supportive with 11 [(24%) 2 males and 9 females] giving a score of ≤ 3 . One subject gave an example of how difficult socializing can be. *"Some friends tend to buy me drink when they know I'm on a diet, one leads to another then your resolve goes!"* Social interaction may be an important aspect for consideration in an intervention.

In the workplace, more than half (6) of the 10 employed males, found colleagues to be unsupportive. Conversely, females, including all those <30 years of age, felt they had more support as 15 of the 24 working females identified colleagues as being supportive.

Perceived support from health professionals for weight management varied but was mostly positive *"Specialist doctor and dietitian have encouraged me to get on the program again"* and *"I have had great support from my dietitian, my own doctor and Dr X"*. One individual seemed to reflect the teamwork approach aimed for at the clinic

to encourage individuals to participate in their care. *“By losing weight and looking better makes you feel good, and with the support of the doctors and nurse it gives you the encouragement to try harder”.*

Although there were no written negative comments, possibly due to the study taking place at the clinic and patients not wanting to appear critical, there were some indicators of dissatisfaction with the support provided by health professionals. Even perceived positive support can sometimes produce negative feelings. *“The doctors and dietitians have been very supportive but I feel as if I have let them and myself down for putting weight back on”.*

General practitioners were seen by 13 individuals [(22%) 3 male and 10 females] as unsupportive but only 1 female identified specialist doctors in the same way. Most of the study population felt that dietitians were very supportive but 3 individuals felt that they were not, while 1 male and 6 female felt the same way about nurses. In fact, 5 individuals did not see nurses as being relevant to weight management. This seems to suggest that health professionals may need to be aware of their approach to individuals to ensure that they are perceived as being supportive.

The qualitative data highlighted that individuals often felt that lack of support was due to a lack of understanding. *“I do not receive a lot of support from friends, family and/or colleagues because I do not believe that they understand just how much of an issue my weight is for me.”* and *“Lack of understanding by other people. They don't realise the consequences of straying from the diet even by a little.”* The perceived lack of understanding could have knock on effects as indicated in the following quote: *“People*

really don't understand the full implications of the diet and think that just a little will have no effect, do not realise the worry you feel about your weight." It may therefore be that health professionals could consider the need to convey empathic understanding.

Even when support was forthcoming there was sometimes an element of frustration and perhaps unrealistic expectations from others. *"Generally support has been good, however, no-one quite appreciates my frustration or really believes the effort I make."*

Another issue raised by individuals was the stigma they feel. For example, *"I say 'isn't it hot in here', they say 'Well if you were not so heavy!'" and "everyone is not as fat as you are"* (when the subject suggested that there should be a bigger space between chairs for an event) *"Can be very hurtful."*

Prejudice not only comes from the general public but also from health professionals.

"Working in healthcare you are judged by your size. Once labeled as obese you can never rid yourself of it. Too many health professionals still equate overweight with overeating and laziness."

This suggests that negative feelings were engendered by stigma and prejudice and that people suffering from obesity may feel stigmatised.

4.6 Beliefs about weight management

On a 5 point Likert scale, ranging from *strongly agree* to *strongly disagree*, 45 individuals (71%) held the belief that they were the only ones who could control their weight and that it was not totally outwith their control 39 (65%). One subject

emphasized this when she wrote: *"I believe each individual can control their weight problem with the correct help and indeed their own positive mental attitude."* Taking control is not always easy though even for 41 (65%) individuals who believed that if they gained weight it was their own fault as indicated by this quote: *"I know that I am the one who makes the difference in my weight but I still find it very hard to discipline myself to try to lose some weight."* The achievement of weight loss was not viewed by 51 individuals (81%) as being just good luck. However, one seemed ambivalent about it. *"I can't help thinking that the harder I try to control my weight the more difficult it becomes."*

Those who believed that they were the only ones who could control their weight were also more likely to believe that if they gained weight it was their own fault ($p < 0.001$). When there is weight gain they seem to blame themselves. *"I know that I am accountable for my weight but I feel that I have no control over food. I often eat when I'm not hungry so I deserve to be fat."* Weight control, however, is not consistent. One subject explained how he viewed it. *"My success in managing my weight comes and goes. My logical brain tells me 'I am in control' but my emotional brain tells me 'your body is sabotaging your efforts'."* Others believed that they had limited control due to co-morbidities. *"As my weight gain is related to my thyroid problems I feel my control is limited - this isn't really understood."*

The overwhelming majority [53 (91%)] of individuals, believed that the support of others was important in helping them with their weight management, and no one indicated their disagreement with this. This was highlighted by the fact that the comments in the support section of the questionnaire attracted the highest response rate.

One subject explained how support helped her: *"Encouragement to give me confidence is important"* and another believed that factors other than food were important. *"I believe weight control goes way beyond just food intake. Adrenalin, stress, relaxation, lifestyle, contentment etc."* This may suggest that a broad based approach including addressing beliefs should be incorporated in a weight management intervention.

4.7 Expectations of weight change

Females had lower expectations of weight loss than males with 15 expecting to stay the same or gain weight while 4 males anticipated that they would stay the same but not gain weight. The < 40 age group were more optimistic of weight loss than their elders.

The low expectations of individuals can be explained by attribution theory. One individual whose weight loss was minimal wrote *"This is due to a 'lack' of reduction in weight over the last 9 months"*. It could be interpreted that the lack of weight loss and a stable attribution would explain why the individual did not expect to lose weight. For the individual who wrote *"Probably a weight loss of less than 1lb per week is more realistic"* attributions may have been less stable allowing her to adjust her expectations to set a more achievable target. Another female who expressed a sense of depression recognized how unrealistic she had been in her expectations *"I certainly would like to lose a lot of weight:- I have taken about 20 years to put on about 6 stone and unrealistically I want it off in six weeks! (not possible I know!) not even in 6 months therefore I get depressed about the whole sorry mess I'm in!"* However, another individual indicated that she needed help to change her situation as she appeared to have a persistent feelings of helplessness. *"I need to do something or get help to break out of*

my current cycle of feelings - I just don't know what!" It would therefore appear relevant to address weight loss expectations during intervention.

All the results so far have given a general description of the total sample at visit one. To illustrate the complexity of weight management APPENDIX 17 highlighted the main areas covered so far and APPENDIX 18 and APPENDIX 19 further illuminated the intricacies in the form of significant correlations produced from examining positive and negative feelings. The following section explores these areas further by looking at them in light of weight change.

4.8 Weight change

To explore further the relationship between physical, emotional and social aspects on weight, differences between those who lost weight and those who gained weight were examined.

4.8.1 Categorization of weight change groups

In moving to this stage of the analysis, individuals were subdivided into three groups to permit comparisons between the groups, but firstly, the individuals for each group had to be identified. Of the 64 individuals recruited, one patient withdrew after visit 1 and another moved away from the area leaving a total of 62 individuals in the study. Of the remaining 62 individuals, only 32 [(52%) 7male and 25 female] completed all three visits. In order to access a larger data set visit 2 was not taken into account. This left 48 individuals [77% (15 male and 33 female)] who had completed both visits 1 and 3. The following results apply to those who completed only visits 1 and 3, that is 48

people, and where percentages are given they refer to this group and not the total sample.

Over the six month period, 16 out of 48 (33%) individuals gained weight, 23 (48%) were either weight stable or lost up to 5% of their body weight, and 9 (19%) lost more than 5% of their body weight, including 3 (5%) who lost more than 10% of their body weight. The decision to group the individuals in this way was in recognition of how the literature relates to weight loss changes and benefits.

The use of descriptive statistics, Spearman's correlations, paired t-tests and ANOVA analysis were used to determine changes over the study period and explore the differences within and between groups.

4.8.2 Demographic aspects of weight change groups

The demographic details of the groups generally did not differ with weight and BMI ranges, mean starting weights, marital status and family history being fairly evenly distributed between the groups .

4.8.3 Group allocation

The individuals were allocated to one of three groups according to their change in weight as shown in **Figure 4.6**

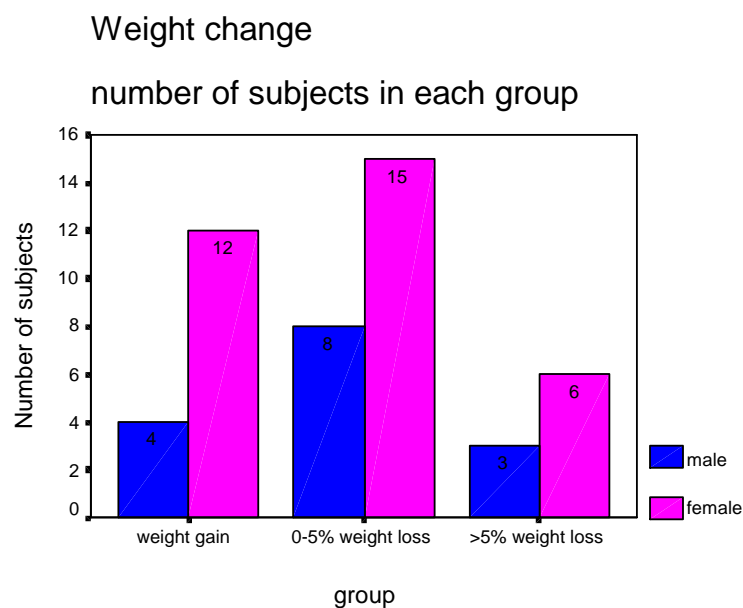


Figure 4.6 Clustered bar chart showing the numbers of individuals allocated to the groups of weight gain, 0-5% body weight loss and >5% body weight loss by gender.

These results show that 48(33%) gained weight, 23(48%) were either weight stable (1 male and 1 female) or lost up to 5% of their body weight and 9(19%) lost $\geq 5\%$. The decision to include those who were weight stable in the 0-5% group rather than the weight gain group was because weight stability can be viewed as a success. In addition, these individuals may have previously lost weight and been aiming for stability but this was unknown. The severity of obesity was spread over the three groups although in those who lost most weight (>5%) all men were in the class III category with only a third of women in this same category.

There was an indication that the number of visits attended differed between the groups suggesting that those who attended more frequently achieved greater success for weight loss. Half of those who gained weight were in the class III obesity category but only one of these attended all three visits. On the other hand, except for one, those who lost >5% of their body weight had attended all three visits.

The majority of weight gainers (69%) were under 50 years of age and included 3 females under the age of thirty while for 0-5% and >5% weight losers there were 57% and 46% respectively, in the under 50 age group.

4.9 Physical aspects of weight change

Firstly, the differences between the groups in co-morbidity levels are determined and compared briefly. For the sake of clarity the other changes are reported separately for each group before going on to make comparisons and finally all the results are brought together to provide a comprehensive overview.

4.9.1 Co-morbidities of weight change

The difference between the genders in the types of co-morbidities in the total population was reflected in the groups. However, in the weight gain group, osteoarthritis was common to both genders (2 males and 4 females) but was not diagnosed in anyone who lost >5% body weight. Stress incontinence was identified in both weight loss groups but not in the weight gain group. The only co-morbidity monitored in this study was hypertension, which was identified in all three groups. Weight loss demonstrated a significant improvement particularly in systolic blood pressure ($t(22)=2.615; p<0.01$) in the 0-5% group and ($t(8)=2.441; p<0.05$) the >5% weight loss group.

4.9.2 Symptoms and functional ability in the weight gain group

The symptoms highlighted by those who gained weight as problematic with scores of 8 or more, were poor sleep (2 males and 7 females), breathlessness (3 males and 5 females) and body pain (2 males and 6 females). These symptoms were also correlated to each other with poor sleep being associated with breathlessness ($p = 0.056$) but more

significantly with body pain ($p = 0.004$) and body pain being significantly correlated with breathlessness ($p = 0.021$). It appears that body pain was the greatest problem for sleep disturbance in this group.

In addition, skin problems, although having a mode of 1, indicating that there were few problems for most, produced difficulties for 3 individuals who scored 8 or more. Those who had skin problems often had diarrhoea ($p = 0.005$). This would suggest that when individuals were receiving Xenical treatment, they had difficulties adhering to the diet and this resulted in a high fat intake, which caused the known side effect of diarrhoea. The hygiene difficulties of coping with diarrhoea could cause skin problems. Sweating was also associated with skin problems ($p = 0.006$) and suggests that the cause for this should be explored with patients particularly in relation to skin fold areas. These issues will be carried forward and compared in each group.

4.9.3 Symptoms and functional ability in the 0-5% weight loss group

Examination of the variables of poor sleep, breathlessness and body pain already highlighted provided further information. In the weight loss, as in the weight gain group, poor sleep was associated with breathlessness ($p = 0.043$). However, poor sleep, breathlessness and body pain were mostly less of a problem than for weight gainers with modes of 4, 2 and 8 respectively. It may be that in those who had 0-5% weight loss, body pain ($p = 0.060$) was less likely to disturb their sleep as osteoarthritis was less prevalent. Furthermore, in spite of the existence of asthma, breathlessness had significantly reduced ($t(18)=3.102; p<0.005$) suggesting that weight loss itself provided relief.

Unlike the weight gainers, this group revealed a very significant reduction in skin problems ($t(13)=5.236; p<0.001$) although 2 individuals still scored 8 or more at visit 3. They also had significantly reduced bladder problems ($t(10)=1.876; p<0.05$) which were correlated with skin problems ($p = 0.018$). This link was supported by the fact that stress incontinence was identified in this group, but not in the weight gainers, suggesting that skin problems may have been the result of urinary incontinence.

4.9.4 Symptoms and functional ability in the >5% weight loss group

Those who lost most weight, that is >5%, had significant reductions in body pain ($t(6)=2.563; p<0.05$). It appears that their pain was related to abdominal bloating ($p=0.012$) which also showed significant reductions ($t(6)=3.267; p<0.01$). Therefore, this reduction in abdominal bloating was associated with weight loss. Sleep disturbance, to varying degrees, was demonstrated by the modes of 10 and 3, and was associated with bladder problems ($p = 0.047$) reflecting the diagnosis of stress incontinence. This may indicate that for some, weight loss improved their stress incontinence, and as a consequence their sleep also improved. Since the severity of skin problems greatly diminished over the course of the study ($t(5)=5.861; p<0.001$) it could be argued that like those in the 0-5% weight loss group, stress incontinence was associated with skin problems.

However, constipation ($p = 0.028$) was also related to sleep disturbance. As bloating is known to be related to constipation that may have been the reason for the significant correlation with body pain ($p = 0.012$). In addition, constipation could have been related to the Protein Sparing Modified Fast (PSMF), a dietary intervention, which was the treatment prescribed for seven out of the nine individuals in this group.

Nonetheless, as there were significant reductions in both body pain ($t(6)=2.563;p<0.05$) and abdominal bloating ($t(6)=3.267;p<0.01$) it may be that either these were resolved by treatment for the constipation or the weight loss itself provided an improvement. Although there are some differences between the co-morbidities and symptoms in each group they all have poor sleep, breathlessness and body pain in common. These commonalities were associated with the ability to carry out everyday functions as seen in **Table 4.3**

Functional difficulties	Poor sleep			Breathlessness			Body Pain		
	Weight gain	0-5% weight loss	>5% weight loss	Weight gain	0-5% weight loss	>5% weight loss	Weight gain	0-5% weight loss	>5% weight loss
Walking	0.030*	0.022*	-	0.001**	0.001**	-	0.009**	-	-
Bending	-	-	-	0.001**	0.005**	-	0.043*	-	-
Stairs	-	-	-	0.001**	<0.001**	-	0.006**	-	-
Bathing	0.013*	-	-	<0.001**	0.010**	-	0.004**	-	-
Dressing	-	0.040*	-	0.002**	0.006**	-	-	-	-
Chores	-	-	-	0.005**	0.003**	0.001**	-	-	-

* = $p<0.05$ ** = $p<0.01$

Table 4.3 *Table of significant correlations between mobility problems, poor sleep, breathlessness and body pain in weight change.*

In general, weight change was associated with functional ability. In addition to poor sleep, breathlessness and body pain, bloating, hunger and craving had been identified as discussed above. In common with those who gained weight, those who lost 0-5% of their body weight also had a reduction in hunger ($t(18)=2.525;p<0.05$) and cravings, suggesting that they may have reacted differently. Whatever the complex reasons for the symptoms it does appear that each one improves with weight loss as shown in **Figure 4.7**

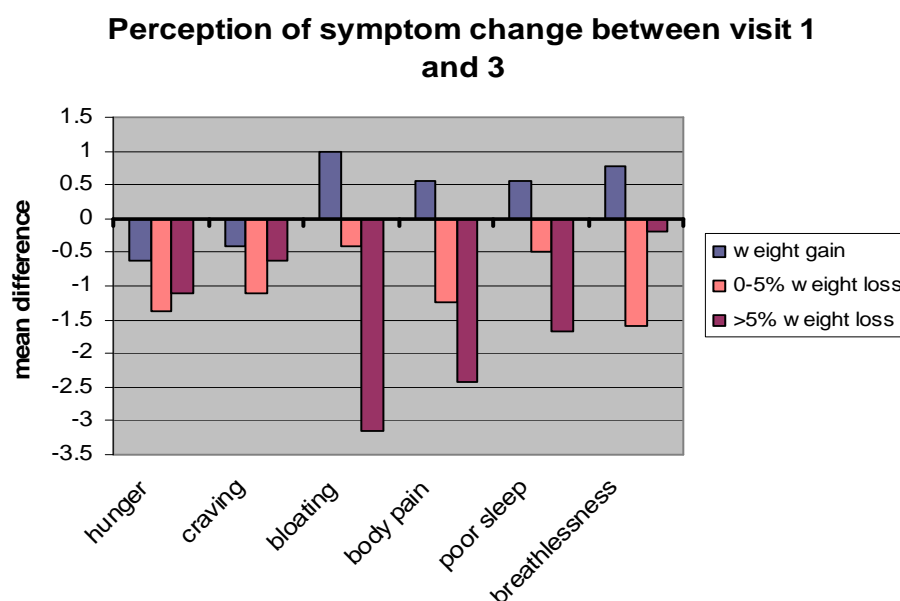


Figure 4.7 Clustered bar chart showing mean score changes for symptoms by group.

In fact, breathlessness showed a significant difference between the weight gain group and those who lost >5% of their body weight ($X^2(2)=6.491; p<0.05$). This was regardless of a diagnosis of asthma in these groups. The symptoms highlighted in the above graph could be a useful guide to exploring problem areas for patients so that appropriate treatment can be implemented and, by addressing them, provide incentive for weight loss.

In summary, there was a strong association between co-morbidities, symptoms and functional ability. There were gender differences with males diagnosed more often with a cardiovascular risk factor. Females, on the other hand, were predominately diagnosed with asthma and exclusively with stress incontinence or depression. Regardless of gender it appears that those who gained weight were more likely to have been diagnosed with osteoarthritis. Allied to their high levels of pain, their ability to be sufficiently physical active to impact on their weight may be limited. With weight gain, symptoms

and functional ability worsened, while weight loss was associated with improvement. Despite that it is difficult to identify what is cause and effect but does perhaps demonstrate the importance of helping individuals and nurses look at the whole picture.

4.9.5 Physical activity changes in the weight gain group

Activity levels were divided into low, medium and high intensity. While two females in the 40-60 age group watched over 40 hours of TV a week, generally the weight gainers reduced their lower intensity activities of TV watching and using the computer but increased their reading. They also reduced the higher intensity activities of swimming, cycling and going to the gym but at the same time they increased their walking and gardening. This indicates that the intensity and diversity of activity is a factor in weight change. While the only statistically significant change was an increase in walking ($t(15)=-3.313; p<0.01$) paradoxically they were still the group who walked least.

4.9.6 Physical activity changes in the 0-5% weight loss group

The 0-5% weight loss group had also generally reduced their lower intensity activities like TV watching ($t(23)=1.775; p=0.045$) and reading but they increased their higher activities such as walking and cycling. There was also small increases in the levels of moderate activity but all were non-significant except for gardening ($t(23)=-1.702; p=0.052$). On the other hand, two retired people (1 male and 1 female) watched more than 40 hours television per week.

4.9.7 Physical activity changes in the >5% weight loss group

As in the other groups, TV watching was generally reduced but two females who were in the 40-49 age group, watched more than 40 hours of television a week. The higher

intensity activities of swimming, going to the gym and dancing ($p = 0.033$) were increased in this group and less time was spent on reading. Those who went to the gym were also more likely to go swimming ($p = 0.030$) but only two swam and three went to the gym.

4.9.8 Group differences in physical activity levels

The changes in activity levels for each group are presented in **Figure 4.8**

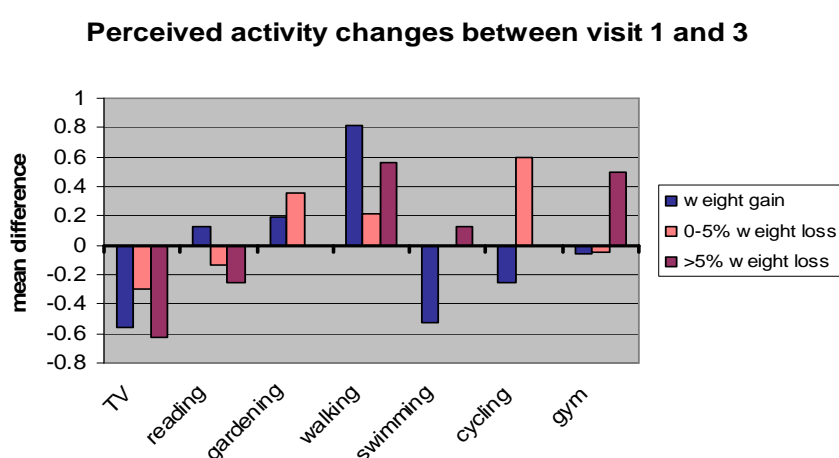


Figure 4.8 Clustered bar chart showing changes in different physical activities for each group between visits 1 and 3.

There was a general reduction in TV watching and an increase in walking by all groups. Despite this similarity, and the fact that two people in each group watched more than 40 hours of TV a week, weight change differed in these individuals. Weight losers increased their higher intensity activities of cycling and going to the gym. On the other hand weight gainers reduced their high intensity activity of swimming. This suggests that weight change is influenced by changes in activity levels. That is to say, higher levels of activity resulted in weight loss or perhaps it was the weight loss which enabled greater activity.

Those who gained weight had the highest levels of low activity while those who lost most weight undertook high intensity activities more often than the others. It appears that those who lost 0-5% of their body weight were the ones who most often undertook medium activity levels. Consequently, it seems that the higher intensity activities are most beneficial to weight loss.

Therefore, these results suggest that it may be important to explore all activity changes and encourage involvement in higher intensity activities in those who are physically able to do so. However, making changes may not always be easy to implement due to social influences.

4.10 Social aspects of weight change

This section follows the same reporting pattern as physical and emotional aspects of weight management, that is, examining perceived support separately for each group before going on to make comparisons between the groups.

4.10.1 Perceived levels of social support in the weight gain group

Weight gainers perceived themselves to have the lowest levels of support and, in spite of a marginal increase in spouse/partner support ($t(8)=-0.447$; $p0.668$), the mean value at visit 1 was only 6.50 (SD2.33) compared to 8.53 (SD1.36) and 7.75 (3.30) for those who had 0-5% and >5% body weight loss respectively. It appeared that they had more support from friends (mean 6.67, SD1.97) initially but this diminished slightly ($t(11)=1.205$; $p0.253$). These figures indicated that they felt only minimal support was forthcoming, particularly from family ($p = 0.052$) and friends ($p = 0.080$) which

affected their confidence levels (mean 4.75, SD2.59). This lack of confidence may have influenced the belief that their weight was totally outwith their control.

The support of others, however, was important to them and seemed to impinge on levels of body dissatisfaction. Consequently, body dissatisfaction increased ($t(14)=-2.256; p<0.05$) as friends were seen as being just a little less supportive ($t(12)=1.205; p>0.253$).

In addition, only one female indicated that she felt supported by colleagues while the remaining four (1 male and 3 females) who worked with others felt that they received no support, in fact, quite the reverse. However, as colleagues appeared to encourage them to be active by walking more ($p = 0.005$) this perceived negative support might have been misconstrued. Even support from professionals in managing their symptoms such as heartburn ($p = -0.012$) and hunger ($p = -0.004$) was not forthcoming although constipation ($p = 0.019$) was addressed. It seemed that this lack of support was linked to the confidence they had in their ability to lose weight, and yet they still felt a need of support from others.

4.10.2 Perceived levels of social support in the 0-5% weight loss group

Perceived support was higher in this group than for those who gained weight. Irrespective of a significant decrease in spouse/partner support ($t(14)=3.005; p<0.001$) and marginal fluctuations in all other areas, support levels remained high from friends and family but less so from colleagues and community. Family support was associated with watching TV ($p = 0.040$) and reading ($p = 0.049$) perhaps indicating the general low activity levels within the family. Support from family and friends was also

achieved by having contact through speaking to them ($p = 0.001$) and during visits to the house ($p = 0.031$). The higher level of confidence in this group may have encouraged 7(88%) males and 14(93%) females to either disagree or strongly disagree with the belief that weight was inherited so nothing could be done about it.

4.10.3 Perceived levels of social support in the >5% weight loss group

This same belief about inherited weight was even more strongly associated in this group with the support of friends ($p = 0.026$) and professionals ($p = 0.026$). Friends appeared to give practical support as the more support they had the more likely they were to go to the gym ($p = 0.025$). This group perceived themselves as having the highest levels of support, which increased in all areas, in particular friends ($t(6)=-2.739$ $p<0.05$) but with the exception of professional support, that support decreased slightly but was still high. Professional support in addressing symptoms in this group was perceived to be greater, particularly for cravings ($p = -0.060$) and body pain ($p = -0.055$).

Changes in perceived support between visits 1 and 3 are shown for each group in

Figure 4.9

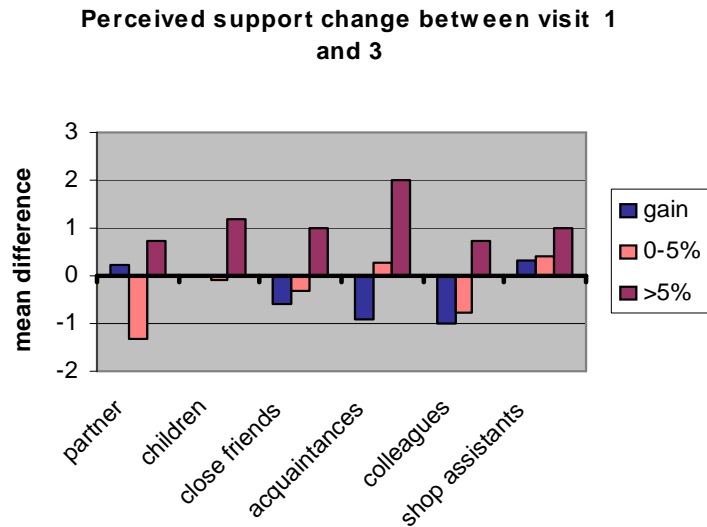


Figure 4.9 *Clustered bar chart of mean differences in perceived support scores between visits 1 and 3 for each group.*

Although the bar chart reflects the changes in the perception of support for each group it does not convey the significant difference between weight gainers and those who lost 0-5% of their body weight in the support they perceived themselves to have from friends ($F(2.38)=3.302; p<0.05$). Therefore, the levels of perceived support for each of these groups are also shown by mean rank scores in **Figure 4.10**

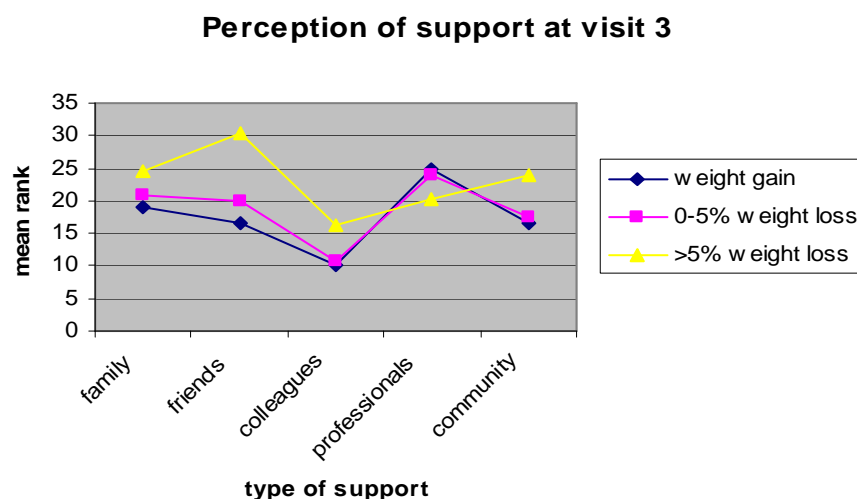


Figure 4.10 Line chart of mean rank scores for family, friends, colleagues, professionals and community support for each group at visit 3.

It appears that weight change and levels of support are linked and therefore it seems rational to include social support in the intervention.

4.11 Emotional aspects of weight change

Emotional aspects of weight change were determined by examining negative and positive feelings as well as anxiety and depression levels. As in the previous section, looking at physical aspects of weight management, emotional aspects are initially reported separately for each group before going on to making comparisons between the groups.

4.11.1 Negative and positive feelings in the weight gain group

Those who gained weight, watched more TV if they felt less loved ($p = 0.016$) and especially if they were dissatisfied with their bust ($p = 0.001$). This dissatisfaction was also associated with depression ($p = 0.010$) with the outcome that they had less contact

with family and friends either by speaking to them ($p = 0.033$), going out ($p = 0.000$) or having them visit the house ($p = 0.003$) therefore perhaps becoming isolated. It may be that isolation was associated with loneliness which appeared to be associated with boredom ($p < 0.001$) and shyness ($p < 0.001$). It may not be surprising then that shyness ($t(15) = -2.263; p < 0.05$) increased significantly along with smaller increases in guilt and anger. Anger though, with a mode of 6, was less troublesome than guilt (9), and boredom (9). Boredom appeared to affect activity levels as the greater the boredom the less likely the participation in cycling ($p = 0.030$) or going to the gym ($p = 0.029$) and to a lesser extent walking ($p = 0.087$). The only positive feeling, most often having a high score, was a perception of being loved with a mode of 8.

4.11.2 Negative and positive feelings in the 0-5% weight loss group

The levels of perceived negative feelings of guilt, anger and loneliness all decreased but shyness and boredom increased, however, none were statistically significant. Boredom was correlated with loneliness ($p = 0.025$) and guilt ($p = 0.015$) which was reduced by a feeling of pride ($p = 0.041$). Albeit, the negative feelings were less troublesome for this group, than those for the weight gainers with the following modes: guilt (6), and anger (3) and loneliness (1 and 2). Boredom varied with 5 individuals having a mode of 1 and 4 individuals having a mode of 9. More of this group had higher levels of positive feelings than the weight gainers with the following modes: being loved (10), confidence (7) and pride (4). This was in spite of the perception of 'being loved' having significantly decreased at visit three ($t(22) = 3.119; p < 0.005$). Regardless of this, they still had the highest mean scores of all the groups for each of these variables and those who felt loved were more likely to be confident ($p = 0.024$) and do handcrafts ($p = 0.006$) and less likely to watch as much television ($p = 0.016$).

4.11.3 Negative and positive feelings in the >5% weight loss group

The levels of perceived negative feelings all decreased except for boredom, which demonstrated no change. Boredom was correlated with both loneliness ($p = 0.068$) and guilt ($p = 0.074$) but to a lesser degree than for those who lost 0-5% of their body weight. With the exception of anger (mode = 8), which was statistically significantly correlated with guilt ($p = 0.010$), negative feelings were generally less troublesome for this group with the following modes: guilt (1,6,10), loneliness (2) and shyness (1,2). Boredom again varied with 2 individuals having a mode of 1, and 2 individuals having a mode of 9, which was negatively correlated with being loved ($p = 0.026$). More of this group had higher levels of positive feelings than the weight gainers with the following modes: being loved (6,8,10), confidence (8) and pride (5,8). Emotions would therefore appear to be an important aspect of weight management.

4.11.4 Group differences in negative and positive feelings

There were differences between the groups in the intensity of feelings. Weight gainers had higher levels of negative feelings and lower levels of positive feelings than those who lost weight. Although, when comparing differences between the groups, there were no demonstrable statistically significant changes but there were differences between the groups, which would appear to have clinical significance. The changes in feelings for each group are displayed in **Figure 4.11**

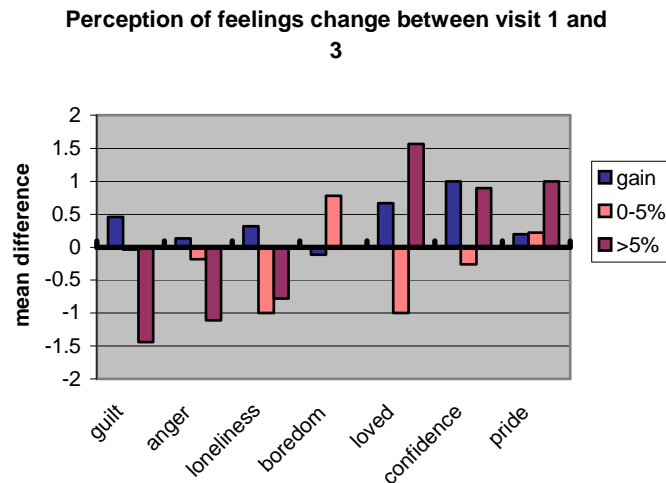


Figure 4.11 Clustered bar chart showing changes in feelings for each group between visits 1 and 3.

4.11.5 Anxiety and depression levels in the weight gain group

The high level of negative feelings were reflected in the prevalence of anxiety and depression with one male (25%) and nine females (75%) having anxiety scores of ≥ 11 , while one male (25%) and 4 females (33%) scored ≥ 11 for depression. Both anxiety ($t(14)=-1.484; p0.162$) and depression ($t(14)=-1.646; p0.124$) levels in this group increased over the duration of the study.

4.11.6 Anxiety and Depression levels in the 0-5% weight loss group

The probability, for this group, of having anxiety and depression, identified by scores of ≥ 11 , was not as high as the weight gainers. Two males (25%) and six females (40%) had these scores for anxiety while for depression it was 4 females (27%) but no males. Those who were anxious were also more likely to be depressed ($p = 0.005$) and both anxiety ($t(22)=0.183; p0.857$) and depression ($t(22)=0.447; p0.660$) levels showed a reduction.

4.11.7 Anxiety and depression levels in the >5% weight loss group

Identification of anxiety and depression levels of ≥ 11 for this group was generally lower than the other two groups. Anxiety, at that level, was identified in one male (33%) and two females (33%) while for depression it was one female (17%) but no males.

4.11.8 Group differences in anxiety and depression levels

However, while both weight loss groups showed a reduction [anxiety ($t(8)=1.441$; $p0.193$); depression ($t(8)=1.809$; $p0.113$)] which was not significant, anxiety (mean 8.75, SD 3.68) at visit three was marginally higher than the 0-5% weight loss group (mean 8.50, SD 3.50) but neither of these groups had as high a mean as the weight gainers (10.71, SD 2.70). Depression means on the other hand, at visit three, were weight gain (8.86, SD 2.60), 0-5% weight loss (6.45, SD 2.86) and >5% weight loss (3.38, SD 4.10). The anxiety and depression differences between the groups during visits 1 and 3 are shown in **Figure 4.12**

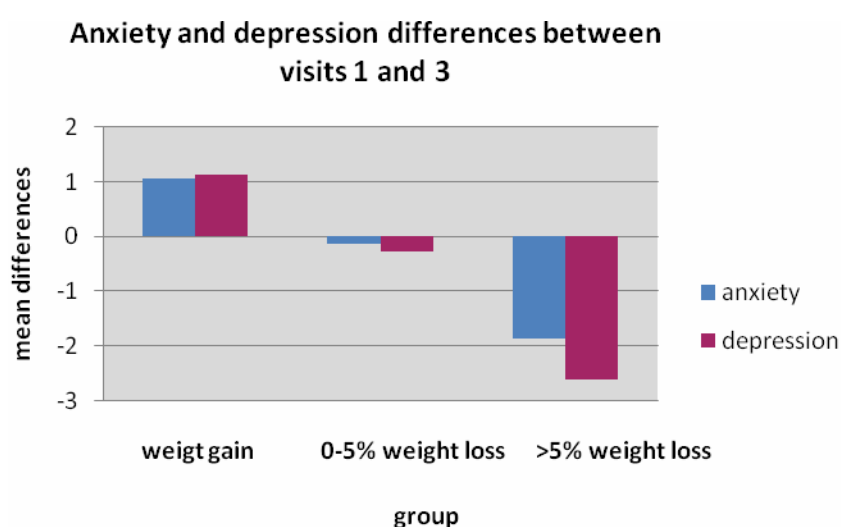


Figure 4.12 Clustered bar chart of mean differences in anxiety and depression scores between visits 1 and 3 for each group.

From exploration of these results it would seem reasonable to include emotional aspects of weight management in the intervention.

4.12 Summary

This objectives of the exploratory phase were to ascertain the relationship between mood, social interaction, functional ability and weight management in obese individuals who were not identified as having an eating disorder. However, the results need to be viewed with some degree of caution and seen in the light of the exploratory nature of this phase.

The exploratory phase of the study facilitated in depth information to be collated for analysis to inform the intervention phase. Initial results indicate relationships between the above variables and that weight gain or loss resulted in changes within these variables. In particular, energy intake, energy expenditure, weight control beliefs, physical, emotional and social aspects of weight change were highlighted suggesting that to incorporate these elements a more holistic approach to intervention is required.

Co-morbidities were numerous and indicated that there was a gender difference with males being more likely to have cardiovascular risk factors, whereas females more frequently suffered from depression, asthma, stress incontinence and hormonal imbalances. Symptoms were problematic with sleep disturbance, body pain, breathlessness, hunger and cravings most often identified, particularly for those who gained weight. In addition, weight gainers had greater functional disability and were less active. Differences in physical aspects of weight management were shown between the groups where symptom severity increased and activity levels decreased in those

with weight gain and the converse was true for those who lost weight. It would appear that identifying symptoms, levels of functional ability and activity in addition to co-morbidities, should be included in assessment.

Anxiety and depression were related to negative emotions and displayed the highest starting levels in weight gainers and worsened over time. Those who lost weight on the other hand, had lower levels of anxiety and depression, which decreased during the study. They also had reduced negative emotions and increased levels of positive emotions. Emotional issues, usually missing from other approaches to weight management would seem pertinent to intervention.

Social support levels in weight gainers were low and decreased over time while those who lost weight felt they had more support and this increased over time. Physical, emotional and social aspects of everyday life impacted on the ability of people suffering from obesity to manage their weight.

The results of this study suggest that by taking a participatory holistic approach to management, nurses could work with individuals to enhance their quality of life and improve their health status. The following diagram (**Figure 4.16**) illustrates not only the complexity of obesity management, but the possible changes achieved by weight loss. A spider's web was utilized to provide a pictorial symbol of the interplay, strength and fragility of the links between various aspects of weight management. The next chapter describes how this evidence informed the intervention for use in primary care.

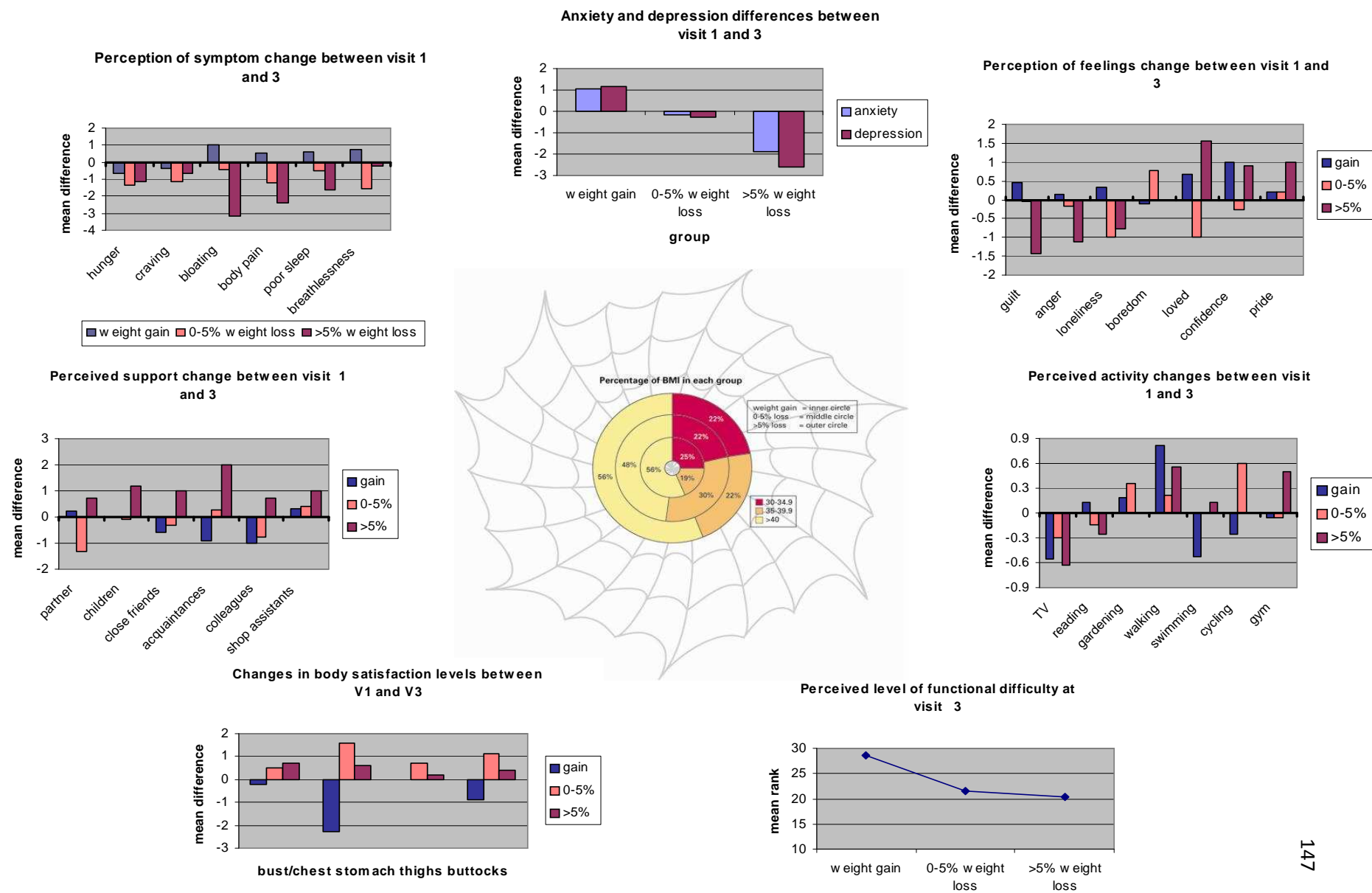


Figure 4.13 Changes between groups

Chapter 5

Integrating the evidence for a holistic approach into practice in primary care

The evidence put forward in the previous chapter is discussed to gain insight into the difficulties of weight management from the perspective of those who are obese. These findings are discussed under the headings of physical, social and emotional well-being. Having this insight is a vital ingredient for the development of a holistic, person-centred approach to obesity management and provides the basis for PNs to work in partnership with individuals. A discussion of how such an approach may be implemented in practice follows, taking into consideration the tools required, educational needs and working context of practice nurses (PNs).

5.1 The individuals' perspectives of weight management

In this study, the emphasis has been on a person centred, holistic approach incorporating physical, social and emotional well-being. The relevance of each of these to a holistic approach to weight management is discussed in turn.

5.1.1. Physical well-being

The exploratory phase shows that physical well-being was compromised by a variety of weight related co-morbidities. The individuals selected for this study had multiple diseases that reflected those previously identified in the literature review. It seemed that over and above the impact of multiple co-morbidities related to their weight, individuals with obesity often had poor physical well-being. Weight gain was associated with a deterioration in physical well-being while individuals who lost weight were able to

reverse this trend. This study particularly highlighted the association between body pain, poor sleep and breathlessness and their relationship with functional ability which worsened with weight gain but reduced in severity with weight loss. However, these results require further research to confirm these inter-relationships in obesity although pain, sleep and mobility associations have been identified for those who had undergone coronary artery bypass surgery (Herlitz et al. 1999; Barnason et al. 2000).

5.1.1.1 Symptoms and physical well-being

The association between pain and functional difficulties may have compromised the ability of those in this study to be active and consequently offer an explanation as to why no one with osteoarthritis lost >5% of their body weight. A study looking at pain in relation to osteoarthritis found that the accompanying functional problems decreased the quality of life but that social support provided a buffer against these negative effects (Jakobbson and Hallberg 2002). However, the buffering effect for those with osteoarthritis in this study was not evident as they had low levels of support, and thus may have been less able to cope with the pain (McColl et al. 1995).

It could be that apart from any disease, weight itself affects the degree of pain experienced, as Fontaine et al. (1997) found that, compared to the general population, the obese perceived themselves to have more body pain. According to Lackner et al. (1996) it is the subjective experience of pain that is important to individuals. Roper et al. (1983) agreed with this which was reflected in their quote from McCaffery (1983): *“Pain is what the patient says it is, existing when he says it does”*.

Sleep disturbance is known to be associated with a number of obesity related co-morbidities already identified in this study such as arthritis, asthma, heart disease, hypertension, gastroesophageal reflux disease, sleep apnoea and depression (Calhoun 2003; Suganuma et al. 2001; Lamberg 2003). Another indication of sleep disturbance may be sleep apnoea where those affected would often snore loudly and have periods of apnoea or choking during sleep, causing sleep disturbances which resulted in daytime sleepiness. However, disturbed sleep is rarely reported by individuals and if it is, not usually followed up (Resta et al. 2003; Merritt 2000).

Another symptom closely associated with pain in those who gained weight in this study was breathlessness both of which were associated with functional ability. The Swedish Obesity Study (SOS) (Karason et al. 2000) had similar findings where weight loss resulted in a reduction of self-reported breathlessness and chest discomfort. Jones and Bell (2004) suggested incorporating activity into daily routines as a way forward for individuals with functional difficulties. These findings were corroborated by the SOS study (Karason et al. 2000) where the resulting weight loss improved functional ability.

5.1.1.2 Physical activity and functional ability

The high level of self-reported functional difficulty in this study highlights the need for individualised care, particularly in relation to physical activity. The intensity of physical activity required for weight loss has caused some debate. Some assert that to be effective it should be vigorous (Tremblay et al. 1990; Schoeller et al. 1997) while others (Hammond et al. 1997) advocate that vigorous exercise should only be prescribed in exceptional circumstances. The results of this study suggest that rather than being given an 'ideal' prescription for exercise, individuals should be involved in deciding what they can achieve, as changes in everyday activities are important (Owen 1994).

This was also demonstrated by Rosmond et al. (1996) where physical activity levels of men, specifically walking ($p = 0.005$) and gardening ($p = 0.013$), were inversely proportional to BMI ($p < 0.001$).

Leisure-time physical activity levels differed between the three groups in the exploratory phase with those who gained weight being less active than those who lost weight. In addition, those who lost most weight were more active especially in higher intensity activities. A review, carried out by Votruba et al. (2000), on the role of activity in obesity treatment provides supporting evidence for these results. However, Votruba et al. (2000) stated that some of the studies were very intensive and not applicable to free living individuals.

Rosmond et al. (1996) also demonstrated that those who watched TV were more likely to have a higher BMI ($p < 0.001$). The growth in TV ownership has been in line with the escalation in obesity prevalence (Prentice and Jebb 1995). Increasing computer usage and microchip development will undoubtedly encourage more inactive lifestyles demonstrating that assessment of inactivity is equally as important as assessing activity. The present study, however, while demonstrating that physical activity and weight change are related, also showed that even those who watched more than 40 hours of television a week could still lose weight. Although everyone watched less television, weight gainers also reduced their higher intensity activities such as swimming and cycling. This highlights the importance of individual assessment taking into account a broad range and intensity of activities.

5.1.2 Social well-being

Social support, as in other studies (Kayman et al. 1990; Klem et al. 1998), was an important factor for the individuals in this study. As in this study, Ross (1994) and later, Brown et al. (2006) found that those who were obese had higher levels of social isolation. The exploratory phase of this study identified that those who gained weight became increasingly more isolated in comparison to weight losers who actually increased their social contact. This would seem to suggest that it is not obesity per se that is associated with isolation, as the individuals in each group had a similar BMI range, but rather a case of the perception of weight gain or loss. Furthermore, weight change is influenced by social interactions both within the family and the wider social circle.

5.1.3 Emotional well-being

Emotions were demonstrated to be of importance in both phases of this research and the need to take account of them in subsequent treatment. Adolfsson et al. (2002) carried out a qualitative study of a lifestyle intervention for weight reduction and concluded that emotional well-being should be addressed. Doll et al. (2000), in a large postal survey of the general population in four English counties found that some obese people had decreased emotional well-being. However, Doll et al. (2000) also maintained that this was due to co-morbidities. The results from the exploratory phase suggested that weight loss improved emotional status and in contrast weight gain was associated with decreased emotional well-being, in particular, anger, guilt and loneliness. These same feelings were reflected in the intervention phase. Weight loss was reported to make individuals feel better about themselves. Weight gain, on the other hand, for example, created anger and guilt caused by a feeling of not being able to control weight. The

reason may have been that weight gainers internalise anger and guilt, which decreases their feelings of self-worth and results in self-loathing and isolation (Puhl and Brownell 2003b).

5.1.3.1 Stigma and emotions

The internalisation of negative feelings may have been why weight gainers in the exploratory phase had an increase in body dissatisfaction. Perhaps, women in particular, believe the messages conveyed by the media as found by Heinberg and Thompson (1995). They suggest that exposure to television commercials created greater body dissatisfaction when the ultra thin body was continually portrayed as the ideal. The rise in television viewing (Prentice and Jebb 1995) may have exacerbated the prevalence of repeated exposure. Furthermore, Stice (2002) undertook a meta-analytic review and found that high levels of internalisation were associated with eating disturbance in bulimia although it is possible that the same could apply to obesity. Similarly, women's magazines have also been implicated in body dissatisfaction (Nemeroff et al. 1994).

Interestingly, those who lost weight, regardless of the amount, also displayed high anger levels. Their anger was associated with body dissatisfaction and guilt. It could be that in spite of their success in weight loss they continued to suffer from stigmatisation and externalised their anger towards those who they felt were displaying prejudice against them, as a coping mechanism (Puhl and Brownell 2003b). Myers and Rosen (1999) examined how the obese dealt with stigma and stated that there were differences in how individuals coped perhaps as a result of their awareness of how others viewed obesity (Brown et al. 2006). That would concur with the interpretation here where weight gainers self-criticised and isolated themselves while those who lost the most weight felt

that they had support from others which perhaps enabled them to express their emotions (Ryden et al. 2003).

5.1.3.2 Stress and negative emotions

It is estimated that 20% of the general population (Royal College of Psychiatrists 2002) have depression. Those who are obese would seem to be at higher risk of depression not only due to obesity co-morbidities but also other physical, social and emotional pressures previously highlighted. Therefore, the exploratory phase results were compared to medical inpatients in a Scottish hospital (Beausang and Syed 1998). Both studies used the HADS to identify anxiety and depression. While findings for depression were similar (12% vs 10% male and 24% vs 24% female) anxiety levels in this study showed a marked increase particularly in females (16% vs 21 % male and 27% vs 47% female). This would indicate that anxiety levels in the obese may be higher. These results are supported by an extensive study of Swedish individuals seeking treatment for their obesity (Ryden et al. 2003). Although Wardle (2005) disputes that obese individuals are more likely to be depressed she distinguishes between those seeking treatment for their obesity and those who are not and further delineates that the strongest link with depression is body dissatisfaction. One unexpected result was the identification of the relationship between grief and weight gain and suggests the relevance of taking not only a holistic approach but also involving the individual in a person centred assessment. Further research is warranted to explore this finding in more depth.

5.1.3.3 Beliefs and emotions

One outcome, which weight gainers and losers had in common was the reduction of both hunger and cravings. This apparent anomaly could be explained by applying Weiner's theory of attribution. It would suggest that weight gainers related hunger to cravings and reacted by increasing their food intake, resulting in weight gain. They had a strong internal belief that they were the only ones who could control their weight, which was associated with anger. They also had high levels of guilt, therefore it may be that they internalised their failure to control their weight, thus causing anger. Both anger and guilt have been associated with relapse (Grilo et al. 1989; Poston II et al. 1999). In addition, this group did not believe that weight change was due to luck and so were unable to preserve their self-esteem (Weiner et al. 1974). This in turn suggests that since expectations influence behaviours weight would continue to increase if expectations are not altered.

Weight losers, on the other hand, also reduced their hunger levels even more significantly, but they had far lower levels of guilt and anger and higher levels of positive feelings. It would appear that they internalised their success in losing weight and therefore reacted in a positive emotional way, more specifically, with raised levels of confidence and pride. These feelings are associated with higher self-esteem. Add to this, the future stable expectations of success and weight loss should continue as positive behaviours will be maintained. Further evidence for this interpretation is the fact that those who lost most weight had the highest levels of positive feelings.

In conclusion, physical, social and emotional well-being all impact on how individuals manage their weight. Emotional well-being including weight management beliefs and

expectations were seen to be of particular relevance. This suggests that weight management requires a more holistic approach than is recommended in current guidelines. Before implementing such an intervention consideration had to be given as to the most suitable mode of delivery.

5.2 Incorporating the evidence in the booklet for individuals

The aim of the booklet ‘My Personal Approach to Weight Management’, as already described in Chapter 3, was to encourage person centred, holistic care and facilitate self management. However, structured tools may compromise this aim (Mitcheson and Cowley 2002). Thus, the booklet for individuals was designed to try and avoid these pitfalls. Therefore, it was formulated to help individuals identify their own needs and work in partnership with PNs. Furthermore, it was created to encourage feedback to enhance individual empowerment (Pearson et al. 2006). The difficulty was trying to incorporate these elements while keeping it simple.

The Roper, Logan and Tierney (RLT) model facilitated the transfer of evidence into the booklet for individuals. At the macro level the holistic nature of RLT aided the incorporation of physical, psychological, sociocultural and environmental factors. At the micro level the ‘activities of daily living’, detailed previously in chapter 2, took forward the concepts of energy intake, energy expenditure, beliefs, physical, social and emotional well-being at an everyday level. One of the key areas which facilitated this was the weight management maps of the booklet for individuals to use in the intervention phase. Data from the exploratory phase was transposed into an example map to encourage individuals to view both the macro and micro picture. The purpose of providing a blank map was to aid individuals to think about their own situation and

influences on their weight, thereby being very person-centred. It also aimed to facilitate discussion for goal setting. RLT provided direction for assessment and goal setting which would appear to be an important aspect of aiding behaviour change. It also recognises that the ability to cope with change is not linear but moves back and fore on a continuum. These aspects were included in the goal setting section of the booklet.

The combination of materials (The two booklets: My Personal Approach to Weight Management and A Holistic Approach to Weight Management with the addition of various practical tools) were designed to aid PNs assist individuals in their care to achieve good weight management through a person centred, holistic approach. However, any new approach to practice requires an educational input (Furze and Pearcey 1999; Howard 1999; Freshwater 2008).

5.3 Facilitating nursing education

The researcher had an educative role in the study, which was viewed as facilitating nursing practice in obesity management. That is, learning from each other and sharing knowledge. Initially, when approaching PNs to participate in the research a brief overview of obesity was presented and the materials displayed. Feedback and discussion of who and how to recruit followed, combining both researcher and nurse perspectives. The aim was that nurses would feel empowered to implement the intervention.

The booklet ‘A Holistic Approach to Weight Management’, developed for PNs to inform their practice, sought to strike a relevant balance of breadth and depth. A variety of approaches were taken to provide knowledge, present evidence, inform practice,

stimulate reflection and yet be practical and realistic. Included in these approaches was a short list of websites. These websites were wide ranging and contained numerous links to other sites. However, it was reported that very few PNs accessed them due to lack of opportunity.

Evidence from the exploratory phase, in the form of case histories, was included as one of the activities. Two case histories were selected. One detailed the individual who gained most weight during the six-month longitudinal study and the other provided information on the individual who lost most weight. To allow the evidence to speak for itself, the case studies were the experiences of real people and not fictional characters.

Although the case studies were real people, transferring the knowledge into practice demands that the context be considered (Daly et al. 2006). During outreach visits the needs of each PN were taken into account. They were encouraged to reflect on their consultations with obese individuals as reflective practice is deemed to facilitate effective clinical practice (Benner et al. 1996; Pearson et al. 2006). This enabled the researcher to adapt to different knowledge levels and skills, rather than be prescriptive when providing ongoing education. However, these opportunities were limited due to time constraints on both the researcher and PNs.

To facilitate the transfer of knowledge into practice, practical tools were also created for PNs to use in assessment. As stated earlier, the general population is becoming heavier but current weight conversion charts do not adequately reflect this trend. Consequently, 10 % weight loss charts also fail to provide sufficient information. Furthermore, tape measures for measuring waist circumference may not be long enough. However, some

tape measures are available with the risk assessment colour coded for men and women on either side of the tape. These were provided along with large sphygmomanometer cuffs. If PNs are to carry out good and accurate care they need proper tools.

5.4 Integrating the evidence into practice

The evidence was integrated into practice at both an organisational and individual level. Although there was no intention in this study to impose organisational changes within the practice context, it was considered important to view each practice holistically to have an awareness of possible influences on how nurses practised. One potential area of tension may be that the person-centred approach does not integrate easily with a possible 'market driven' environment of the practice (McCormack 1999). It would appear that in addition to the climate within the practice, other factors such as the role of the nurse, availability of support, education and time for research are all influential (Meijers et al. 2006). Therefore, there was a balance to be struck between the needs of the practice, the research project and those of nurses consequently negotiation and facilitation skills were important aspects of implementing the research.

For example, the researcher was very aware from past experience of the need to negotiate suitable times to visit the practices and be willing to change these arrangements at the last minute. Nurses who volunteered for the study negotiated with their practices before taking part although had the option of the researcher approaching the practice. Great care was taken not to encroach on the nurses' domain while still being supportive. It was deemed important that the researcher be flexible in the method and times by which contact was continued with nurses to accommodate their preferences, whether it be by telephone, email or letter. To ensure its relevance in this

context, PNs were invited to participate in researching this approach as Rycroft-Malone et al. (2004) argued that “*Research evidence is more powerful when it matches clinical experience*” (p85).

The next chapter describes how this approach to weight management using these materials was implemented in primary care.

Chapter 6

Implementation and outcomes of the holistic approach to weight management in primary care

The previous chapters examined the relevance of including physical, social and emotional well-being to develop materials for a holistic approach to weight management. This chapter explores in depth how Practice Nurses (PNs) and individuals used these materials to implement weight management in primary care and the resulting outcomes. These results move on from having previously looked at the separate parts to learn more about ‘the whole’ to examining how the parts link and interact with ‘the whole’ in everyday situations. Data collection was achieved through the compilation of a number of sources:

- questionnaires about the nurses’ background and current practice;
- telephone interviews between nurses and the researcher;
- booklets devised by the researcher and used by individuals and nurses in planning and assessing weight management;
- documents containing measurements of individuals taken by nurses and;
- questionnaires devised to gain feedback from individuals about the holistic approach.

Therefore, in the presentation of quantitative data, percentages are rarely given as figures were not always consistent, neither were all booklets (My Approach to Weight Management) fully completed. Furthermore in an attempt to reduce the complexity of presenting the results for individuals no distinction was generally made between male and female.

The themes of role development, contextual influences and barriers to weight management emerged from the qualitative data collected, coded and categorised from the various sources listed above. The application of these themes to two case studies highlighted similarities and differences in using the holistic approach to weight management to practice.

After detailing the recruitment process and characteristics of PNs and individuals there is an assessment of the role of PNs, their support and education for role development and, in particular, obesity management. Once this foundation is laid the subsequent qualitative data analysis provides insight into the implementation and outcomes of the holistic approach to weight management.

6.1 Nurse recruitment

All recruited nurses were female and involved in chronic disease management. Of the 24 nurses who responded, 4 were not recruited for the following reasons: 1 changed jobs, 1 was involved in another study, 1 had staffing problems with someone off sick and the remaining one did not respond to follow-up. That left 20 nurses.

6.1.1 *Geographical spread*

Of the 20 nurses recruited, one practised in a deprived city area while the others were based either in towns or villages. The city practice of nearly 10,000 patients had the unfortunate distinction of having one of the highest morbidity rates in Scotland particularly for cardiovascular disease. The other 19 nurses, whose practices were often remote from each other, were in a geographical area covering approximately 2,000 square miles, where the local economy is based on agriculture, forestry, tourism and a

few light industries. The combination of this rural location and the fact that it was distanced from the researcher's base meant that it was crucial for travel and practice visits to be planned and co-ordinated well in advance.

6.1.2 *Background information of nurses*

Following the recruitment process, 18 of the 20 participating nurses provided background information. Although initially having agreed to participate and being provided with materials, 2 nurses from the same practice decided to withdraw due to time pressures and thus provided no further information. Those nurses who were recruited at a later date had either less time to identify and approach individuals for the study or were unable to recruit any individuals. Each practice was given a letter as code, therefore, when referring to a nurse the code letter is used and when referring to an individual from that practice the same code letter is used together with the number allocated to that individual. Details for all 18 nurses are shown in **Table 6.1**

ID code	Years qualified	Years in primary care	Age Group	Hours of work per week	Number of Diplomas
A ♦	27	13	40-49	37.5	1
B ♦	20	11	40-49	17.0	4
C	30	12	50-59	37.5	6
D ○	30	15	50-59	18.5	1
E ○	**	**	**	23.5	1
F ○	35	15	50-59	30.0	3
G ♦○	21	3	40-49	18.0	2
H ♦○	30	25	40-49	**	**
J ♦○	30	16	50-59	37.5	2
K ○	11	7	30-39	30.0	1
P	12	3	30-39	**	**
Q ♦	34	15	50-59	37.5	4
R ♦	30	29	50-59	30.0	1
S ♦	36	23	50-59	37.5	6
T	25	5	40-49	24.0	3
V	**	**	**	20.0	2
W ♦	25	19	40-49	27.0	3
W1	24	3	40-49	**	**

** missing data ♦ Nurses who recruited individuals ○ 1 month recruitment time

Table 6.1 *Table of the years qualified, years in primary care, age group, hours worked per week and number of diplomas for each recruited nurse.*

All the nurses had a great deal of nursing experience having been qualified between 11 and 36 years (mean 26.2 sd 7.4). The portion of that time based in primary care varied between 3 and 29 years (mean 13.3 sd 8.0). Five worked full-time with the remaining thirteen working part-time (mean 28.4 sd 7.9). Following initiation of the study one nurse (P) became unwell and took early maternity leave before recruiting any individuals. Of the remaining 17 nurses 9 were able to recruit individuals with obesity.

6.2 Recruitment of individuals

All nurses were requested to recruit five individuals each and the only recruitment criteria stipulated was a BMI ≥ 30 kg/m². They used a variety of strategies to identify suitable candidates. One nurse tried searching the practice database without much success indicating that either the search parameters were inappropriate or the system did not allow obesity to be identified. The most common approach was to target those who had appointments already booked, although those who were short of time occasionally tried to contact people by telephone. This also created problems as one nurse identified. *“I think nowadays with everybody working or whatever. I know even trying to get back for blood results you’re ending up leaving messages on machines and things and it’s not ideal.”* (V) Occasionally, GPs were asked to pinpoint individuals but mostly nurses tended to target those who were known to them through chronic disease management clinics. **Table 6.2** shows the details of individual recruitment and the data collected from them. That is, it details how many obese individuals were approached to take part in this phase of the study and those who were recruited. It also identifies how many individuals returned their booklets, and questionnaires at the end of the study in addition to the physical measurements taken by the PNs.

Individual recruitment and data collected				
Approached	Recruited	Booklets returned	Questionnaires returned	Physical parameters
(n)	(n)	(n)	(n)	(n)
57	28	18	17	24

Table 6.2 *Table of individuals approached and recruited by nurses, booklets and questionnaires returned by individuals, and physical parameters taken by nurses.*

6.2.1 Background information of individuals

Of the 28 individuals recruited, 4 were lost to follow-up. **Figure 6.1** shows the age range by gender for 23 of the remaining 24 individuals.

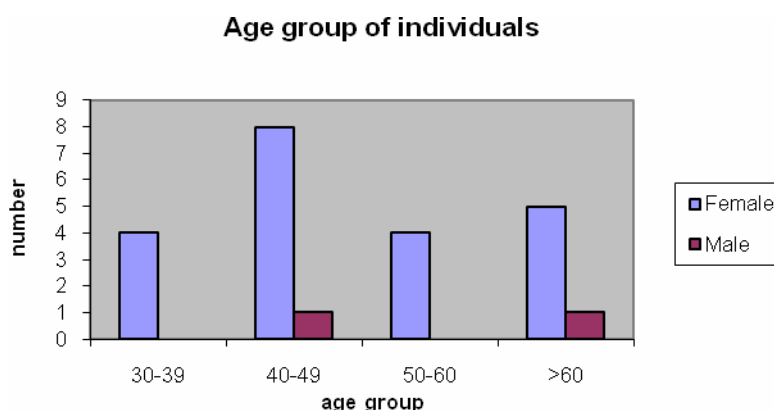


Figure 6.1 Clustered bar chart showing distribution of age range of males and females.

The age range of the individuals was 32 to 76 (mean 49.6, sd 12.2). The intervention population, although smaller in number than those recruited for the exploratory phase, showed a similar pattern of age by gender in that the women tended to be younger than the men but unlike those in the exploratory phase there was no-one under 30 years of age. In both phases recruitment showed a similar gender bias with women outnumbering men. Although the bias was stronger in the intervention phase, it has to be borne in mind that the numbers were smaller. Nonetheless, it does appear that women, particularly younger women, are more likely to be identified and targeted for weight management. The BMI range by gender is shown in **Figure 6.2**

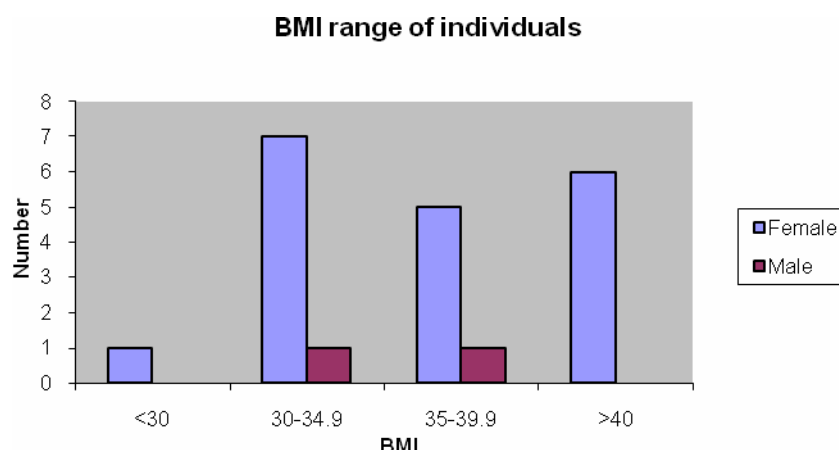


Figure 6.2 *Clustered bar chart showing the number of males and females in each BMI category.*

The mean BMI was 39.4 (sd 7.4). Body weights ranged from 79.1kg to 143.0kg (mean 103.9 sd19.8). This compared to a broader range of 62.3kg to 185.7kg and a mean of 110kg for the population in the exploratory phase. However, it would appear that primary care nurses, like their colleagues in secondary care where the exploratory phase was carried out, are providing care for individuals who are obese and may suffer the consequent range of co-morbidities. Furthermore, the individuals recruited by primary care nurses, included those who were extremely obese, that is with class III obesity, and as shown in **Table 6.3** a high percentage of individuals had numerous co-morbidities. Within the same table, comparative data is presented for both phases, calculated to the nearest whole number.

Number of co-morbidities	Number of co-morbidities per individual					
	0	1	2	3	4	5
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Exploratory phase	4(6)	22(34)	15(23)	16(25)	6(9)	1(2)
Intervention phase	0(0)	3(16)	6(32)	1(5)	6(32)	3(16)

Table 6.3 Table showing the number of co-morbidities per individual for the exploratory and intervention phases.

This would suggest that the primary care cohort of the intervention phase had even higher co-morbidity rates than their secondary care counterparts in the exploratory phase. It would seem that there are many physical problems associated with obesity for which the Roper, Logan and Tierney (2000) model is applicable. The range of co-morbidities are shown in **Figure 6.3**

Obesity related co-morbidities of individuals

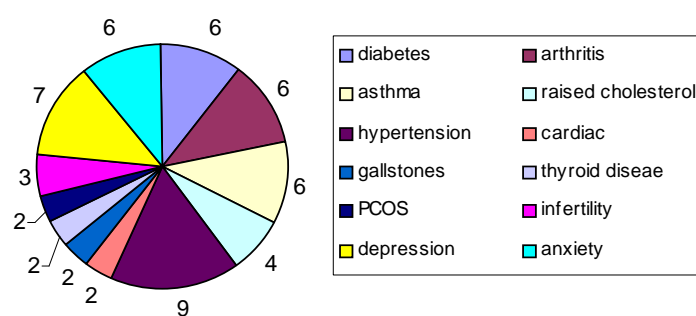


Figure 6.3 Pie chart showing the number of individuals having each co-morbidity.

Unlike in the exploratory phase, individuals with type II diabetes were included in the intervention phase and it was these individuals who tended to have the greater number of co-morbidities. Similarities were shown in both phases in the prevalence of anxiety

and depression levels. Other commonalities, particularly highlighted in the 17 ‘weight management maps’ returned, were problems with mobility (n = 13), sleep (n = 8) and bladder (n = 4) again indicating the relevance of activities of living (Roper et al. 2000).

Previous attempts at weight loss were explored. Of the 28 individuals recruited 20 indicated the number of attempts they had made at managing their weight varied, as shown in **Table 6.4**

	Number of previous attempts at weight loss				
	Never	Once	Occasionally	Often	All the time
Male			2		
Female	1	2	4	8	3

Table 6.4 *Table showing the number of previous attempts at weight loss by male and female.*

Not only had some individuals tried to lose weight on numerous occasions they also employed a variety of strategies. These strategies, together with the professionals who had been consulted to assist with weight management are presented in **Figure 6.4**

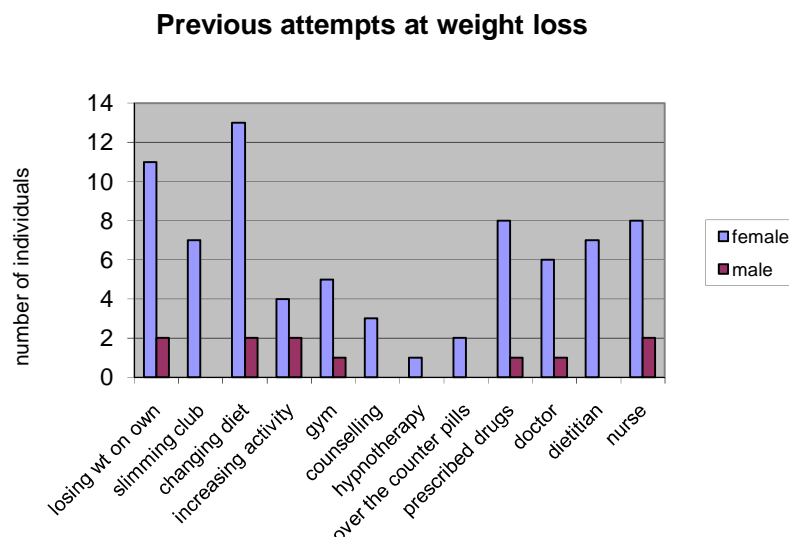


Figure 6.4 Clustered bar chart showing the number of strategies employed by individuals in previous attempts at weight loss and the professionals they consulted by male and female.

In an effort to address their weight, some individuals used a variety of approaches. Since all individuals had at least one co-morbidity related to obesity, as seen in **Figure 6.3**, each one of them had important health issues. As all the PNs were involved in chronic disease management this may have been their prime reason for targeting and recruiting these individuals.

Although these individuals had previously attempted to address their weight problem, some of them on many occasions, after using the holistic, person centred approach, 78% were successful in losing weight. The changes in weight are presented in **Figure 6.5**

Weight change

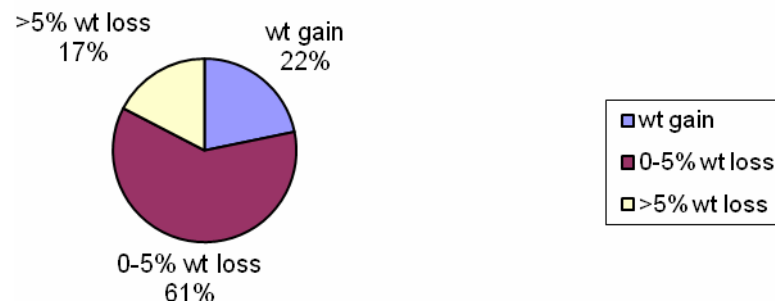


Figure 6.5 *The percentage of individuals who gained weight, lost 0-5% and >5% of their body weight.*

For individuals themselves, a range of emotions also played a significant part in weight management as had been shown earlier in the exploratory phase for those attending a secondary care clinic. Individuals in primary care were no different as indicated in the following statements gathered from their booklets.

- *Feel like 'big blob' (A01)*
- *Guilty (B01)*
- *I get angry with myself (G05)*
- *I feel inadequate and a failure a lot of the time (H04)*
- *I don't like looking at my body. It depresses me (J02)*
- *I am very self critical (Q01)*
- *Disgusted with lack of self control (R01)*

Having presented some background information of both PNs and the individuals they recruited the next section introduces the context in which the holistic approach to weight management was implemented.

6.3 PN role in primary care

Role development emerged as an important theme in relation to implementing the holistic approach to weight management. The categories relating to role development were: support and education, support for obesity management and obesity education as seen in **Figure 6.6**

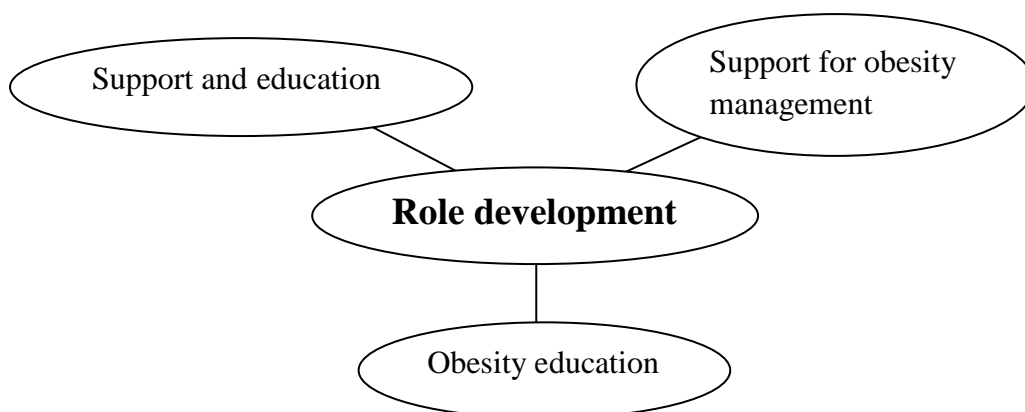


Figure 6.6 *The theme of role development and related categories of support and education, support for obesity management and obesity education.*

The PNs who volunteered for this study were all involved in chronic disease management. They viewed obesity management as relevant to their role particularly in relation to their remit in chronic disease management, saying that those with obesity

“have chronic disease problems anyway so I’d be seeing them for another thing. That’s why I think practice nurses are in a good position to do things like this” (S) and it was “easier to broach maybe in the context of them having some kind of chronic disease and you can say, you know, if you lose a bit of weight, then that’s maybe going to help your condition” (K).

6.3.1 Support and education for role development

In order to carry out their remit for chronic disease management PNs were supported to undertake diplomas to fulfil the requirement of the GMS contract.

“If it’s something that the GPs sort of say that I have to go on then they will pay for me but if it’s something that, for instance, the COPD course, it was an initiative by our LHCC. They actually paid for it, but again, if I had wanted to do that and I had asked a few years ago they would have said ‘No, it wasn’t within the remit of the practice’ but because of the contract it suddenly was plummeted, well made the remit”(S).

The type of diplomas undertaken, as seen in **Table 6.1**, have obesity as a common link. However, how PNs view obesity education and management within the chronic disease management diplomas appears to differ. One nurses’ experience was that obesity management *“wasn’t a big part of it at all”(G)*. Another nurse undertaking a different diploma said, *“You know, it’s healthy eating, weight management in general, so I found that valuable really”(E)*. Although there are differences in either the perception or content of diplomas for co-morbidities it appears that dietary advice is still the main focus of weight management.

Even for these diplomas which are encouraged PNs found that *“a lot of the study time is all your own time, you know. It’s a shame for any nurse who wants to develop themselves”(B)*. For some this means that they *“usually use up some of my holiday time”(S)*.

Some GPs, however, “*are better than others at seeing the importance of it. You know that nurses need to keep their development up but personal development plans are slightly alien in general practice*”(B). If practices accept Agenda for Change the situation may improve for everyone as

“ things are now changing and our GPs have now taken on Agenda for Change so they’ve actually been looking at the personal development side. Therefore, there is a wee bit more negotiation and compromise with that.”(R).

There still exists, however, an obvious tension between the needs of the practice and educational needs, as nurses themselves see it. “*What they see as specific requirements for the job are not necessarily what you feel are the personal requirements.*”(R).

In recognition of this the practice nurse advisor in one area recently negotiated with all the local managers to allow practice nurses time for continuing professional development. A programme was developed in conjunction with the local school of nursing. “*We’ve chosen things that are pertinent to practice nursing but also slightly different from the chronic disease stuff as well*”(B). Unlike other educational sessions, nurses themselves could request items of interest so “*we asked if we could have stress management (Q2)*”. PNs are therefore, looking for interventions that are relevant to nursing practice.

6.3.2 Support for obesity management in practice

Practice nurses feel unsupported in weight management. “*There’s nothing locally to help us and we as practice nurses see it all the time, have to deal with it and basically we felt a bit unsupported, really*”(J). Although there was the option to refer patients to

dietetics the waiting list was several months long and offered only one appointment. This was probably due to a shortage of available dietitians. Most of the nurses who did refer individuals to dietetics tended to use the service mainly for diabetic patients.

Unfortunately, some nurses had negative feedback from patients. *“They weren’t told anything they hadn’t been told already in practice and they’ve got to trail up the Infirmary to be seen as well”*(B). While this was also the experience of other nurses they sometimes saw it *“more as a reinforcement of what they’ve already been told”*(D). Some others felt that they had good support from the dietitian for dietary information particularly in relation to co-morbidities. For diabetes management, for example, one nurse had received support from dietetic colleagues, occasionally having study days with them with the result that she felt *“quite confident on the dietary side of things”*(S). However, as has been argued previously, obesity management is far more complex than simply focusing on dietary aspects. This, and the fact that the experience of individuals was not always positive, may indicate why individuals were rarely referred only for obesity management.

In addition, some doctors have the attitude that *‘no fat people came out of Belsen’*(W) and feel that *“giving patients time is just blethering”*(W). Therefore added to the fact that there are no ‘brownie points’ for obesity management at the time the study was undertaken, there was sometimes little support for it within some of the practices. There is therefore a need for support as *“overall, practice nurses are all desperate to find ways to deal with weight management because it’s such a problem”*(B). As one nurse put it, you *“Tend to bang your head up against the wall”*(R) and all agreed that it was *“quite a difficult area, not full of success”*(V). In addition to frustration at the lack of success there appears to be a need for educational courses on obesity management.

6.3.3 Obesity education for PNs

One PN reflected this need for obesity education saying she *“could do with maybe some training or something in that aspect of things. I’ve just never come across anything sort of relevant”*(G). Furthermore, it seemed that obesity management is not a priority in education as another PN discovered. *“I have recently requested their prospectus for next year and there’s definitely nothing related to weight management”*(E). Even when specific courses on obesity were identified they did not always come up to expectations.

“I was looking for something extra, something different that I could try and I didn’t really find it there. Hmm, it really, I mean, there was a nutritionist speaking and obviously some doctors speaking as well and it really was just, I just feel telling us what we already know.....It was really just, healthy eating and the effects of poor diet”(D).

However, greater satisfaction was experienced when a broader picture was portrayed at a different study day, funded by the pharmaceutical industry.

“They were sort of trying to instil in us that to encourage, and you know, the patients and not to have too outrageous goals. To treat everybody as an individual. They all had different needs, different emotions, different reasons why they needed to lose weight.”(S).

It appears that PNs have an interest in obesity management but are often frustrated at the perceived lack of suitable education to support them in practice. Greater insight into what PNs view as relevant may be gained by identifying their previous educational experiences.

6.3.4 Educational influences on PNs' approach to obesity management

Many of the PNs undertook their training when nursing was task orientated and treatment of individuals in their care was undertaken using the paternalistic, biomedical model. For some, the experience of this training may have led to a restricted view of weight management and made it difficult to adopt a holistic, person centred approach. However, other PNs who trained in that same era allowed other educational experiences to influence their practice.

One nurse candidly reported that in relation to weight management she was probably looking for a 'quick fix' for treating individuals. She went on to describe her current practice in the following way:

"patients either refer themselves or it comes from the doctor. They just come and we have a discussion about their diet and I do all the weights...they really just come and we try and review their diet situation and hmm, basically just that's about it really"(T).

Therefore, it may be that some PNs either do not consider viewing weight management from a holistic perspective or found it difficult to do so.

Nursing has changed a great deal over the last few decades from being task orientated to a more person-centred approach and many of the nurses had integrated changes into their practice. One nurse spoke of how undertaking further education had impacted on her practice.

“ That certainly broadened my knowledge about research based practice because I was a task orientated trained nurse which was 30 years ago, obviously, and when you’re maybe having students and things like that plus you own work, I found that was a very helpful course to attend.....So really, basically, I went because I really knew that I had to go so that I would practice more safely and more effectively”(R).

Another nurse who also trained in what may be considered a task orientated era was one of the first nurses to undertake a degree and recalled the impact a psychology tutor had on her practice and why she was attracted to the holistic approach to weight management.

“I suppose that’s how I looked at weight management, sort of like, getting underneath the problem because often there is a problem. I’ve always tried to sort of look on it, probably the way you’ve done in a more holistic way and sort of tried to unravel why they’ve become, especially if they are particularly overweight, why they’ve become the weight they are. Strip off all the old, you know, slimming classes, because a lot of them they have tried them all and then go back to let’s start again.... looking at the whole thing, exercise, lifestyle, how they see themselves. Very much what’s in your wee booklet but I didn’t have it just as organised”(J).

The holistic approach to weight management seems to have relevance for this type of practice.

“I think with the information that you gave us that you’re not really dealing with the weight, the weight isn’t the prime issue. It’s what’s causing the weight and I thought that this was, well it looked a really good approach and it looked as if there was a wee bit of a structured framework to work towards. Although you could say to patients, where do you live and what are the other influences in life, what are their personal beliefs and perceptions, nothing was put on paper”(R).

Therefore, although some PNs were attracted to the holistic approach to weight management others found it difficult to view weight management from a broader perspective, regardless of when they trained. Education would appear to play an important part in how obesity is viewed. Therefore, education and support for implementing the holistic approach to weight management seemed important. Furthermore, it needs to be relevant to nursing.

6.4 Support for implementing the holistic approach to weight management

The means of providing support and education for implementing the holistic approach to weight management had to take into consideration the context in which the PNs practiced. In large geographical areas, such as the one where most of the nurses were recruited for this study, nurses often travel many miles as well as using their own time to further their own professional practice and development. The interest in obesity management was obvious by these nurses doing just that for a one-hour meeting in the evening to introduce the study. For those who could not attend, the researcher visited each nurse at their place of work. A planned study day failed to materialise due to constraints on funding, the difficulty with nurse time and the geography of the

participating practices. Most nurses felt that “*another meeting would have been useful to go through the patient booklet more thoroughly*”(W). While attempts were made to facilitate this there was great difficulty trying to arrange a suitable time for everyone and due to the time limited research it had to be abandoned.

As a result, apart from the one-hour input there was a lack of opportunity for teaching although the researcher was available to the nurses by telephone and email. Due to most nurses having to implement this research within their restricted appointment times these contacts when they did occur were often made in the nurses off duty time. Two nurses took up the offer of the researcher sitting in on a consultation. However, whether uptake of the support offered was influenced by the PNs’ personal choice or the context in which they worked may have been influenced by their level of responsibility and autonomy.

6.5 Contextual influences on implementing the holistic approach to weight management

Contextual influence emerged as a theme which influenced the implementation of the holistic approach to weight management. The theme categories were autonomy, negotiation and bending the rules as seen in **Figure 6.7**

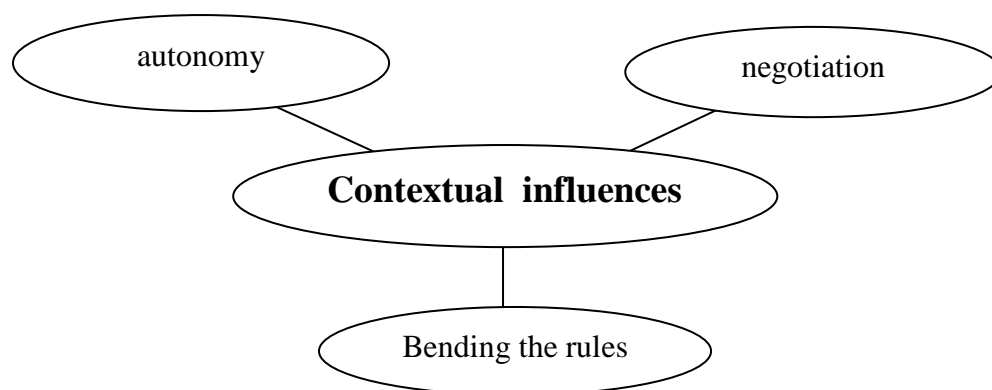


Figure 6.7 *The categories of autonomy, negotiation and bending the rules in the theme of contextual influences*

Whether the level of responsibility and autonomy was dictated by the practice context, devolved responsibility from others within the practice, or personal choice was difficult to ascertain. However, it became apparent that most PNs tried to increase their autonomy through negotiation with practice colleagues or simply ‘bending the rules’ as one PN put it.

6.5.1 Autonomy

The nurses in this study appeared to exercise various levels of autonomy. One nurse “*just look(ed) at the notes and see what to do from the notes*”(T). Viewed simplistically this can be interpreted as simply carrying out instructions within a hierarchical system and reflect the historical view of nurses being ‘doctors’ handmaidens’ (Darbyshire` 2006). Other nurses appeared to have greater autonomy, particularly with regard to chronic disease management reflecting how the nursing role has changed.

“I totally have control of that so once they’re on my disease register I’m the one that decides when to see them. Of course, in liaison with the GP, if he feels, or she feels that, you know, they wanted them seen sooner but usually at the end of the day I’ll tell them what’s happening and if they’re not happy we can reschedule. Usually they just accept what I feel is okay for the patients”(S).

“The GPs don’t see them at all unless there is something that I specifically want them to see them about”(Q).

However, although nurses can and do have a say in day to day nursing practice, there has been another development in primary care, that of the introduction of practice managers. Practice managers have power when it comes to allocating appointment times and are influenced by the General Medical Services (GMS) contract. High on the agenda of the GMS contract is chronic disease management so it is usually given *“protected time”*(A).

Emotional and social aspects may be important to weight management it is crucial that individuals be given time within the consultation to address such issues. Most chronic disease appointments were allocated between 15 and 30 minutes. Initially at least, the increase in the length of appointments combined with the fact that nurses have increased their hours of work gave the impression of providing more time for direct patient care. However, this extra time appeared to be taken up with documenting the requirements for the GMS contract or local enhanced services needs, both of which are driven by funding. *“We’ve got half an hour for CHD and stroke and we need that to fill out this enormous template of three screens”*(A). This had a detrimental effect on consultations

as it *“doesn’t allow us much time to make eye contact with the patient far less listen to their worries”*(A).

It is hardly surprising then that nurses view the contract as being a *“number crunching game”*(S) where *“points are prizes”*(A) and instead of being the ‘doctor’s handmaiden’ perhaps feel that they are the manager’s handmaiden as they are seen as being *“the people that collect the brownie points”*(J). A further illustration of the influence of the GMS contract was where there were difficulties incorporating podiatry care into diabetic management to gain GMS points. A solution was found by *“reconfiguring our clinic to try and cover all the contract points”*(A). Although weight management was mentioned in the National Frameworks for Coronary Heart Disease and Diabetes, it did not earn ‘brownie points’ when the study was undertaken so nurses had difficulty allocating time for it. Yet, nurses were expected to provide within the allotted appointment time a weight management service to those who needed it. How they viewed this remit differed, ranging from *“Yes, it’s coming into the equation there”*(V) to being *“part and parcel of a lot of the chronic diseases”*(A). When working within these constraints some found ways of trying to give more time through negotiation or manipulation of the system.

6.5.2 Negotiation

For weight management it was sometimes possible to negotiate an earlier appointment *“if I’m keen to bring these people back early then I can justify it to the manager”*(E).

Another nurse negotiated extra time for the duration of the study *“I had agreed with the practice that I could spend a wee bit more time with these people than I would normally*

do”(A) while another was unable to achieve extra time and explained the effect she thought it had on outcomes.

“It would have been nice to have maybe 20mins per patient but again with the GP contract and the number crunching game, I was only allowed to do this if it didn’t interrupt the rest of the work....On hindsight a wee bit longer probably, maybe the other two who didn’t come back maybe if I’d had a bit more time with them it could have been more beneficial to the patient”(S).

Sometimes more subtle ways of creating time were found. One nurse explained how she used the appointment to allow time to address weight management issues when screening a husband and wife who were new to the practice. *“He was pretty straight forward. Sometimes you can whiz through them if they are straight forward, no health problems and everything’s normal.... So I probably managed to do that with him and then spend longer on her”(B).* Others nurses simply ran late.

6.5.3 Bending the rules

In one practice there was a protocol for seeing people for weight management on a weekly, two weekly and then monthly basis.

“It’s officially a set pattern but I consider everyone on an individual basis and if I feel that it’s really a benefit to see somebody at three weeks or two weeks rather than a month for additional support, as long as I know it’s going to be short term or have an idea it’s going to be short term then I’m prepared to...I’ve got two who are coming back in a month’s time, or who plan to come back in a month’s time, I’ll bring them in slightly earlier but I’ll put them both in for a 15

minute appointment which is not ideal but I know that they are going to be able to touch base at that point. So I do bend the rules”(E).

This demonstrated the difficulties of time when taking individual needs into account in an effort to deliver person-centred care. Time constraints in general were a problem for all the nurses but some did not mention trying to manipulate the system to benefit individuals in their care. It was within this context that PNs recruited individuals for this study.

6.6 Barriers to weight management

The theme of barriers also emerged as influencing the implementation of the holistic approach to weight management. The categories within the theme of barriers are shown in **Figure 6.8**

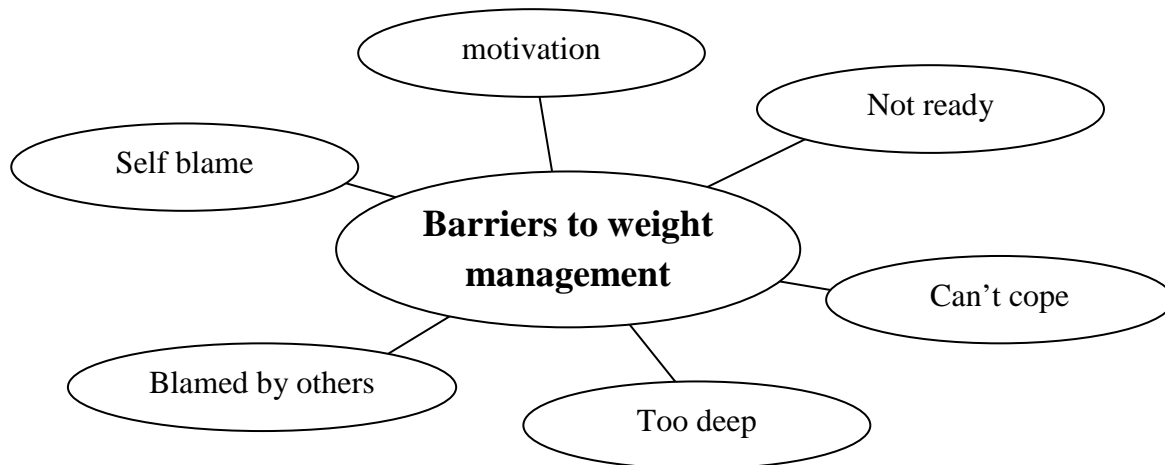


Figure 6.8*The categories of motivation, not ready, can't cope, too deep, blamed by others and self blame in the theme of barriers to weight management*

From analysis of the qualitative data provided by individuals, a number of barriers emerged. The utility of using the participatory, holistic approach was reflected in the variety of barriers identified. Each type of barrier, defined in terms used by the

participants in the study, is discussed under the categories, of motivation, not ready, can't cope, too deep, blame by others and self-blame. However, it also emerged that when PNs worked in partnership using the materials with individuals, barriers were sometimes reduced.

6.6.1 Motivation.

One PN described how, in her previous approach to weight management, she was *“struggling with trying to get people motivated. They just weren't – it was a case of I would advise them to go to weight watchers because they just weren't listening to anything I was saying”*(T). It seems that advice giving to individuals caused frustration for the nurse and led to poor outcomes for individuals.

Nurse S elucidated how using the holistic approach differed. *“They've never seen anything like this before and never been asked what they thought before. They have been told rather than being part of a partnership”*(S). It seems that Peplau's partnership approach is relevant.

Raising the subject of weight is not always easy. *“If you suggest they are overweight you see the barriers going up straight away with some patients”*(C3). One of the individuals highlighted this in her weight management map when she wrote *“I hate being told I need to lose weight”*(J02). Several nurses thought it easier for them, rather than the doctor, to raise the subject of weight because of the relevance to their area of work in chronic disease management. One explained how she would broach the subject:

“I can say, you know, you’re knees will be a lot better if you were a little bit lighter and we could do something about that. Would you like to? I give them the option, I don’t say ‘You’re too fat, you need to lose weight!’” I say, you know, if you’d like help to move your weight down, I use sort of words like that, then I’m here and that’s part of what I do”(J).

It appeared that this approach was more empathic and in line with a person centred approach. Another stumbling block pointed out by Nurse E was:

“if people are quite comfortable with the weight themselves. I think that’s probably where I find sometimes a little bit difficult obviously trying to educate and explain. It’s quite easy to upset some people if they feel, you know, that they don’t have a problem or that there isn’t any need to lose weight....My confidence has definitely grown with that and you can judge how to approach it”(E).

The manner in which individuals are approached does seem to be important and barriers can be broken down as nurse J explained:

“I do get the odd barrier but even some of those eventually, because often they keep coming back to me because they are asthmatic or something I have the opportunity to slowly break these barriers down with them. They get to know me as a person and that I’m not being judgemental. I’m just thinking about their well-being then they’re more likely to open up if you’re not judgemental”(J).

Individual H04 confirmed the importance of not being judgemental by writing *“My nurse practitioner is a good mentor without judging me”*.

Part of the art of good communication, a key area for both Peplau and RLT, is knowing when the individual's choice, which should always be respected, is to be accepted at face value. Repeated failed experiences may have dented confidence thereby creating a barrier to trying a new approach.

“One of the ladies in particular is a lady who is 20 stone, you know and has been coming to me since, oh I think, particularly since I was here, over just 15 years, and been to the dietitian, been through all sorts of things and I think that she just felt that this isn't going to make any difference to me either. That was kinda reading between the lines but she never said that”(D).

Sometimes confidence building and conveying a sense of support may be required before changes can be attempted.

Nurse R felt that the materials were helpful in that respect:

“I think some of the comments on the pages like, you know, small permanent changes are the key to long term success. It had an encouraging aspect to it...The hands on the front.... There's someone shaking my hand or reaching out a hand to help me and then the wee circle and things like, these wee cycles of change going on there, but that's me personally, you know. I don't know how patients would identify with that”(R).

It would appear that involving individuals in partnership rather than simply giving advice may improve outcomes. Furthermore, barriers may be broken down when PNs build a good rapport with individuals and are non judgemental in their approach.

6.6.2 *Not ready*

Most nurses felt that a good number of the 29 individuals who refused to take part in the study were not motivated to address their weight at that time. Nurse R explored the possibility of other reasons before coming to that conclusion.

“They looked at the books and things like that and really, basically what it was, ‘I’m not really ready. I mean, that was the main reason. They didn’t say ‘Oh, that’s too complicated’. They didn’t give me anything like that. I said or is it that you don’t want to put things on paper? Do you think this is going to be a painful experience for you having to think about these things? Maybe what past experiences have been. No, none of them came up with that. They just said ‘Oh, I can’t be bothered just now. I just took that as ‘I’m not ready’”.(R).

Nurse S who had three refusals spoke of lack of time in addition to not being ready. *“It was the time factor. They didn’t want to be, you know, having to come in and they didn’t feel ready. They didn’t feel this was the right time”*(S).

Other individuals agreed to take part in the study but were externally motivated. *“Oh, I don’t mind helping somebody with research. That’s good if it will help some other, I don’t mind that”*(S02). This was confirmed by Nurse R who had one individual who *“liked the idea that this was going to be researched and this was a good reason for partaking in something like this. It might help others. Not her”*. These externally

motivated individuals did less well than others in weight management thereby demonstrating the importance of helping individuals focus more on internal motivators.

The materials helped some to identify internal motivators such as looking at their beliefs about weight management as one individual wrote, *“It’s up to me to do something about it. I have to do it for me and no-one else”*(J01). It seemed as if this individual was ready to take control and have an active role in the partnership.

6.6.3 Can’t cope

Sometimes, individuals felt that they could not cope with making changes. *“The other lady, her home circumstances when she looked at it, at home in greater detail, I think she got a bit frightened by the weight management map. She said ‘Oh, I can’t cope with that’”*(F). Nurse F clarified that it wasn’t the layout of the map but actually looking at it and starting to think what it meant to her that she couldn’t cope with. Perhaps this lady felt a sense of hopelessness created by the map over her circumstances indicating a stable attribution and that the effort to make changes was too difficult and therefore she was unlikely to succeed (Weiner, 1985).

One individual’s reaction to the booklet reported by nurse V was: *“don’t like that, it tells me things I don’t want to know”*(V). Although this individual, like the previous one, did not participate in the study he continued to attend the nurse who said *“Funnily enough, there are issues, most of the self image issues have come back into play just recently for different reasons and I think he is really going to knuckle down and make a big effort now”*(V). Although the booklet had raised issues he did not want to face at the time, perhaps at a later date he felt more ready to address them with the help of his nurse.

Another individual, who did not complete the study, could not cope for different reasons as Nurse R explained:

“She had a past experience of a son who committed suicide a year and a half ago.... She just said to me yesterday, I don’t think I was really ready. Probably she was still grieving, you know, but at the time when I told her about it, she said ‘I really must lose weight because this lady had got rheumatoid plus diabetes and she’s really unhappy with the weight that she had gained’”(R).

The nurse’s reaction seemed to indicate that she saw this lady as not being to blame and therefore reacted with empathy towards her (Weiner 2006).

6.6.4 Too deep

Nurse D, who did not manage to recruit anyone, thought the materials were off-putting for some individuals. *“They just felt that they didn’t want to sort of go, I suppose, too deep into the sort of psychological side”(D).* There was the possibility that she did not feel comfortable in dealing with any issues that might arise. On the other hand it may have been that some individuals felt the materials to be intrusive. One such example was an individual who, in spite of having a good experience when using the ‘holistic’ approach, felt that the weight management map was *“too personal”* (A03) as it revealed that he had depression. He did have a depressive episode during the study resulting in a weight gain of 6kg before he lost it again. However, most nurses who did recruit individuals had a different point of view.

“For some reason, just working through the booklet and I mean, it’s very good it doesn’t dig too deeply. People don’t have to say what’s happening but they can do...it’s not too diggy, not too psychology”(J).

Nurse R who had many years experience in primary care provided further evidence that individuals had the choice to withhold information. This nurse recognised that for one individual *“there were a lot of things bubbling beneath the surface but she wasn’t willing to come up with it”(R)*. It appears that individuals have the option of how much to reveal. In addition to having this option it seemed that there was no pressure to complete all sections of the weight management map as two individuals omitted one section while completing all other sections. The materials appeared to be beneficial in aiding nurses and individuals to work together in partnership. However, it can be more difficult at times to maintain a good rapport with individuals.

6.6.5 Blamed by others

Nurse A recognised how easy it was to convey the wrong messages. *“Your mood changes as much as anybody else’s. You might have a bad day and approach it the wrong way. You have to be aware of that and the body language”(A)*. The professional’s own views can also unintentionally be conveyed to the individual making them feel that they are being judged. *“They say they’re good and then they haven’t lost weight”(T)*. Values, beliefs, attitudes and prejudices may influence what impression is given (Roper et al. 2000) therefore it would seem that communication skills are important.

The following experience of S02 demonstrated how sensitive individuals can be, indicating the fundamental importance of adopting good communication skills. In spite

of a good relationship with her nurse and making progress with weight management, she had a bad experience with another health professional. She had been prescribed a weight loss drug (Xenical) but when her weight became static was refused another prescription with the following result:

“Felt like I was being punished for not losing weight! (I had PMT). This reinforced my feelings of being a ‘failure’. I’ve since regained the weight I’d lost”(S02). It may have been that the protocol for the weight loss drug was being followed but the individual’s understanding was compromised by poor communication.

This demonstrates the importance of having an awareness of how professional interaction affects individuals. It would seem that individuals do feel that they are being judged even by their own families like J01 who felt *“My Mum always puts me down”*.

These reactions could be explained by attribution theory where individuals are viewed as having control over their weight and by not making an effort elicit anger from others who then blame them. It seems too that if lack of effort is considered to be ongoing more anger is engendered (Weiner 2006)

6.6.6 Self-blame

It is not only professionals and family members who were thought to be judgemental but the obese individuals tended to judge themselves harshly as Q01 recognised: *“I am very self critical”*. Negative feelings, including anger and guilt, were prevalent among the individuals and often directed towards themselves like G01 who was *“angry with myself”* and R01 who was *“disgusted with lack of self control”*. These attitudes are

therefore not only common in society but among the obese themselves. Again, this reflects attribution theory.

“Some people if I gave it to some of my regular patients/clients you know, they would be ‘Oh, what’s this all about?’. You know, I’m here for help to lose weight..... I kind of feel that the type of patients that were coming to me were wanting more dietary advice and support. A lot of them maybe know what they should and should not be eating but if they know they are seeing me on a regular basis, for they’re wanting to please me as well as themselves”(C).

Nurse Q shared her thoughts on how negative feelings and trying to please the professional can be detrimental. Her awareness encouraged her to provide extra support.

“I think at times there’s a bit of embarrassment and shame that they don’t lose weight. In fact, I think they are pleasing me or the person who is doing it and it’s not really that. Sometimes, people do the same if they go to a weight management class. I’m as guilty about it myself, I’ve been to them all. And you feel guilty if you put on a pound or two because you weigh yourself before you go and think ‘oh dear, I don’t want to go because of that and then you don’t turn up for the next appointment because it’s got worse. Telephoning there is handy, which I did”(Q).

Nurse J shared her views on how the holistic approach was different from familiar approaches to obesity management.

“By the time they get to me they’ve been through all the slimming classes and they are very, very relieved to get away from calorie counting and treats and good and bad and, you know, all this kind of jargon that all these slimming classes are laced with. People coming feel guilty because they’ve eaten a chocolate biscuit, you know. I think actually, everybody I’ve approached about it or talked to have seemed almost relieved to think that there can be a different way. It’s not about restriction and doing without. It’s about actually just looking at your life right across the board and I think they seem to be quite relieved and sort of think, oh I’m not going through one of those kind of, you know, again where you’ve basically just got to eat what somebody tells you to eat”(J).

An individual expressed a similar view when she wrote *“The booklet has made me think about the ‘whole of me’ and all areas I need to sort out in my life. Thanks!”(R01)*

In conclusion, these barriers demonstrate the interplay between all aspects of the holistic approach to weight management.

In the following section each practice is viewed as a single unit comprising of PNs, the individuals they recruited and the context in which they interacted with each other. It builds on the data already presented. Greater insights were accessed through in-depth data analysis as the level of interactions between PNs and individuals deepened. The theme of partnership between PNs and individuals emerged as central to helping individuals make changes and is discussed in the following section.

6.7 Partnership

Partnership is viewed by Peplau as the essence of nursing (Pearson et al. 2005). It appears that when PNs worked in partnership with individuals they helped them come to a realisation of what they needed to do by identifying the problem areas of weight management through reflection. In turn, reflection helped individuals become self aware and empowered them to take responsibility for their weight management. The various themes linked to partnership are shown in **Figure 6.9** and subsequently addressed in the text below.

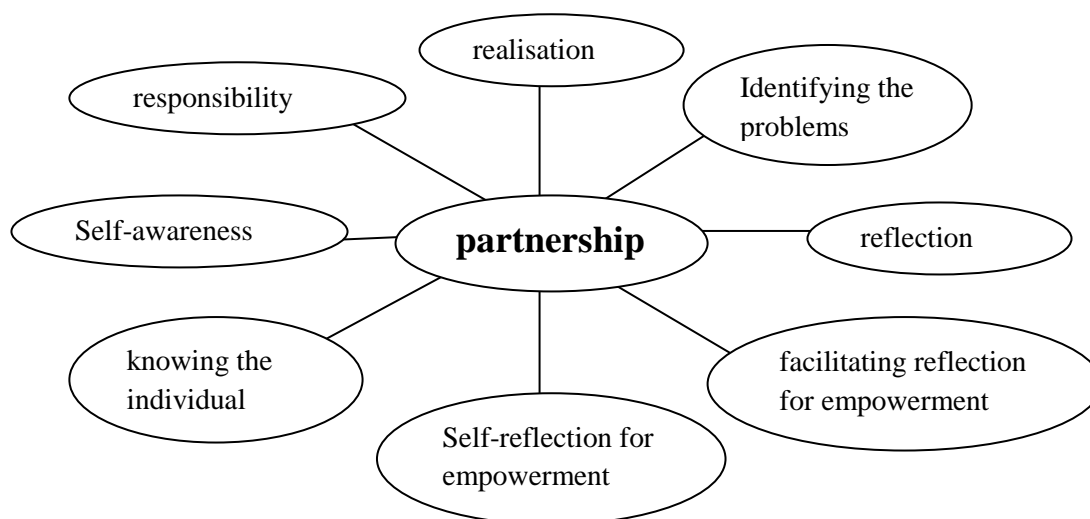


Figure 6.9 *The categories of realisation, identifying the problems, reflection, facilitating reflection for empowerment, self-reflection for empowerment, knowing the individual, self-awareness and responsibility in the theme of partnership.*

The following cases, although used to emphasise one theme also collate the various themes in keeping with the holistic approach.

6.7.1 Realisation

Most of the nurses who recruited individuals for the study appeared to already have an approach congruent with holism but lacked the tools to facilitate partnership working in weight management. One nurse explained her usual approach: *“I start off by saying, well, you help me and I’ll help you, kind of thing. This is a joint affair. How badly do you need it and want it and what for and what good things it will be for. Why do you really want it?”(Q)*. From this, it appears she was involving the individual by encouraging them to think about why they wanted to manage their weight better and what the benefits would be.

She gave an example of how this worked out in practice when using the study materials.

“He realises he has to do it for his heart. He’s not long having had heart problems. He realised he had to get fitter. He started going walking, he felt his trousers were looser. He felt better, he cut down on drink, not that he drank that much. In himself he felt better although he didn’t lose very much so I will be keeping an eye on him”(Q).

It would appear that the nurse and individual worked together with the materials. The outcome of the partnership seemed to help the individual realise that he had to lose weight to prevent worsening his heart condition. Furthermore having identified the problem, reflected upon what he needed to do, he took responsibility and felt empowered to implement the necessary actions. The PN also realised the importance of follow-up to encourage continued progress.

6.7.2 *Identifying the problems*

The ‘weight management map’, as seen in the following case study, not only aided the individual to identify the problem areas but helped the nurse to highlight other areas to target for treatment.

A 48yr old divorced female with a BMI 37.5, did in spite of living with her brother and three children, felt lonely and isolated. She had not addressed her weight problem before, although she identified that it started with problems in childhood and was also affected by family life. Her arthritis troubled her at times and she also suffered from hypertension, anxiety and depression

The ‘weight management map’ helped her to recognise that she was comfort eating, particularly in the evening, so she planned to eat only when hungry. She also planned to go out more. During the consultation, her nurse picked up from the ‘weight management map’ that there were sleep difficulties so this was also explored to find connections with various other factors. There was an improvement in sleep as shown in the following **Table 6.5** together with other changes

	Before	After
Regular activities	I do a lot of studying to try to enhance my career prospects	I read more
Eating and drinking	I often have take away meals	Porridge for breakfast Smaller portions
Mobility	Knees painful most of the time – worse in damp weather	Walk more
Feelings about myself	I am not confident I am very self critical	I accept things I can not change
Body dissatisfaction	I like nothing about my body	I don't like my body
Benefits of weight loss	I would feel better	I climb stairs more
Beliefs about weight management	My weight is all my fault	I am trying to reduce my weight
Social contacts	I have few friends outside of work	I do not see many people
Support	none	I do not have help from friends
Health problems	Worry a lot I do not sleep well – dog disturbs sleep Painful knees	I sleep better

Table 6.5 Weight management map for Q01

As the partnership between nurse and individual developed providing a vehicle for trust and openness it was agreed that stress counselling would be of benefit. Prior to referral to the counselling service, which was available within the practice, weight had been fairly static in spite of the other measures taken. Had stress not been tackled perhaps weight loss could not have been achieved and demonstrates, as the nurse recognised, the importance of trying “to look at the whole picture” as “Sometimes you have to look at

what it is that's causing them to be like that. Home circumstances or stress or lonely, not having friends to go out with even to do a little walking and exercise.....It's looking at the pattern not just the signs on the scales"(Q). This view was supported by the individual themselves as they found that the most helpful parts of the 'holistic approach' were "trying to assess why I am overweight" and "regular contact with nurse"(Q01).

The nurse was often seen as a source of support particularly when individuals perceived a lack of support and social contacts. In this context, six individuals in this study specifically identified the practice nurse as providing support and indicates the relevance of Peplau's idea of surrogacy.

6.7.3 Reflection

Nurse J felt that reflection helped people to be honest with themselves and spoke of how she approached it using the materials. *"I said to him, 'It's like looking at yourself in the mirror and saying well look this is the way it is. This is why it is and you know, it's up to me. What are you going to do about it?'"(J)*

However, not everyone agreed with encouraging individuals to reflect. One nurse felt it inappropriate. *"Reflections, sort of looking back, you know, I think a lot of people thought, well in my view, would maybe, know they are overweight and they know they've had hang-ups over the years but they don't need to be reminded about it."(C).*

Perhaps there was a reluctance to try and help individuals address these 'hang-ups' for fear that difficult issues be raised. Nurse R, on the other hand, appeared comfortable

about the possibility that issues other than purely physical problems may be identified in the holistic approach

“because it does open a few cans of worms, being able to refer in whatever different direction they need to go to and be ready for that.... I think it was intense but you get that all the time anyway. It doesn’t matter who walks through the door”(R).

She gave examples of how emotion can be associated with asthma and hypertension.

“General practice patients can come in with asthma but there’s a whole pile of other stuff because it’s been an emotional thing that’s triggered off their last asthma, therefore hyperventilation and so it goes on, you know. That’s not an unusual thing. Or they come in and the blood pressure’s a bit elevated and that and they’ve had a terrible time and this is what’s been going on”(R).

During her everyday practice, it appeared that Nurse R recognised the need to address emotional issues raised by individuals having reflected on their situation. Emotions are therefore, an important element of weight management. It also demonstrates a person centred approach as does the following example.

6.7.3.1 Facilitating reflection/empowerment

The importance of reflecting on how emotions and social issues are closely intertwined with physical health is demonstrated in the following case study. Furthermore, it

reveals that when the nurse and individual work in partnership to aid reflection it may result in empowering the individual to change the situation for the better.

A female (R01) who lived with her retired husband had a BMI 46.2 and lost 3kg overall. She suffered from diabetes, arthritis, gallstones and anxiety, had often tried to lose weight including attending the nurse and at one stage had been prescribed Xenical.

Due to her mobility problems, where even dressing and showering were difficult, she occupied her time with a variety of sedentary pastimes. As a result, managing her weight was very difficult for her.

The benefits she hoped to gain with weight loss were better mobility and to feel better about herself. The key areas she identified for change were her eating habits and self control. The nurse and researcher saw the individual together in an atmosphere of trust and respect. This may have helped her to reveal during the consultation that, although she had written that her husband gave her good support, it was not always appropriate support. She felt unable to change the situation resulting in an increase in her levels of anxiety. The main focus of the consultation was therefore to empower her to find ways of reducing her anxiety levels to facilitate change.

She had been a singer and loved music but her husband watched a lot of television with the result that she no longer felt able to listen to music although it was important to her and helped her relax. She talked it through and then felt empowered to make plans to achieve change through negotiation with her husband.

As the nurse commented in the interview at the end of the study:

“it’s actually given her courage and strength to talk about her relationship within her household. That has opened quite a few doors for her and it’s made her kind of manage things a wee bit better at home as she was becoming very resentful and things about the home situation. It was making her think a bit more about that and how she could maybe have coping skills about trying to detach from the situations that make her eat more and stuff like that”(R).

The nurse’s interpretation that coping skills were developed seemed to be borne out in the action map. The action map also illustrated how self-reflection was facilitated leading to empowerment of the individual.

6.7.3.2 Self-reflection/empowerment

R01 had lost 5kg when other influences came into play as can be seen in the following items from one of the action maps (**Table 6.6**)

Identified area	Action
Mobility	Exercises in bed increased
Pastimes	Exercises before needlework
Activity	Hoovering every day Moving around more
Eating and drinking habits	Smaller portions of food Drinking lots of water
Support	Negotiate change (smaller plate)
Social	Have had visitors on and off for 3wks not helpful with diet
Feelings	relaxation Music I’m enjoying

Table 6.6 Action Map for R01

In the action map R01 identified that over a three week period there had been many visitors with the result that her eating pattern was different and she had gained 6kg. Her pain levels also increased at that time. Realisation of the influences of social and physical issues on her eating pattern may have helped her with the aid of the nurse to develop better ways of managing these difficult times. This would seem to be the case as, at a later date, when again many visitors and an increase in pain occurred, there was a much smaller weight gain of 0.6kg. At that time her joint pain was so severe that she required a steroid injection.

It would appear then that completing the booklet was “*very helpful, wish I had been 20 yrs younger though!*” and in combination with regular, empathic contact with her “*wonderful nurse*” had helped her reflect on the influences on how she managed her weight and was empowered to make changes.

6.7.4 Knowing the individual

Nurses talked about knowing their patients on different levels. There was a superficial level when trying to accommodate appointments “*once you get to know the patients, you know when they like to come early in the morning and get on with things*”(T). Then there was a more personal level where “*you get to know your patients and quite often they have a weight problem. It’s quite a, you know, if you suggest they are overweight, you see the barriers going up straight away with some patients*”(C). The final level of ‘knowing’ was much deeper and achieved when a trusting relationship had been established. “*I got to know her a bit better. Yes, she opened up to me in the end and at the finish of this approach with her*”(Q).

Using the materials appeared to help another nurse to get to know one individual on a deeper level and resulted in him being able to open up to her. At first he was unsure of the materials but the uncertainty was negated through working in partnership with the nurse and his wife.

“Even the chap who thought ‘oh this is going to be too much, all these pages and all this bother, in fact, as I was showing him the booklet, he thought ‘och’ but when I actually worked through each page with him you could see he thought ‘Yeah’, but he still wanted his wife to read it to fully understand it.... He came back very interested. She thought it was great. I think they will use it quite well” (J)

The final outcome is unknown as he had to be excluded from the final analysis, due to the time restrictions of data collection but this approach appeared to help him to open up.

“The guy I actually did it with, he was just about in tears, you know, he was actually, because I think he realised, I can’t remember if I told you. He was the chap that his wife had written in a little bit beneath the reasons why - the three things they wanted to change. First of all she’d written in his weight gain had accelerated since his brother died very suddenly four years ago and he hadn’t spoken to him for three years so that was a major trigger” (J).

This suggests the possible utility of the booklet in helping individuals identify issues of which they had previously been unaware. It appears that completing the weight management map raised bereavement issues for the man who had not previously

realised the connection between his brother's death and his own weight gain. However, it could be that this connection may not have been made without the aid of his wife. Whether this indicates a gender difference is an issue for debate. Nonetheless, identification of the problem meant that he could then make appropriate plans to deal with the bereavement issues thus subsequently enabling him to lose weight. It also demonstrates the value of looking at the whole person as unexpected triggers can emerge.

6.7.5 Self-awareness

Nurse A agreed that individuals were not always aware of what influenced their ability to manage their weight and that using the booklet in the partnership was helpful. *"I think it promotes discussion when you're looking at all these other areas and the patient may be unaware that these areas impact on their eating habits so it was definitely relevant"*(A). This was confirmed by one of the individuals she recruited who felt that the most helpful part of the approach was being *"helped to identify with nurse changes I needed to make"*. The result was that he had *"stopped eating rubbish"* and *"continue(d) to exercise"*(A01).

Even if individuals became self-aware they still required support. *"Support from nurse"*(R02) was identified by one individual who made changes such as *"Not buying certain foods (biscuits,cakes); tried to facilitate more hobby time; recognised stress/eating link"*(R02) as being important. It seems that taking a person centred holistic approach may be of benefit to individuals. An example of the outcome in failing to access support in spite of becoming self-aware is demonstrated in the following case study.

A 44yr old female (S04) with a BMI 30.2 appeared to have been helped to realise that she had to make changes. Unfortunately, when returning for a follow-up appointment her usual nurse was on holiday. She did not feel able to discuss her weight management with the other nurse, probably because she had not built up a trusting relationship with her. In fact, she did not want the nurse to see the booklet. This meant that while the most helpful part of the 'holistic approach' for this individual was that *"It made me admit I have problems with my weight and how I manage it"*(S04) her unwillingness to share these insights with the other nurse meant that she could not support her in an appropriate way. The working partnership was diminished and the individual did not return for some months resulting in a 4 kg weight gain. It would therefore appear that the booklet, the nurse and the individual may each have a crucial part to play in weight management once mutual trust has been established.

6.7.6 Responsibility

Working in partnership with PNs to take responsibility for their own health may not be easy for some individuals. Previous consultations with health professionals may have taken the 'passive patient' approach, which tends to encourage dependency but individuals in today's health service climate are encouraged to take some responsibility for their own health. Both nurses and individuals sometimes found this shift of emphasis difficult. *"People come expecting you to tell them what to do"*(W). but this may not produce results according to nurse T. *"I know for a fact that if the doctors tell them to lose weight it never works. It just never works because it is not coming from them"*(T). However, even by taking a different approach and inviting individuals to participate in their care may not work either. Nurse V highlighted that people *"expected me to do more of an instant fix rather than sending them away to think about*

this, that and the next thing”(V). They were unwilling to take responsibility by “doing some homework and I think people weren’t prepared to put the effort into it as well as not wanting to hear what the results were saying”(V). The lack of effort as identified in attribution theory and associated poor outcomes appears to be endorsed by the individuals who wrote that he “found that all the help in the world won’t work if you yourself are not dedicated to making the changes”(S01).

It does seem that the holistic approach did encourage individuals to be less dependent on health professionals and take some responsibility for themselves.

“I think it made the patients take equal responsibility which is quite important here because we do have a population that’s, they’re quite dependent on what the medical profession say and they’ll do but primarily they don’t seem to take on the responsibility for that. They think it’s okay just to turn up at the surgery and, oh yeah, well I didn’t manage that or you know because”(R).

She specified how the individual’s booklet gave an opportunity to challenge people.

“I felt that working with the paper exercises of it, you can say to the patients, well you’ve put this down. How well have you got on with that or has there been a problem with that or is there a different way of managing that or have you maybe tried this”(R).

Therefore, it appears that writing things in the booklets assisted not only the identification of problem areas but also in assessing progress for both individuals and

PNs. It may have helped individuals take responsibility for making changes but also challenge them if no changes had been made.

Several individuals agreed with this. For example, A03 who found the most helpful part was to *“put ideas/thoughts on to paper”*(A03) or as S01 put it *“having things written in black and white”*. It also helped them to focus on areas for change. *“I knew most of the areas I needed to think about already, but it was a useful tool to reinforce them and make me focus on my weak areas”*(S02). As a result it helped them to take responsibility for making these changes. *“Took control of what I ate and drank. Can’t blame anyone else if I go wrong”*(S01).

However, Q03 pointed out that, *“The individual needs to want to lose weight and although the map helps to clarify reasons, the individual may need more help than that.”* One individual who found the weight management map not that easy to complete suggested that the nurse played a vital role in that situation. *“Needed time with nurse to clarify and make it clear”* although she commented that it was a *“really good idea”*(R02).

Although the weight management map appeared to be an important component for clarifying problem areas, the working partnership between PN and individual would also seem to be a vital aspect in providing further clarification before changes can be implemented.

Having examined the overall picture of how PNs and individuals work together in partnership the following section provides a more in-depth look at two specific practices.

6.8 Practice comparison in context

Two practices were selected on the basis of weight outcome for more in-depth examination. Three of the five individuals who gained weight over the duration of the study came from the same practice. Therefore, this practice (G) was selected for deeper exploration along with practice (B) where individuals lost most weight.

These two practices were set in rural locations, each having two GPs and a single practice nurse. For reasons of confidentiality the practices were given the codes of B and G. The two nurses shared a lot of similar attributes as shown in **Table 6.7**.

Nurse	B	G
Age group in years	40-49	40-49
Years qualified	20	21
Years in primary care	11	3
Hours of work	17	18
Areas of work	Diabetes, CHD, hypertension, Cervical cytology, Asthma, COPD, Weight management, Travel health, Phlebotomy	Diabetes, CHD, hypertension, Asthma, Weight management, Travel health, Phlebotomy
Diplomas	Diabetes, cervical cytology, Asthma, COPD	Diabetes, asthma
Comfort at raising the subject of weight	10	8
Confidence in helping people manage their weight	7	8
Obesity training	None	None
Recruits	2	6
Drop outs	0	4

Table 6.7 *Table of background information for nurses B and G.*

Note: 1 individual in practice G developed lung carcinoma after recruitment and died.

When it came to select individuals to take part in the study both nurses, in common with all the other nurses, targeted those who had previously been attending for weight management. In spite of commonalities between the two nurses, apparent differences in their approach to weight management began to emerge. Practice G, where individuals had weight gain, is the first to be addressed.

6.8.1 Practice G

Nurse G was one of the nurses with least experience of primary care nursing but one of the best recruiters for the study in spite of having only one month to do so. It appeared that in this practice, as in others, there was an expectation that the nurse would take on the role of dealing with weight management as it was *“something that seems to fall on to the practice nurses and the GPs are a bit bad at sending the people through - to go and see the nurse about losing weight”*(G). Although she initially indicated that she felt comfortable and confident about taking on this role (see **Table 6.7**), during the interview this was less evident.

“Certainly since I came into post they’ve used me. I mean they did sort of discuss and I said yes, I was happy to see people but never felt I was really skilled at it. I’ve certainly had no training. It’s a bit adhoc and I’ve managed to get leaflets from health promotion and various reps and things which we’ve sort of gone through, so nothing terribly structured”(G).

Although nurse G undertook weight management as requested by the doctors she was uncertain about how to go about it. In addition, she did not appear to have a great deal of control over the appointment system. All appointments were 10-15 minutes with no

variation for the different chronic diseases. She indicated that she would have liked more time with individuals for the study.

“I always seemed to be a bit pushed for time with this and I think it would have been nice to have longer, to have half an hour or something with them....I can get them to come in for double appointments but often if I haven’t made the appointment the girls don’t know to do that or the patient doesn’t ask so it doesn’t happen. It’s just a fault of the system”(G).

The ‘knock on’ effect was that while seeing the need for longer appointments not being able to arrange them so that she could “ *try and talk through*”(G) with individuals meant it may have been difficult for her to develop any in-depth relationship. This, however, did not appear to be the only impact on nurse-patient relationships.

There seemed to be a lack of trust as she was sceptical about individuals telling the truth because she

“went over what they’d changed, what the progress was but equally they seemed to be doing all these things and they identified the actions they’d changed, their progress seemed to be good and yet they just weren’t losing weight. So you begin to wonder were they just telling you a piece of, you do, you know.”(G).

The lack of trust in a relationship prevents people from being more open and honest as they may feel they are being judged.

If this is the case it may explain why individuals dropped out of the study in this practice. Nurse G saw two reasons for this.

“Some of them are just poor attenders, they’re working, they can’t fit their appointment into our times. The times aren’t always that great because I don’t go after 3 o’clock. It’s hard for the workforce to come. I equally think they knew they weren’t losing weight and they didn’t want to come back. ...they probably feel guilty or they’ve let you down, you know, they’ve failed. Maybe you’ve put all this work in and they’re not doing their bit”(G).

The idea of patients not playing the game was emphasised when she talked about recruitment. *“I’d no difficulty recruiting them. They all said ‘Oh, yeah’. Like I probably could have had more but the difficulty was sort of hanging on to them and getting them to tow the line”(G).* It appears that it was difficult for individuals to maintain motivation even for regular attendance.

Nurse G was good at data collection but appeared to view the study in a mechanistic way as she talked of following the protocol step by step and completing the paper work. When she mentioned the benefit individuals gained from completing the booklet ‘My Personal Approach to Weight Management’ and how it made them think, her thoughts focused more on obesity related diseases.

“It really made them think about why they’d got to that stage and why they, let me see, they have to think back to when their weight problems started and identify their own health problems and things. That was really quite a good

exercise I think, for most people and what previous approaches they'd tried and, as I say, a lot of them had tried lots of them"(G).

However, since she was one of the last nurses to come into the study there may have been an issue about the individuals she recruited as she recognised *"It's not for people going for the quick fix which may be some of these people"*(G) or they may simply not have been ready to address their weight problems. When asked about any issues that individuals raised when using this approach she replied, *"Nothing really that I wouldn't have expected"*(G). As can be seen in the following case studies using the holistic approach did not aid the development of a partnership with individuals.

When one 34 yr old female (G01) with a BMI of 31.6 returned her 'weight management map' she had written *"I have cravings for food.....I get angry with myself and can feel guilty after I have eaten lots"* indicating the possibility that she was a binge eater. This was not explored, probably because Nurse G, not surprisingly, would be unaware of the possible link. The individual also kept cancelling appointments thereby providing no opportunity for their professional partnership to develop. Had the relationship developed it may have provided a safe environment in which the individual could reveal more or allow clarification of what she meant. Nevertheless, as will be seen later, Nurse G did not see the depth of this approach as being very relevant for the individuals she had recruited.

Even for those who attended regularly, like the 61 year old mother (G04) of the previous individual (G01), the outcome was weight gain. During her time in the study she changed from Class I to Class II obesity. Her weight appeared to be influenced by socio-cultural issues and demonstrates that including social issues are pertinent.

The family were very sociable and lived in a farming community. Nurse G gave an example of the difficulties of this social culture. Kittens born on the farm were given to friends. Since there was no charge, chocolates were given as a ‘thank you’ putting pressure on the mother to eat them. Nurse G seemed unsure as to how to help the mother deal with these situations highlighting the need for further education in addressing cultural beliefs to aid individuals to reflect and develop better coping skills.

The only other individual to attend regularly was a 75year old with multiple co-morbidities (G05). The three key areas she wanted to work on were

- I would like to sleep better
- Have more confidence in solving my weight
- I would like to be healthier

In spite of this all her action maps although very specific were entirely food focused. In fact, all the ‘action maps’ returned from individuals in this practice were food orientated with occasionally a brief mention of activity as seen in the following **Table 6.8**

ID	Action 1	Action 2	Action 3
G01	Eat more fruit and exercise work out to try and lose stomach	Replace chocolate biscuit with plain biscuit Stop eating between meals esp crisps	Make time for walks regular especially after meals
G04	Trying to cut out between meals	Eating strawberries without cream	Having new potatoes without butter
G05	Have 1 digestive biscuit instead of 2 at night with ovaltine	Have 1 crackerbread with morning tea instead of 2	Really try to avoid salted peanuts as a snack. Try fruit instead

Table 6.8 *Action maps for G01, G02 and G03.*

Since the holistic approach is different from the traditional ones in use, the expectations of both nurse and individual may have been that food would be the focus of the goals. This is a feasible argument since Nurse G had acquired dietary knowledge and the individuals had *“tried everything before... They had all been dieting before”*(G). In addition, the individuals who returned the questionnaires indicated their satisfaction about their experience of using this approach. They also indicated that they had made changes. One individual wrote that *“knowing what to eat”* and *“visiting the nurse to weigh you”* (G04) was most helpful. The least helpful part for another individual was *“actually making myself do it. Will power was needed”*(G01). These comments seemed to confirm that consultations were in line with traditional approaches.

It would appear, therefore, that Nurse G may not have entirely understood this approach. Although individual needs were acknowledged it appeared that addressing these needs in practice was difficult for Nurse G. Therefore, whether this approach was unsuitable for these individuals is debatable. It is more likely that the convergence of several factors influenced outcomes. Some of these issues could possibly have been avoided had there been more coaching time. The researcher and nurse had only one hour on a one to one basis prior to implementation of the study in this practice. While Nurse G acknowledged the need to improve her knowledge of obesity management *“I still feel I could do with maybe some training or something in that aspect of things.”* she did not access the available continued support. Neither the opportunity for the researcher and Nurse G to see an individual together nor the support offered by email and phone were taken up. The only opportunity for further learning was during visits by the researcher to the practice for the purposes of data collection. Unfortunately, these were limited in time due to nurse workload and frequency due to distance.

Nurse G's lesser experience in primary care; short recruitment time; limited appointments in both length of time and time of day; difficulties in developing a partnership and insufficient learning opportunities with the researcher may all have influenced outcomes. It is also possible that her limited education on weight management may be why she focused on food and tended to ignore a more holistic approach but this was not a finding in any of the other practices.

6.8.2 Practice B

Nurse B acted in an advisory role with the local health board in addition to working in the practice. Unlike Nurse G she had several months to recruit and recruited only two. The two individuals she targeted had tried many times to lose weight in the past, and in many ways, including hypnotherapy and counselling. Nurse B decided to recruit two individuals for the following reasons: *"They both had diabetes as well and both very overweight and both very unhappy as well. I thought they were the ones who to me were likely to be motivated to do something."* She felt extremely comfortable about raising the issue of weight and saw it as *"part and parcel of a lot of the chronic diseases as well, especially diabetes"*(B). For initiating the study she was able to allocate a 30 minute appointment as she had complete control over her appointment times and varied them according to the need of patients and communicated this to other members of the practice team.

"The receptionists have got a list out front that I've made up. How long things take, for example, the longest appointment would be someone who is coming for spirometry with reversibility. That's quite a long appointment. It can take 40 mins and it takes a bit of organisation as well. Other things like chronic disease reviews, they are 20 minutes, smears are 20 minutes. The shortest appointment

I have is a 10 minute appointment and that might be for blood pressure checks, blood samples”(B).

As well as having control over practice appointments, Nurse B, can decide on whether or not to refer individuals in her care. Part of the reason was that there was a “*real lack of dietetic input, timewise, manpower. There’s a severe shortage*”(B) but she also took into consideration whether or not it was advantageous to the individuals.

“I refer all the diabetic patients to the dietitian but sometimes the feedback from patients is not always positive. They’ve had to wait a long time on the appointment. They weren’t told anything they hadn’t been told already in practice and they’ve got to trail up the Infirmary to be seen as well.... I tend not to refer obese patients”(B).

She recognised that the holistic approach to weight management was different from traditional ones and explained what it was that encouraged her to explore it’s potential utility in practice.

“Well, I just thought it sounded really different, interesting and overall practice nurses are all desperate to find ways to deal with weight management because it’s such a problem. The sound of it, the holistic sound of it, sounded really interesting to me in making people look at themselves inside as well, you know. Not just a case of weighing them once a month, you know”(B).

However, on receiving the support materials for the holistic approach she expressed some initial reservations, although they soon subsided.

“I think, initially I was concerned at the sort of depth of it, I guess you would say. The reading involved, the amount of work. We all want an easy life. None of us want extra work, filling out forms and things if you think it’s not going to do any good. It really has made them look at themselves in a different way and try and address the real issues rather than just, you know. They were both fed up to the back teeth of diets and you know, just life was taken up with thinking about food. So this has made them look at different aspects of their lives” (B).

Her experience of using the holistic approach was quite different to that of Nurse G. The two individuals she recruited were friends and wanted to see the nurse together. While the approach was intended solely for use with each individual, the researcher did not want to impose restrictions as both nurse and the two individuals were keen to work on it together. After all, the idea was to test the utility of this approach in practice.

Nurse B’s willingness to accommodate their request indicated how her practice was flexible and person centred. The researcher was invited to share the first consultation during one of the outreach visits to the practice and this seemed to help her understanding of the approach and how to use it. *“I certainly found it helpful to have you there at the initial consultation to go through it because I didn’t feel confident in myself not being involved in it’s make up” (B).*

Following that initial consultation the researcher and Nurse B kept in touch by phone and email which provided the opportunity for both to learn from each other. In emails the problems of seeing two individuals simultaneously were discussed. In particular,

the fact that they had different problems and the consultation was focused more on one than the other. In a later email, Nurse B conveyed

“Interestingly B02 phoned me in the pm and said she was worried that B01 wasn’t getting a chance to open up. She asked if I would phone B01 and make sure she was happy for B02 to be there.”

They still wanted to come together but as subsequent visits became more in-depth a slight tension began to creep in. Nurse B was sensitive to this and took the opportunity when circumstances allowed, to separate the appointments. This permitted both individuals to gain more from the consultations without compromising their friendship.

“Certainly one of them was far more open about things after looking at the book. In fact, we’re considering even a referral to psychology for her. She’s thinking about that at the moment to try and address some of her issues that she has which go right back to childhood really. She has an adopted daughter and she worries about her weight and she’s worried that she’s not being a good role model. The booklet certainly has made her aware of her role as a mother and how she can be a good role model to this girl”(B).

Nurse B explained how the partnership had developed and benefited both of them. She spoke of knowing the individual on a deeper level and how this helped trust and openness to evolve thereby leading to better outcomes.

“I have been seeing her very regularly and she’s someone who I knew a little bit before but not very well. I feel we really have formed a very close relationship,

professional obviously and she feels comfortable. She always comes to the appointments whereas before my previous experience of her was that she was a bit of a non-attender which made me think she was burying her head basically and didn't want anybody telling her what she was doing wrong and you know, she didn't want to hear it really, I think before. She's someone who's been sent to me. She tends to be sent to me when she's not towing the line. She's someone who also has asthma and smokes. She used to use God knows how many ventolin inhalers in a month. We would try to address that. We tried to make a proper diagnosis. We tried to get her to use inhaled steroid and she wouldn't have it really. She wasn't interested but I think things in her own personal life changed as well. Her marriage broke up and she's on her own now with this girl and she's really had to come on has learned to drive. She had to sell the family home and she lives in a horrible flat in a horrible estate. Her husband had told her she would never do it so things have changed in her own personal life too. Maybe we were just lucky that it was the right time to approach her and she attended very regularly and was very happy to come to me and talk about all sorts of issues in her life. At the same time has managed to lose some weight so we are encouraged."

This demonstrates how the development of a real partnership can help people change. It also showed that Nurse B had insight into using a holistic approach. It seems that this approach encompasses both the art and science of nursing when sometimes *"You're seen more as a sounding board or a support rather than a sort of clinician, if you like"*(B). It is acknowledged that taking a holistic approach is not an easy option for either nurse or individual but the partnership can prove beneficial.

One morbidly obese, 49 year old female (B02) started the study with a weight of 113kg (BMI 48.9). She had enjoyed swimming in the past and decided that she would try it again. Due to mobility problems she found it difficult to get in and out of the pool so made arrangements for the use of a hoist. She had been several times when the hoist broke. Unfortunately, the attitude of the pool attendant made her feel that she was to blame. In the past this would have made her comfort eat but through completing and discussing the map with Nurse B she learned how to cope better with stressful situations. *“The map brought up feelings about myself and the way some people reacted to me. This was very difficult at times.” (B02)*

Learning new coping strategies takes time and sometimes the situations very stressful. Unfortunately, when her daughter was hospitalised and required emergency surgery she coped less well resulting in some weight gain. Nevertheless, overall she still lost 2 kg during her time in the study and was not disheartened. For someone with such complex problems this was a good start and she certainly valued the partnership built up with her nurse. *“My nurse is wonderful. There is no pressure, and I hope to continue until I reach a good weight. Thanks!” (B02)*

The following extracts from her booklet reflect how useful the weight management map may be in identifying areas for change and seeing what has been achieved. (**Table 6.9**)

Weight Management Map	Before	After
Regular activities	Dog walking Garden reading	Walking swimming stairs at work
Eating and drinking	Too many take-aways Meals are OK but too much snacking choc and biscuits	Less take aways Still snacking a bit
Mobility	Going upstairs is a problem Sore feet sometimes	Improved
Feelings about myself	Still tend to run myself down More confident than I used to be	Up and down but less
Body dissatisfaction	Everything!	Pleased that I'm feeling better but still hate my body
Benefits of weight loss	Health improvement Feel better about myself Clothes	Fitter Clothes Example to K (daughter)
Beliefs about weight management	Need to get organised properly More exercise Control fats and sugars	I'm sure I can do it if I can keep reminding myself
Social contacts	Limited outside work	Still same small circle of friends and sister
Support	Not a lot in family apart from my sister	Sister Nurse
Health problems	Diabetes Self-esteem	Diabetes

Table 6.9 Before and after weight management maps for B02.

Her 53 year old friend (B01) was taller and weighed 143 kg giving a BMI 51.3. Her problems were less complex but nevertheless difficult for her. Her husband had a long-

term illness and with the addition of other family commitments she had no time to herself. With encouragement she too looked at herself in a much more holistic way and decided to build in time during the day for herself and targeted three key areas for action.

- To walk better
- Not feel so guilty
- To have a hobby

These key areas reflect how different this approach is. Later she also went swimming with her friend but there was no ‘weight management map’ completed at the end of the study to document changes. Although she was less diligent about completing the booklet, perhaps recording it elsewhere as Nurse B explained when giving comments on the booklet

“I think it’s a good diary, if you like, of progress. It’s a handy size, although one of my patients did comment that she would have preferred a sheet that she could put up somewhere that she could refer to. She knew what it was and it would remind her. The book she tended to leave it lying about and then forget where it was”(B).

Confirmation was given by B01 when she wrote comments about the ‘Weight Management Map’. *“I would prefer a poster format that I can put on the kitchen wall so I don’t lose it and see it more often.”* An additional thought about ‘My Action Map’ was also expressed. *“A wipable one can be upgraded as you progress”(B01).*

These suggestions showed that she took ‘ownership’ of this approach and wanted to personalise it for her own particular needs and this may partly explain why she lost 7kg.

The two individuals who were recruited in this practice seemed to have been helped to take a much broader view of obesity management than those from practice G. Although, in common with some others, “*The initial thinking about it*” (B01) was important and another change had taken place in that it helped her to “*focus more on the successes (with rewards) rather than on failures*” (B01). She did not specify in the data what these rewards were but her friend aimed to reward herself with “*a few days away*”(B02). B02 also demonstrated that sometimes before any food or activity changes can take place other adjustments need priority. “*That feeling better about myself doesn’t need to be losing weight. Liking myself more for who I am.*”(B02). This starting point can then lead to “*making me more conscious that losing weight makes me feel better in myself*”(B02). Only once confidence is gained does weight management become beneficial and not cause such negative feelings.

The following is an example of an individual in one such practice. She (W03) had long term weight problems and a number of years previously had been referred to specialists for weight management without success. More recently, while taking part in this study, she had been prescribed Xenical and later Reductil, again without success. She, in common with another individual in the practice believed that “*diets have been proved not to work for me*”(W03). Ingrained beliefs such as these are very difficult to deal with. In spite of viewing the booklet as being good she did not find it at all easy to identify and decide on areas for action with the nurse. Her comment that “*overeating was never the problem*”(W03) might indicate that she felt as if she were being accused of overeating and therefore, her experience of using the approach was very poor.

However, at a later date, it may be that as the therapeutic relationship built up with the nurse she was helped to be more self-aware and honest with herself resulting in a loss of 3.5kg. Progress may have been hindered by a lack of support from other team members in practice.

Having examined in depth interactions between PNs and individuals on a one-to-one basis, the following sections look at how PNs view the holistic approach to weight management generally, including those PNs who were unable to recruit.

6.9 Filling the void in weight management

This section provides feedback from PNs on their general experience of using the holistic approach to weight management. An emergent theme from using the holistic approach was that it appeared to ‘fill a void’ in weight management although there were also limitations to its use as demonstrated in the following categories: time issues, fear of unknown, credibility of materials, changing practice, working in partnership, taking a holistic approach, not for everyone and future use, as shown in **Figure 6.10**

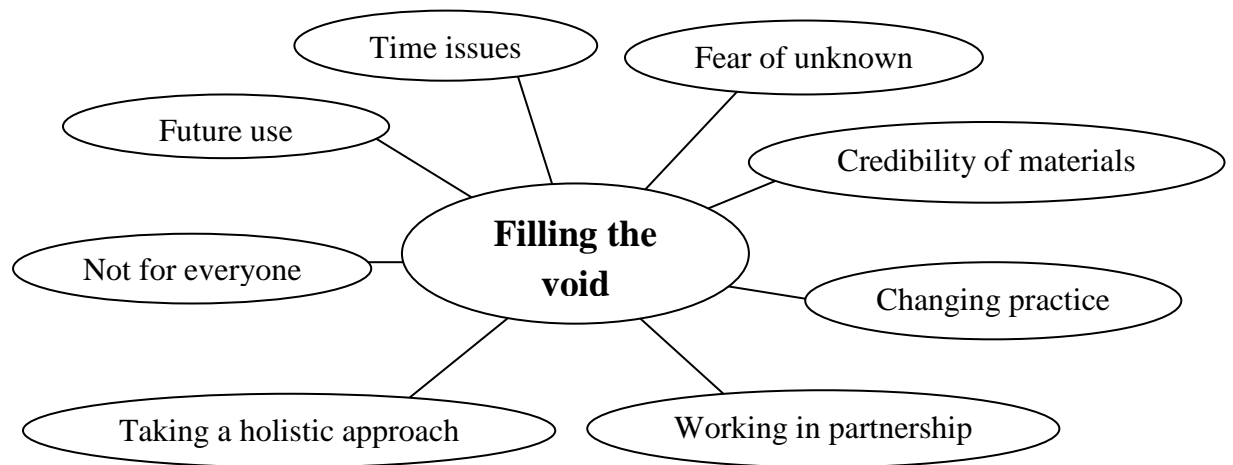


Figure 6.10 *The categories of time issues, fear of unknown, credibility of materials, changing practice, working in partnership, taking a holistic approach, not for everyone and future use in the theme of filling the void.*

6.9.1 Time issues

Time was a scarce commodity making implementation of this approach difficult for nurses especially as most of them had to incorporate it into their existing time schedules.

“My only problem is the time factor. Not just for my personal approach way. It’s like for anything that you have to motivate people and help them change their behaviour. You don’t have the facility or the time factor so this is all done in a 10 minute slot” (S).

However, for those who could spend longer with individuals it seems that the benefits outweigh the time required.

“I feel it’s probably quite time consuming BUT obviously the benefits are there if you are willing to put in the effort and the work and the time because it’s not a

quick 10 minute appointment. Then hopefully the benefit of that would encourage you to use it more”(B).

This approach was not intended as a quick fix but takes a long-term view. Even individuals who gave encouraging signs that they intended to make changes permanent realised that change took time as there were “*still areas I want to change but am taking it slowly*”(S01).

6.9.2. Fear of the unknown

Although PNs viewed the educational booklet ‘A holistic Approach to Weight Management’ as relevant, most of them found it initially daunting. In addition to the format of the booklet, part of the reason for the initial feelings may be due to the holistic approach to weight management being “*very different, completely different from anything I’d done before*”(G). One nurse suggested that the A4 size of the nurse booklet was forbidding as “*it looked like exam time*”(S) so perhaps an A5 size would have been better. Her initial reaction of “*Oh no, look at this writing*” soon subsided when she “*sat down with a cup of tea, and I enjoyed it, especially, as I say, the case studies. I can identify with that*”(S).

Another nurse reported similar reactions

“It’s the fear of the unknown as well, you know. We’ve never had this before. I thought, oh God, what have I got into here, you know....BUT when you actually take the time to sit down and read it, it all makes so much sense and the two patients that I did have involved in it said exactly the same”(B).

Rather than the materials being daunting it was carrying out the study that made one nurse hesitate before committing herself. *“When I saw that I thought ‘Yeah, that looks like a good idea and then I thought oh trying to get patients and trying to get them to follow it could be a hassle but then when I actually looked at it”*(J).

6.9.3 Credibility of the materials

Once the nurses had a look at the educational materials they became more enthusiastic. *“It sounded a super idea and its well laid out and you think, this is something I could really use, you know”* (F). For some there was too much depth in the nurse booklet but one nurse expounded her view on why this was required.

“I think there was a fair bit of depth there but I think obviously you needed to have some kind of evidence to back up what you were saying. You know, I mean you get a lot of stuff through the post or whatever and you think, yeah, that sounds great but where’s your evidence to back this up. But certainly there’s evidence there to back up what you were saying. I think that made it a bit more credible.”(K).

All the nurses liked the case studies. *“I love the case studies, I think that’s the way to go for nurses”*(S) for the following reason *“I think it’s when you’re working with patients all the time that it gives you something to relate to”* (K).

The patient booklet appealed to all the nurses who used it with patients.

“It appealed to me because its not a big huge thick book that I think patients would find daunting. I mean, if they saw pages and pages ‘oh, boring, before they even start. I felt it was quite a nice simple straight forward well laid out approach”(R).

Nurses therefore found the holistic approach a credible, relevant and practical alternative to traditional ways of dealing with obesity. There was interest too from GPs in one practice. *“It just happened to be mentioned in the coffee room so I jumped on the opportunity and showed the GP the info and stuff like that. She was really quite interested, you know”*(J). The interest appeared genuine as the materials were acquired by others. *“Two of the GPs have walked off with them”*(J).

6.9.4 Changing practice

The materials had an effect even when nurses were unable to recruit for the study. Some took on board the holistic message for their practice.

“The material did bring that home to me that I hadnae looked at it quite from, looked in more depth at it from a holistic, and that does take a bearing with your patients when you’re talking to them, asking them if there is any other things involved, and stresses and problems and what have you and taking that into account more so now”(V).

One nurse detailed the effect on her practice.

“I probably have made a lot of changes. Again, it boils down to this holistic approach. I think again I was very channelled in how I educated patients but now I think I can make them, you know, look at a much broader picture of their

life of what's going on in their life to sort of then obviously be able to focus on their sort of weight management. Although I haven't actually recruited anybody it's definitely helped"(E8).

Her enthusiasm extended to thinking about *"if there are going to be any future studies and I'd definitely be interested"*(E8). However, another nurse seemed apprehensive about changing her practice.

"I would like to try and do things differently. So I'm gonna have to try and do maybe even talk to them a bit longer about getting – you know, bring feelings up and things, oh I don't know, it's just time, I think"(T).

Her uneasiness about addressing feelings may be why she was reluctant to explore this approach. *"I should have gone into it a lot more"*(T). She blamed herself for being unable to recruit the two individuals she approached, as it was *"probably my fault that neither of them worked, really"*(T).

In addition to raising awareness of what impacts on obesity the materials were useful. *"Just being a bit more aware of the wider issues and to not focus in maybe just so much in on what people are eating and how much exercise they're doing. You know, whether there's maybe social things going on or whatever... I would definitely adopt the 10% thing, I think it is a good, a really good gauge to start with"*(K).

When applying it to practice one of the nurses said, *“It’s just having your finger on the button really and it turns weight management into something very concrete and quite important without them getting sort of obsessed with calories and things like that”*(J).

The conversion chart also proved useful. *“It obviously speaks volumes that it’s sitting her on my desk and I’m using it”*(K). Another nurse who did recruit individuals pointed out the relevance of the conversion chart to practice. *“You could see the light in their eyes when they had lost lbs but say half and kilo or point something. They say, well what does that mean anyway?”*(S)

6.9.5 Working in partnership

Individuals had *“ never seen anything like this before and never been asked what they thought before. They have been told rather than being part of a partnership”*(S).

The experience of working together in partnership with individuals seemed to add to the appeal of this approach for nurses as *“It makes the person take part as well and take some ownership of it”*(Q6).

6.9.6 Taking a holistic approach

One nurse said how *“We were initially very focused on sort of diet a little bit of lifestyle where I think this was more as it is – a holistic approach to weight management. It looked at every aspect of their life so I think that’s where we were quite keen”*(E). Another nurse explained how the holistic approach fitted in with her approach to practice by providing a framework. *“It looked a really good approach and it looked as if there was a wee bit of a structured framework*

to work towards. Although you say to patients, where do you live and what are the other influences in life, what are their personal beliefs and perceptions, nothing was put on paper”(R).

However, there were mixed opinions as to the suitability of the holistic approach for everyone.

6.9.7 Not for everyone

There were reservations voiced as to the suitability of the holistic approach for everyone.

“I felt that the patients needed to have a certain amount of hmm, how shall I put it, for want of a better word, enough savey to really think about this. Not picking the ones that weren’t the brightest of the bunch because we do have one or two that I really don’t think would be able to get their head round it”(V).

This is a key issue when considering how to best to help individuals but in actual fact it was used by Nurse J with someone who had learning disabilities. Her carer helped her to complete the booklet and she started losing weight although put some back on when becoming *“excited about holiday”(J01).*

Another potential difficulty was the lack of literacy skills. It had been anticipated and was highlighted by the experience of Nurse A. *“I didn’t realise one of them had difficulty reading so that was a problem for her and it ended up we wrote out the book together. I wrote what she told me”(A).*

Nurses tended to select those ‘heart sink’ individuals who had tried many times in the past to lose weight. It seems that the advice giving of prior interventions were not always successful. *“It’s all very well giving the advice if they take it and it works then that’s fine. If it doesn’t then it’s not so easy after that.”*(V). Judging by the results of this study it would appear that the holistic approach is particularly suited to weight management, in particular those who are in the higher BMI bracket and individuals with long term weight problems.

6.9.8 Future use

Most nurses said they would use this approach again and some asked for more booklets to use with other individuals post study. One nurse, however, could not *“see myself being able to commit that sort of time again”*(A). Others suggested that if it was modified they would consider using it. The part that everyone agreed caused greatest difficulty was the design of the ‘action maps’. They were *“a bit complicated”*(S) and *“a wee bit fiddly”*(J) resulting in individuals *“struggling to fill that bit in”*(Q). Although nurse R agreed she said that *“once they got the hang of it they were up and running, they were away ahead of me. Basically, with that wee bit extra time they seemed to kind of, you know, manage quite well”*(R). The researcher took on board these messages so the action maps were adapted (APPENDIX 20) on completion of the pilot study to make them simpler and provide more writing space. It is hoped that with the adaptations time would be saved.

Some nurses said they would be selective in their future use because

“some people don’t have huge problem with it but would like to just be monitored. The fact that they are coming to see someone, something to aim for, sometimes that’s just enough for people and not everyone can afford to go to clubs and things”(B)

but use it with *“probably people who are grossly overweight and had to have very risky health problems due to their weight”(B).*

Others saw the potential for using the approach with everyone. *“I would like to even use this first hand, right at the very beginning for everybody”(R).* One nurse thought she would *“use it quite a lot because it is a rising problem in our practice”(J)* and again specified *“I will use it with like people coming newly to me”(J).* Opinions as to the value of this tool for every individual therefore differed but the final word is given to Nurse J. *“I think having a structured positive holistic tool like this I think I would hopefully, my patients would benefit more. It’s not my success, it’s their success”(J).*

Chapter 7

Discussion of the relevance of a holistic approach to weight management in primary care

This chapter begins by looking at the effectiveness of the holistic approach to weight management in terms of weight loss before going on to examine the relevance of identifying different aspects in relation to the whole person. The difficulties of implementing the holistic approach are then discussed, followed by further discussion on the utility of the booklets, the experience of using the holistic approach and the education and support provided. Consideration is then given to the role of practice nurses (PNs), particularly working in partnership with obese individuals and the influence this had on moving individuals towards self management. The difficulties of implementing weight management are considered next and finally, conclusions are drawn in relation to a holistic approach to weight management in primary care.

7.1 The relevance of taking a holistic approach

Overall, the holistic approach developed for this study appeared to have some impact on weight management. It seemed to have an impact on both those individuals who were overweight and also the nurses who used it in practice. However, it is accepted that this is a small study, although, there appears to be some positive outcomes in using this holistic approach as against ‘traditional’ approaches.

7.1.1 The effectiveness of the holistic approach in terms of weight change

In terms of weight change the results suggest that the holistic approach is reasonably effective in the short term. Due to the very small number recruited for this study no true

comparisons with other interventions can be made. However, some indication of effectiveness may be gained by examining the results with other UK primary care studies. In a randomised controlled trial, Moore et al. (2003) found that their intervention for obesity management made no difference. The more effective Counterweight (2004a) model provided greater detail thus allowing some comparison. There were similarities between Counterweight and the holistic approach in mean age (50.6 vs 49.6) and drop out rates (13% vs 14%). Recruits to the Counterweight programme had a lower BMI (36.9 vs 39.4) and had fewer co-morbidities (75% vs 100% with at least one co-morbidity). Fewer Counterweight subjects had lost >5% of their weight after three months (13.9% vs 17%). These results are promising in terms of short term weight loss judging by estimates of 10% success rates (Brown and Psarou 2006) but these comparisons should be treated with extreme caution. No conclusions can be drawn about possible long term outcomes of the holistic approach. Since most people regain lost weight over 5 years (Stern et al. 1995; Anderson et al. 2001) it would be necessary to undertake a much larger and longer study to gain such evidence but other factors also need to be considered.

There are many strands to the holistic approach and therefore many elements might contribute to it's success or otherwise. The question is what components of the holistic nature of the approach made the difference. It is acknowledged to be a complex intervention (Campbell et al. 2007) looking at the whole person incorporating physical, social and emotional influences on weight management. PNs and individuals who were able to incorporate these perspectives were able to take a broader approach to intervention. There seems to be some advantage to looking at the whole person as it appeared to move people away from just being diet focused. It was apparent from the

findings that people were able to see the relationship between physical, social and emotional aspects of weight management. It also seems that having looked holistically at weight management they learned more about the relevant parts to work on (Thorne 2001). However, not all individuals and practitioners identified with the holistic approach, indicating perhaps, that this approach is not for everyone.

7.1.2 Identifying parts of the whole

The holistic approach identified areas which may not be identified in usual practice for weight management. For example, bereavement issues and being a good role model influenced different stages of weight management. Perhaps these issues came to light because of the holistic nature of the approach.

It appears that unresolved grief may affect how people manage their weight as indicated by the lady whose son had committed suicide. In another instance a man had come to realise that his weight problem began following his brother's sudden death. On using the materials with his wife he realised the connection between his weight and unresolved grief perhaps showing the importance of spousal support (Cramer 1991; Koivaula et al. 2002). However, there seems to be limited evidence for spouse support in weight management (McLean et al. 2003) perhaps indicating the need to take a holistic approach.

While the usual focus is on how individuals can gain support from others, a different aspect of weight management emerged from this study. The weight management map helped one individual to become aware of her responsibility as a good role model for her daughter thus providing an incentive to make changes in her own life. Families tend to follow similar dietary habits (Rodin 1992) and since mothers are usually the principal

providers of food for the family (Benton 2004) they play a key role in the type of foods provided. The mother in this study planned to reduce her own consumption of take-away meals and snacks which have grown in popularity (House of Commons 2004) in an effort to be a better role model for her daughter. This tactic was also used by a father in a study by Jackson et al. (2005). Being a role model for physical activity is also important as Gable and Lutz (2000) found that television watching was associated with childhood obesity. However, parents who were active themselves and encouraged their daughters to be active were positive role models (Davison et al. 2003).

Coping in the wider community is not always easy as was illustrated by one individual who received a gift of chocolates from a friend. This gift which superficially appeared to be supportive, had a negative outcome. As gifts (Helman 2000) and friendship are so tightly bound there may be a fear of damaging the relationship if gifts are refused. One individual in the exploratory phase found that pressure from friends coerced him into having more alcohol than he planned. These situations demonstrate how influential friends, (Nestle et al. 1998) inadvertently or deliberately sabotage the actions of individuals trying to manage their weight. Friends, however, may not be the only influence on weight management practices.

One individual encountered negative attitudes at the local pool when she made a real effort to return to swimming. In the past, following such a negative experience she would have used food as a comfort. Her reaction on this occasion was different as she was able to see the broader context and take more appropriate action rather than allowing the rejection to drive her to food. However, helping obese individuals to address these issues may be difficult.

7.2 Putting the holistic approach to weight management into practice

Implementing a holistic approach to weight management is not an easy option as PNs not only have to help individuals deal with prejudice but also have to set aside their own prejudices (Brown 2006). It is argued by anthropologists that the ‘blame culture’ in obesity was associated with a puritanical attitude towards food in Northern Europe (De Garine and Pollock 1995) where a lack of discipline was viewed as sinful. Crandall (1994) agreed but further explained that from an attributional stance if obesity is viewed as controllable then individuals will be blamed for their lack of control and stigmatised. Weiner et al. (1988) further clarified that the perceived lack of control was seen as the obese individual being unwilling to make an effort to take control. One PN seemed to find it difficult to take a holistic approach and preferred advice giving but when that failed to have an effect she suggested that the individual go elsewhere for weight management. Health professionals taking this stance may tend to blame and stigmatise individuals. This behaviour could be at odds with the Nursing and Midwifery Council (NMC) code of conduct, which states that nurses must “*respect the patient or client as an individual*” (Semple and Cable 2003 p.41). It might be argued that the holistic approach to weight management proposed in this study provides the necessary channel to facilitate ‘appropriate behaviours’. Unfortunately, even health professionals such as physicians, nurses and dietitians who are involved in obesity management frequently, and in the researcher’s view incorrectly, relate poor hygiene, lack of will power and dishonesty to obesity (Puhl and Brownell 2001). It follows that these beliefs influence the approach to practice.

Implementing a holistic approach requires some means by which it can be facilitated. The approach taken here was of developing a booklet and weight map in which holism was utilised in conjunction with some educational support from the researcher.

7.2.1 *Booklet for holistic care*

The booklet 'My personal approach to weight management' was designed to aid the development of partnership working between nurse and individual in a holistic way. It seemed to strike a chord with most PNs who took ownership of the holistic approach as it reflected their own philosophy to care. Individuals likewise stated that the booklet helped them take control of how they managed their obesity unlike the study, by Currell and Urquhart (2004) who found the only benefit of individuals keeping their own booklet, was that they were less likely to be lost. The booklet in the present study appeared to achieve its aim of facilitating a holistic approach. It also helped some individuals to address issues such as reflection, taking control, trust and power sharing.

7.2.1.1 Weight management map

In particular, the weight management map, promoted self-reflection, leading to identification of areas for change. It was devised by utilising evidence from individuals in the exploratory phase. The inclusion of quotes from individuals from the exploratory phase may have been part of the reason why those taking part in the intervention found the map relevant to their own needs. Although care had been taken to include only a selection of quotes to stimulate the individuals' thoughts about the way they managed their own weight that was not always the outcome. One individual was known to have used the map provided for the nurse. The map for the PNs contained a much larger list of relevant quotes from the exploratory phase. This was to help PNs be aware of the range of possible influences on weight management but not intended for use by

individuals. Unfortunately, it was used by one individual as a checklist and, in so doing, did not stimulate her to think about what influenced her own weight. That particular individual had a poor outcome suggesting that using the booklet on its own may not lead to appropriate weight management. Therefore, the weight management booklet needs to be used in conjunction with the nurse as stimulus for discussion within the nurse/individual partnership. Stromgren et al. (2001) had similar results where quality of life questionnaires completed by cancer patients provided a focus for discussion. Furthermore, they compared the questionnaires to nursing records to discover that although nurses were good at pinpointing physical impairments, they less often identified other areas of impaired well-being. This highlights that, rather than only the PN undertaking the assessment it is important to involve the individual. In this study, the weight management map provided challenge without blame, as it was the individuals themselves who identified their current lifestyle. A number of individuals provided evidence for this supposition when they stated that writing things down helped them realise what they needed to do, which is the first step to self-management.

However, the map may bring up uncomfortable topics. The legitimacy of encouraging people to do so may be debatable as not all nurses feel comfortable with this. The experience of one individual was that dealing with the issues raised helped her move forward and make changes to succeed in weight loss. Nonetheless, another individual felt that using the map was intrusive when it identified his depression. Care may be required in selecting with whom to use the approach and highlights the dilemma of helping people change without doing harm. These experiences underline the need for professional skills in dealing with unexpected situations that may arise.

7.2.1.2 Goal and action planning

It could be deduced that both the type of materials and the nurse/individual relationship were crucial for goal setting. Although individuals identified the components of their own lifestyles and the map concept seemed to help them see the links between various aspects, occasionally they did not carry that through to identify goals. It appears that working in partnership with their nurse to create a plan of action was particularly important in these instances. This seems to indicate some individuals find it difficult to implement goal and action planning without support.

It may be that the booklet and map in this holistic approach helps make a distinction between long and short-term goals. Writing down and reviewing the short-term goals seemed to help individuals create and achieve long-term goals with associated rewards. It would appear that when short-term goals reflect the individual's own goals they are more likely to be achieved and avoid "*the danger of disheartenment*" (Roper et al. 2000 p.137). Furthermore, as happened occasionally in this study, focusing almost exclusively on food for these goals did not result in weight loss. This highlights the importance of a taking a broader holistic approach to identify appropriate goals and action planning .

7.2.1.3 Written plans

The action map, where individuals wrote down their goals, achievements and rewards although very relevant was reported to be more difficult to use at first. A Cochrane review (Toelle and Ram 2006) suggested that the use of such written plans in asthma care did not necessarily improve outcomes. However, these plans were probably focused on medication and peak flow readings. Therefore, the plans were likely to be implemented from a prescriptive perspective rather than holistically as in the present

study where individuals reported that writing things down was very useful. The nurse and individual also worked in partnership to clarify outcomes but time pressures often limited discussion when using the booklet in consultations and this restriction in time may have compromised outcomes. Stapleton et al. (2002) who undertook research into evidence based leaflets in maternity care concluded that if materials were not discussed their potential was greatly reduced. Therefore, if good outcomes are to be achieved, sufficient time must be provided for these discussions. This is particularly relevant for the holistic approach where physical, social and emotional factors may impact on weight management and therefore require time to identify pertinent issues.

This study demonstrated that taking a partnership approach using the booklet 'My Personal Approach to Weight Management' could improve outcomes. In an editorial of a medical journal, Holman and Lorig (2000) asserted that taking a partnership approach does produce more effective outcomes. Koch, et al. (2004) in another asthma study demonstrated that where individuals were able to take control through partnership, they were able to alter their lifestyle and improve outcomes. Their conclusion was that *"There needs to be a focus on providing people with the means to grow and learn in a participative relationship that cannot be fully realized with 'off the shelf' self-management solutions."* (Koch et al. 2004 p.484).

Regardless of being designed for use by everyone, the booklet in this study appeared to provide individualised care by aiding the growing and learning processes for both PNs and individuals. Nonetheless, although some PNs in this study were effective in assisting individuals with obesity management the evidence would suggest that it might not be suitable for every individual and may need further support. Furthermore, perhaps

a greater impact would have resulted if more support and education had been provided for PNs in practice.

7.3 Experience of using the intervention

Irrespective of support and educational needs it could be argued that establishing a therapeutic relationship is not instinctive to nurses and requires effort (Moyle 2003) and the emotional effort involved may be too taxing for some (Smith 1992). Some may prefer to keep a degree of detachment particularly if individuals are likely to want to discuss problems with which the PNs feel unable to deal (McQueen 2000). Hence the holistic approach taken in this study where the ‘weight management map’ appeared to raise awareness in individuals may have been more difficult for some nurses. Nurses may implement blocking tactics to avoid emotional issues disclosed by individuals if they feel uncomfortable and unable to deal with them (Wilkinson 1991). These blocking tactics such as ignoring individuals’ cues and changing topics may enable nurses to concentrate on their own agenda by maintaining control (Wilkinson 1991). Keeping control, it could be argued does not facilitate a holistic approach (Phillips 1996).

The setting in which nurses work also appears to have an impact. If they perceive themselves as having personal support from their practice hierarchy, like practice B, they may be less likely to use blocking tactics (Booth et al. 1996). Dealing with emotional issues, however, *“involves feeling, and feeling involves personal vulnerability.”* (Henderson 2001 p.131) which, perhaps for some PNS, may have too high a personal cost.

Several PNs who recruited individuals in this study appeared to feel very comfortable with the holistic approach, and this enabled them to introduce the subject of weight with individuals and encompass emotional care in their management. It appeared that the materials encouraged the therapeutic partnership as more than one nurse in this study indicated that the holistic approach was fairly intense but suggested that addressing emotional needs was not unusual in primary care nursing. In fact, one nurse stated that it was worth the time and effort thus providing a great deal of job satisfaction (Staden 1998). This was also the finding of Gallant et al. (2002) but according to Simpson (1991) “*deeper feelings the patient has will become known to a nurse only if the relationship is a sound one*” (p.96).

Phillips (1996) asserted that the first aspect of involving emotional work in the therapeutic relationship is for the nurse to provide reassurance and a ‘sounding board’ for individuals. One of the PNs in this study used the same terminology when she described working with individuals. It would appear that by “*acting as a sounding board against which the patient may air his views and give full expressions to his feelings in a non-judgemental relationship*” (Peplau 1988 p.226) she was implementing beneficial nursing care. The outcome of her therapeutic encounters in the study produced good results, which Phillips (1996) indicated was the second aspect of emotional involvement. Emotion, as mentioned earlier, is a key theme of Peplau’s model and is used to help the individual to develop better coping skills. It therefore appears that if a trusting relationship develops between PN and individuals, individuals can talk about their problems and be assisted to recognise their own reactions and coping mechanisms and learn from them (Pearson et al. 2005). By doing so may lead to changes in behaviour and improved coping skills when faced with new situations.

However, as also highlighted earlier, there may be a gender difference in confronting emotional issues. There was evident discomfort expressed by one man when the map raised his awareness of depression. Another man appeared to have difficulty either realising or expressing the relationship between his weight gain and his brother's sudden death. These situations suggest that men may find emotions difficult to deal with or express. Emotional expression may be learned in childhood. It appears that parents respond differently to the emotions of their offspring as unlike girls, boys are punished for expressing sadness (Garside and Klimes-Dougan 2002). The result may be that in adulthood men are more reluctant to articulate their feelings and seek support (Burleson 2003, Ryan et al. 2005). Awareness of a possible gender difference may be important as it could be argued from the results of the exploratory phase that if emotional well-being is addressed weight loss would be the outcome. However, men may not feel comfortable with addressing emotional issues and so raises the question of the relevance of the holistic approach to both men and women.

7.4 Education and support

Whilst the booklets and partnership working appear to be essential for the holistic approach a further key component must also be a need for PN education as Brown et al. (2007) identified that there is a lack of knowledge and understanding about obesity management. Nurses are aware of their need to continually develop their knowledge and practice (Thomson 1999) but PNs in this study expressed their need for support and training in obesity management.

The booklet 'A Holistic Approach to Weight Management' aimed to provide at least a background to obesity and described a holistic approach to management. It produced

small changes in nursing practice in those PNs who were unable to recruit individuals and had no other input from the researcher. Grimshaw et al. (2001) included nursing education in a comprehensive overview of systematic reviews regarding professional education in health care. They found that while education had a positive effect on nurses, printed materials alone had minimal impact. A later systematic review by many of the same authors (Freemantle et al. 2006) came to the same conclusion.

7.4.1 *Outreach visits*

In this study, other methods of education were employed in addition to materials, including outreach visits. Grimshaw et al. (2001) agreed that outreach visits were generally effective and Fairall et al. (2005) concluded from their primary care study in South Africa that nurse practitioners had improved the identification and treatment of tuberculosis and asthma. However, there was no improvement in smoking cessation (Fairall et al. 2005) perhaps due to the restricted time that nurses had in consultations with individuals or a lack of skills to encourage behaviour change. O'Brien et al. (2006) included a smoking cessation study in their systematic review where outreach visits along with written materials and educational meetings proved successful. In addition to reminders and feedback, they also highlighted the benefit of several outreach visits rather than only one.

In this study, outreach visits were a key part of the planned educational process and considered to contribute to improving weight management. These visits allowed the PN and researcher to discuss difficulties that arose, particularly in relation to PN and individual consultations and how to progress intervention. However, not all PNs took up this opportunity although it appears that situational learning is beneficial (Grimshaw et al. 2001). The greatest benefit seemed to be gained when the researcher and PN

shared a consultation with an individual. This provided an opportunity for the holistic approach to be actioned in practice without the researcher taking over the consultation. Following the consultation, further education took place in the form of 'reflection-in-action' (Schon 1987). This reflective practice appeared to aid PNs to see weight management in a new way and recognise a broader range of options to intervention (Paniagua 2001). It may have been, however, that the two nurses who availed themselves of this opportunity had already acquired knowledge and understanding of holistic interventions and perhaps felt more at ease with sharing a consultation. Furthermore, the individuals who came to them for obesity management also indicated their satisfaction with such encounters.

7.4.2 *Education and attitudes*

It may be that participating in a consultation using the holistic approach had an effect on the PNs approach to weight management. Although the booklets were underpinned by a non-judgemental approach, perhaps sharing a consultation provided further emphasis as the PNs had developed greater self-awareness, facilitating the development of a partnership with individuals.

It may have been difficult for some PNs to avoid being influenced by negative societal beliefs about obesity. A recent review by Brown (2006) confirmed that nurses displayed similar negative views to GPs with regards to individuals with obesity. Any lack of success in weight management may have contributed to feelings of frustration for some PNs in this study. This, in turn, may have led to individuals feeling that they were being blamed for poor outcomes, as found by Ogden and Hoppe (1998), although they also found that nurses with more experience had more positive attitudes. Perhaps

education for obesity management should incorporate societal attitudes to increase understanding of what it is like to be obese and thereby view individuals holistically.

For those PNs who did not share a consultation with the researcher, an educational workshop may have provided generally better outcomes as such interactive groups have been confirmed to improve professional practice (O'Brien et al. 2006). An opportunity to improve therapeutic counselling skills in such groups may aid a better understanding of how to deal with future consultations. For example, one individual identified in her weight management map that she overate and felt guilty. As "*secrecy is most often connected with feelings of guilt*" (Peplau 1988 p.137) perhaps she was a binge eater. Binge eaters often eat in secret (Lyons 1998) and therefore it is not easy for individuals to admit to themselves, far less to someone else, what they are doing. The weight management map helped raise self-awareness thereby requiring the PN to have good counselling skills in this type of situation to elicit information to explore further the possibility of binge eating. However, this poses the question of what skills PNs are required to have. It seems unrealistic to expect PNs to have specialist counselling skills, such as cognitive behavioural therapy, suggested for eating disorders interventions (NICE 2004). Nonetheless, it seems that PNs do identify individuals who need specific help as several PNs made appropriate referrals to psychologists or counsellors for various reasons.

This seems to emphasise a need for caution in using the holistic approach and the need for better education. However, although PNs in this study indicated their wish to further their skills and knowledge in a way appropriate for nursing it appeared that this may not always be easy.

7.5 The role of the practice nurse in primary care

Like their counterparts in New Zealand it appears that the PNs role is “*largely moulded around the GPs in their particular practice*” (Kenealy et al. 2004 p.73) thereby sometimes restricting the way in which they practised. The greater emphasis on treating long-term conditions in primary care has resulted in chronic disease management being delegated to PNs as reflected by this study. This change has been influenced by government policy and GPs themselves (Charles-Jones et al. 2003) through the growing demands on the workload by the General Medical Services (GMS) contract.

It appears that nurses involved in chronic disease management may be viewed as substitute doctors to reduce the workload and healthcare costs in primary care (Laurant et al. 2004). Should this be the case, the holistic approach would not fit in with this type of practice as it is not disease orientated and may be time costly. Therefore, support for implementation in practice would be required.

7.5.1 Obesity management in primary care

Nurses may not always receive the organisational support they require to change their practice (McKenna et al. 2004; Brown et al. 2007) even in the short term. It is therefore, important to understand the context in which PNs work.

The allocation of GMS points (NHS 2005) for the identification of obesity in primary care indicated that a greater priority was to be placed on obesity management. However, providing intervention once individuals have been identified as being obese may be compromised by competing priorities and level of general practitioner commitment (Counterweight 2006). Funding influences priorities and the Scottish

government (2008) have very recently committed £15million directly targeted at tackling obesity over the next three years. Part of that funding is aimed at primary care but there appears to be a lack of enthusiasm to implement weight management strategies, in particular, it seems one that takes a holistic approach.

In the UK both GPs and PNs contend that they treat individuals in their care holistically (Charles-Jones et al. 2003) but this approach is hampered by current incentives in the GMS contract (Howie et al. 2004). One of the PNs in the present study highlighted how the need to document the requirements of the existing contract is detrimental to the interactive relationship between practitioner and individual (Michie et al. 2004).

A bigger influence on implementing obesity management is probably the attitude of GPs towards individuals with obesity. Some PNs in this study suggested that there were GPs who displayed similar attitudes to GPs in research undertaken by Mercer and Tessier (2001) where obesity was viewed as a behavioural problem rather than a medical one. Further studies stated that GPs viewed obese individuals as lacking will power, indulgent, inactive and non-compliant (Foster et al. 2003; Puhl and Brownell 2001). Furthermore, they strongly indicated that individuals were the cause of their own obesity and therefore should manage it themselves (Epstein and Ogden 2005). In such environments, nurses interested in obesity management may experience difficulty in providing adequate time for intervention and could be part of the reason that some PNs in this study felt unsupported although no attempt was made to interview GPs to ascertain their views.

The attitudes of professionals have been explored in stigmatised groups such as substance abusers and were found to impinge on therapeutic care (Moodley-Kunnie

1988). Since obesity is said to be the “*last socially acceptable form of prejudice*” (Stunkard and Sorensen 1993 p.1037) it seems reasonable to argue that attitudes would affect care in this group. Furthermore, nurse theorists such as Peplau (1988) suggest that quality of care can be compromised by prejudicial attitudes, which are coloured by societal beliefs and values.

Although PNs in this study, like their colleagues elsewhere (Brown et al. 2007) viewed themselves as having a role to play in weight management, it may be that GPs who employed them were generally reluctant to address obesity (Epstein and Ogden 2005). This may have been partly due to the lack of efficacious treatments (Foster et al. 2003) but more likely to be a lack of time, training and remuneration (Puhl and Brownell 2001). Another element in the reluctance of GPs to address obesity is the fact that more than half said they were unsuccessful in treating it (Foster et al. 2003) suggesting that interventions such as the holistic approach might be applicable to other professional groups. However, these results should be treated with caution as although 5,000 primary care physicians were randomly sampled the response rate was only 13%. There may also be cultural differences as that particular study (Foster et al. 2003) was carried out in the United States of America (USA). It may be that the UK is different as both GPs (75%) and PNs (88%) stated they had the motivation to treat obesity (Counterweight Project Team 2004b).

Implementation may also be influenced by the importance attached to an intervention by GPs. For example, it was suggested that failure to implement an evidence based training package to improve urinary continence in primary care (Abbott and Hotchkiss 2001) was partly due to the lack of support from GPs who may have been influenced by

their view of the unimportance of incontinence. Obesity interventions may fall into a similar category.

A UK wide cross-sectional observational study (Counterweight Project Team 2004b) showed that obesity was under-diagnosed. Women were found to have more visits than men to their GP or PN but they were also more likely to be weighed during the consultation (69% of women compared with 57% of men). The same study also showed that obese men, once identified, were more likely to be assessed for cardiovascular risk factors than women with a higher BMI. It may be that, unlike males, females are more aware of their body size, due to cultural pressure to achieve slim figures, and therefore, seek help. This was confirmed in a qualitative study in primary care where obesity was viewed by health professionals as a "woman's problem" and not treated as an important health issue (Mercer and Tessier 2001). While this appeared true for some of the GPs who worked with the PNs in the holistic approach to weight management, the nurses themselves showed awareness of obesity related issues for both men and women and the health implications for all. Nevertheless, it was mainly women who were recruited for this study. One reason may have been that the short recruitment time resulted in women being more accessible as PNs tried to contact them at home during the daytime. It may also have been the case that women themselves were more willing to address their weight by participating in the study. Cultural influences, rather than health concerns, may have had a part to play for both the women recruits and the PNs. Nonetheless, some PNs did recruit regardless of these issues.

7.6 Partnership

The concept of partnership was an important aspect in relation to outcomes in this study. Developing a partnership may falter at the very first steps of orientation and identification (Peplau 1988) if an individual seeks help in managing their weight and the nurse does not accept them in a non-judgemental way, listen to their needs and educate them in understanding obesity. Hewitt-Taylor (2003) sees partnership between the nurse and individual as characterized by negotiation leading to empowerment of the individual and may reflect the quality of care required for better outcomes (Di Blasi et al. 2008). Before going on to look at partnership development it would be pertinent to examine the context in which PNs work and how this might impinge on their ability to develop partnership in practice.

7.6.1 Nurse self-awareness

The evidence in this study also appeared to indicate that some PNs were very self-aware. Self-awareness is a key element in Peplau's model and is the first requirement in developing a partnership with individuals (Walsh 1991). In the guest editorial of a nursing journal Chavasse (1992) suggested that nurses also need to have a self-awareness of their prejudices. Setting aside prejudices facilitates open communication and "*unconditional acceptance*" (Peplau 1988 p.235) of individuals, which is vital to providing holistic care. Historically, barriers to achieving greater communication have been organisational in that nurses were task orientated discouraged from becoming emotionally involved with patients (Menzies 1960). Hence, attention was focused on the provision of physical care and other areas neglected (McQueen 2000). This distancing of oneself discouraged the development of a trusting relationship.

Was it the case that PNs who were successful in supporting individuals with weight loss were more able to develop trusting relationships with individuals? FalkRafael (2001) identified a trusting relationship as being non-judgemental, respectful, empathic, enhancing dignity and providing a safe environment. In that same study individuals were interviewed and corroborated these findings. One was quoted as saying *“It’s because I feel safe with her, and I feel very, very confident that I don’t have to worry; she is not going to judge me...She’s very attuned to how I’m feeling.”* (FalkRafael 2001 p.7). Such findings concur with those of a systematic review of patients in primary care (Wensing et al. 1998) suggesting that central to any intervention such as this is the need for nurses to establish such relationships. This raises the question the extent to which the provision of materials contributes to the intervention. As already discussed, the materials appear to be important but it may be that if the materials are used within a trusting relationship outcomes would improve further. However, it takes time to develop trust in a partnership and it also depends on the particular practitioner as some individuals have found that even after years of attending their practitioner they never got to ‘know’ them (Paterson 2001).

7.6.2 Knowing

The PNs in this study talked of knowing individuals at different levels. Some talked of ‘knowing’ individuals at a superficial level where they arranged appointments times that they knew would suit individuals. Russell et al. (2003) argued that knowing the social circumstances of individuals was crucial in developing partnerships. PNs, particularly in more rural areas where they are usually part of the community themselves, are often aware of social situations pertinent to the individuals in their care. While that level of knowing provides a good base on which to develop a relationship it may not be enough.

In order to achieve a therapeutic effect Williams (2001) contends that a level of closeness and intimacy is required.

It may have been that others who spoke of a deeper 'knowing' developed a trusting relationship which evolved to the point where individuals felt confident enough to divulge very personal details. Therefore, the findings of this study would suggest that a deeper level of 'knowing' enhances the partnership further and gives increased satisfaction to both individual and professional while improving outcomes. This involves altering the balance of power between individual and professional.

7.6.3 *The power balance*

The PNs in this study tended to encourage individuals to participate in their care thereby altering the power balance. By doing so they helped individuals to improve their skills *"in meeting problems rather than in teaching solutions to problems"* (Peplau 1988 p.247). It appeared that unlike the traditional paternalistic approach where the authoritarian style of consultation dictates that the power lies with the health professional (Nyatanga and Dann 2002). In a partnership the power is shared through the professional taking a facilitative role, which leads to empowerment in the individual (Gallant et al. 2002). In essence this means willingness on the part of nurses to relinquish the 'nurse knows best' attitude and believe that individuals are capable of making choices. Just as parents are reluctant to allow their children to make choices perhaps nurses who conform to a paternalistic approach had more difficulty in allowing individuals to make their own decisions and set goals (Pill et al. 1999) although they may genuinely believe they are involving individuals in their care. Nonetheless, the result of creating a parent-child relationship could have the opposite effect by disempowering individuals (Malin and Teasdale 1991).

7.6.4 Empowerment through partnership

The evidence in this study appeared to show that individuals became empowered through partnership with the PN. Plans and goals were set to fit in with the individual's lifestyle by sharing their own experiences of weight management with the PNs who brought their knowledge and skills to the partnership. In order to help individuals achieve change it has already been suggested that nurses first require self-awareness before they can develop a partnership with individuals and get to know them on a deeper level. This, in turn, enables the individual to bring their knowledge of past weight loss experiences, beliefs, values and current life situations to the consultation.

7.7 Self-management

The results from this study appeared to suggest that when individuals worked in partnership with the nurse they participated fully in their care and felt more in control (Henderson 1997). Nonetheless, it has been suggested that not all individuals want to participate in their care (Waterworth and Luker 1990; Biley 1992). These particular studies (Waterworth and Luker 1990; Biley 1992) were carried out in secondary care but a primary care study McKinstry (2000) revealed that interest in participation depended on the type of problem and those with chronic conditions preferred greater input in their care. In a qualitative study exploring the facilitators and barriers to participation of asthma patients, for example, Caress et al. (2002) identified having enough information and continuity of care as facilitators while barriers included the professional's unwillingness to recognise the patients' expertise and lack of time during appointments. The findings of this present study suggest that these same factors apply to obesity management and therefore it is imperative that individuals be involved if outcomes are to be improved.

7.7.1 Individual empowerment

Most of the individuals in this study had endured weight problems for a long time and as with any long term condition they would have gained a great deal of knowledge particularly with regards to diet, since treatment has often been focused on diet alone. There is a difference between knowing what to do and how to achieve it. It seems that when PNs only gave advice it probably had little impact. The traditional paternalistic reaction to a lack of success would be to blame the individual for non-compliance which Russell et al. (2003) stated is a way for health professionals to keep control. They argue that transferring power and control to individuals through a person centred approach is a more relevant way forward. Although there are many definitions of empowerment in the literature, the one applicable here is “*a social process of recognizing, promoting and enhancing people’s abilities to meet their own needs, solve their own problems and mobilize the necessary resources in order to feel in control of their own lives*” (Gibson 1991 p.359). A way of doing so may be to incorporate the expertise of individuals into nursing care to encourage their participation. Therefore, taking a participatory, person centred, holistic approach seems relevant.

7.7.2 Towards self-management

This study appeared to show that for individuals to develop self management skills they need self-awareness to enable them to recognise areas of their lives that need to change in order to achieve their goals. The evidence seemed to show that reflection encouraged self-awareness leading to self-management practices (Elfhag and Rossner 2005). and PNs were often able to help individuals in “*the processes of self-renewal self-repair, (and) self-awareness*” (Peplau 1988 p.251). As identified by several individuals, it was not always easy and even painful for some but with the aid of an empathic PN, individuals were encouraged to believe in their own self worth and so raise their self-

esteem (Eckroth-Bucher 2001). In turn, this appeared to increase confidence (Eckroth-Bucher 2001) in their ability to lose weight.

The results of the current study suggest that taking a holistic approach to goal setting is important (NIH 1998). Having scrutinised various areas of their life and beliefs, to enable them to decide on the areas for change, individuals in this study were encouraged to set goals. The breakdown of these goals into manageable targets may have helped them to feel more in control and thus more confident in their own ability to achieve these targets. However, those who gained weight tended to focus on food and occasionally activity thereby not looking at ‘the whole me’.

As seen in this study some individuals reacted to lapses in weight control by self-criticism (Popkess-Vawter et al. 1998). This is often related to guilt and as “*guilt operates outside awareness*” (Peplau 1988 p.135) reduces the capacity of the individual to identify the changes required for better weight management. Awareness of the circumstances of a lapse is important if individuals are to learn how best to deal more appropriately with the same circumstance in the future. Therefore, self-monitoring is a useful tool for self-management (Elfhag and Rossner 2005) and incorporating it in the ‘action plan’ appeared to facilitate self-monitoring. Individuals were able to review to what degree they had succeeded in achieving their goals and adjust or introduce new goals as progress was made.

Individuals who made progress with weight management in this study conveyed greater satisfaction with the relationship they had with their PN. Perhaps, taking a person centred approach helped individuals become more involved in their care by participating (Ciechanowski et al. 2004).

In a nutshell, *“The nurse promotes client empowerment and competency by maintaining the relationship, reinforcing client progress, supporting decision-making, and assisting the client to learn new knowledge and skills.”* (Gallant et al. 2002 p.153). The materials appeared to play an important part in assisting PNs and individuals to achieve empowerment through partnership. Nonetheless, there appeared to be some practical difficulties with implementing the holistic approach.

7.8 Practical aspects of implementing the holistic approach

If PNs were expected to take a medical model approach to care it may have had implications for implementing the holistic approach. Should they lack practice autonomy (Zwarenstein and Bryant 2000) they may feel that they have little authority to make changes (Funk et al. 1991).

With regard to appointment times the attempts by PNs to provide longer consultations according to individual need were not always successful. They were restricted to 10 or very occasionally 20 minutes. Current practice for dietitians giving weight management advice is half an hour for a new appointment and follow-up sessions of about 20 minutes duration (Harvey et al. 2002b). In the Counterweight programme appointment times for PNs were 10-30 minutes. The implementation of the holistic approach was therefore, more restricted in the time allocated to individuals. This may partly be explained by the fact that it was not practice driven, unfunded and depended on the interest and good will of the volunteer nurses who were only permitted to take part in the study if it did not interfere with their current workload. In such circumstances the level of PN autonomy may have been more important than for usual practice.

Any complex intervention which includes implementing lifestyle changes may require a longer appointment, at least, initially. Like the individuals in a smoking cessation study, those taking part in the holistic approach may have preferred a shared approach to treatment but this means a longer consultation time (McKinstry 2000). In addition, the recall system now generally in place for chronic disease sufferers, while it improves process outcomes, does not improve patient outcomes (Renders et al. 2005). Robinson (2004) suggested that for good self-management in inflammatory bowel disease, for example, fixed routine appointments were less effective as the disease was unpredictable and relapsing in nature. Obesity follows a similar pattern in that people have lapses of control, leading to relapse, when faced with unexpected life events. Even everyday occurrences, as seen in this study, affect the way individuals manage their weight. As with other chronic conditions it seems that being available for individuals at their point of need improves outcomes. It would therefore seem important to have greater flexibility in the appointment system to allow follow-up to suit individual needs.

Although initially requiring longer consultations this could even have a knock on effect of requiring fewer follow-up appointments (Howie et al. 2004) as individuals gradually learn self-management practices. Improved care evolves through a long term relationship, although Cabana and Jee (2004) say it may take many consultations with the same professional. Both longer appointment times and greater flexibility were recommended by GPs themselves (Freeman et al. 2002) but it does not appear to have materialised. Nonetheless, the majority of PNs in this study managed to achieve flexibility in both appointment time and frequency to the advantage of patient care.

Taking control, however, was no easy matter for some PNs who felt unsupported by their GPs. Their experience was similar to that of Welsh PNs who saw obesity

management as part of their role but were frustrated about not being allowed to allocate the necessary time (Owen 2004). Primary care nurses in Northern Ireland also felt that they had neither time nor authority to implement changes in general as they had a lack of managerial support (McKenna et al. 2004). There appeared to be conflicting messages given to both the PNs in this current study and elsewhere. GPs, like their counterparts in Wales and Ireland, generally did not see obesity management as their role and delegated it to PNs who, it should be noted, were not always given the authority to organise appointments accordingly. One reason why that might be is that GPs who themselves spend less time with patients may not be able to be so person centred and less likely to recognise and deal with long term or psychosocial problems (Wilson and Childs 2002). They were also more likely to refer people to PNs for weight management as their interest in addressing lifestyle issues was limited. Therefore, they may not have viewed longer appointments as being necessary. It may have been that some nurses, who experienced this had a sense of weight management being ‘dumped’ on them by the GPs, as expressed by one PN during her interview. PNs in England had similar experiences (Cadman and Wiles 1996).

Some PNs in this study manipulated the system by not openly challenging the appointment system but simply overrunning on appointment times. This less visible influence may have furnished them with more power than if they were to openly challenge the system and risk being ‘told off’, as was the experience of PNs in Wales (Owen 2004) when they allocated what was seen as too much time for obesity management.

Other PNs negotiated to spend longer on appointments and brought together the practice policy on appointments, the GPs medical care for individuals, and their own unique

intimate knowledge of individual's concerns, so acting as advocate for those in their care. There is, of course, a responsibility for the outcomes in acting in this way and a need to consider and reflect on how it affects other individuals so as not to compromise their care. Autonomous nurses accept that responsibility by justifying their actions, which is an imperative of the Nursing and Midwifery Council Code of Conduct (NMC 2002).

An example given by several nurses in this study was the decision not to refer individuals to the dietitian, which they justified by explaining the waiting times, lack of follow-up or gain, and inconvenience to individuals. These same PNs, who appeared to provide holistic care, often referred individuals to psychologists or counsellors where a need was identified thus demonstrating an awareness of holistic care. By referring to other members of the healthcare team they also recognised their own limitations thereby demonstrating accountability for their actions. This seems to suggest that the complexity of weight management often requires a multidisciplinary approach. The complexity also suggests that a holistic approach is required. Therefore, other health care professionals may benefit from education from a holistic perspective.

7.9 Conclusions

The holistic approach to weight management may be worth exploring further. The hard outcome of weight, where 78% of individuals lost weight compares favourably with the results from other studies. However, it is recognised that this pilot study is very small and a larger study is required.

Other results from this study suggest that obesity management is complex and requires a participatory, holistic, person centred approach to intervention. It seems that looking at the whole person is pertinent to successful outcomes as it sometimes raises issues that may be missed in traditional approaches. Most PNs and individuals expressed their satisfaction with this approach.

Supporting materials, particularly the unique 'Weight Management Map', appear to be a key contributing factor to the success of the study. By looking at the whole it seemed to allow identification of the 'parts' and the links between them. Doing so, seemed relevant for action planning and goal setting, key components of making changes. Having this in written form was seen as advantageous by both PNs and individuals. It also appeared to help individuals participate in their care leading to self management practices.

The materials for PNs appeared to aid changes in practice, even for those who did not recruit for the study. All PNs expressed their need for obesity education and although most PNs were enthusiastic about the holistic approach, as it seemed to fit with their approach to nursing, for some the minimal educational input for the holistic approach may have compromised their ability to implement change. As a result it could have been more comfortable to apply familiar ways of working to this approach rather than embrace a totally new concept. Educational input, in particular from outreach visits, appeared to be very beneficial when implementing the holistic approach.

PNs who 'bought' into the 'holistic' concept seemed to work in greater partnership with individuals and have better outcomes. They also appeared to have support from their practices and have more control over their work load. For other PNs the work setting

may have compromised the opportunities to engage at a deeper level with individuals although some nurses may have avoided emotional involvement by simply giving advice.

The evidence from this study suggests the relevance of expanding practice in the area of weight management in primary care through taking a holistic approach. In the next and final chapter the, conclusions, limitations and recommendations of this study are discussed.

Chapter 8

Conclusions, limitations and recommendations

This final chapter begins by detailing the conclusions drawn from the research related to a holistic approach to weight management. The limitations and strengths of the research are then presented, followed by the implications and recommendations for education, practice and research. Finally, strategies to disseminate the research are proposed. Conclusions about the applicability of the conceptual framework for the holistic approach to weight management are drawn followed by conclusions about the feasibility of the approach to PNs in the context of primary care.

8.1 Conclusions

In order to ascertain if the aims and objectives, outlined in chapter 2, have been achieved they are now revisited. Once this has been established a brief examination is undertaken to compare weight outcomes in relation to other UK primary care studies.

8.1.1 Aims and objectives revisited

At the outset, the overall aim of the study was to develop and evaluate a holistic approach to obesity management for primary care nurses and obese individuals in their care. A two phase study was carried out with the initial exploratory phase providing data to inform the primary care intervention. The objectives of each phase are considered separately.

8.1.1.1 The objectives of the exploratory phase

a) Identify patterns of behaviour and explore how they impact on weight management

The relationship between weight beliefs, expectations, physical, social and emotional well-being and weight management was established. Their impact on weight management was achieved by retrospectively dividing the individuals into three groups by weight change. Fully achieving this objective may have been compromised by not collecting data on actual food intake due to efforts to avoid the 'diet culture'. However, that omission was rectified in the intervention phase by incorporating factual information from existing literature highlighted in the theoretical framework.

b) Ascertain the association of physical well-being and weight management

This objective provided evidence of the high level of co-morbid diseases suffered by those who are obese. Individuals identified a number of symptoms but in particular poor sleep, breathlessness and body pain which all impinged on their ability to be active. Physical activity levels differed between those who gained and lost weight. However, it was also highlighted that assessment of activity levels should include all types of inactivity as well as activity.

c) Explore the role of perceived social support on weight management

The perception of social support, particularly from friends and family was an important aspect of weight change. Individuals who had the greatest support lost most weight and were more likely to be active. However, for some who lost weight, the level of perceived support from their partner actually decreased. This may reflect that making changes can disturb the dynamics of a relationship.

- d) Detect the range of emotions experienced by obese individuals and the perceived impact of them on weight management*

Obese individuals often displayed negative feelings such as guilt, anger, loneliness and boredom, often related to anxiety and depression. Weight gain worsened these feelings but weight loss reduced them and also increased confidence and pride.

- e) Examine the beliefs and expectations of obese individuals with regard to weight management*

Most individuals, although indicating that controlling weight was not easy, recognised that they were the only ones who could control it and if they gained weight it was their own fault. In relation to weight change some individuals viewed their co-morbidities as limiting their control. Nearly all individuals believed that having support was important. Often the expectations of weight were unrealistic and created frustration.

8.1.1.2 Objectives of the intervention phase

- a) Develop a person centred approach for nurses and obese individuals to work within a mutually agreed partnership*

The results of the exploratory phase, which was guided by the theoretical framework, were shown to be relevant to the development of the new participatory, person centred holistic approach. The design of the materials encouraged both PNs and individuals to work in partnership on a broad range of issues affecting weight management.

b) Introduce and evaluate the approach for acceptability and utility

The introduction of the holistic approach into primary care was fraught with difficulties primarily due to the restricted time span. Most PNs felt that obesity management was part of their role and were looking for help in fulfilling that function. Accessing the education and support provided was difficult for some PNs due to internal constraints within the practice setting. The short recruitment time for the intervention phase reduced the number of individuals in the study and perhaps influenced the drop out rate.

Although the philosophy underpinning the holistic approach did not appear to be universally accepted, most PNs found it applicable to their practice. The materials provided a structure for practice and at the same time allowed flexibility in how individual PNs worked. The difficulty of acquiring in depth information from individuals within the constraints of traditional methods was often overcome using the holistic approach. However, some PNs appeared to find it difficult to use the materials in a broader way and applied traditional narrower approaches to intervention. The utility of the approach was generally viewed positively but the rigidity of the appointment system was regarded as restrictive in relation to overall outcomes.

c) Determine the level of individual satisfaction with the approach

Most individuals expressed their satisfaction with this approach. They appreciated the shift of emphasis away from the 'diet culture' with its negative connotations to a more positive perspective. Concerns were occasionally expressed about the awareness raised by the 'weight management map' but generally this awareness was used

positively. The majority of individuals were satisfied with both the materials and the approach to partnership working.

8.1.2 The applicability of the conceptual framework

This study highlighted the complexity of obesity management and the need to develop new interventions that were deemed holistic in nature. Identifying areas often examined separately in the research arena but given less prominence in a practice setting appeared to provide a constructive basis for a conceptual framework to aid the development of a holistic approach to weight management as shown in **Figure 8.1**

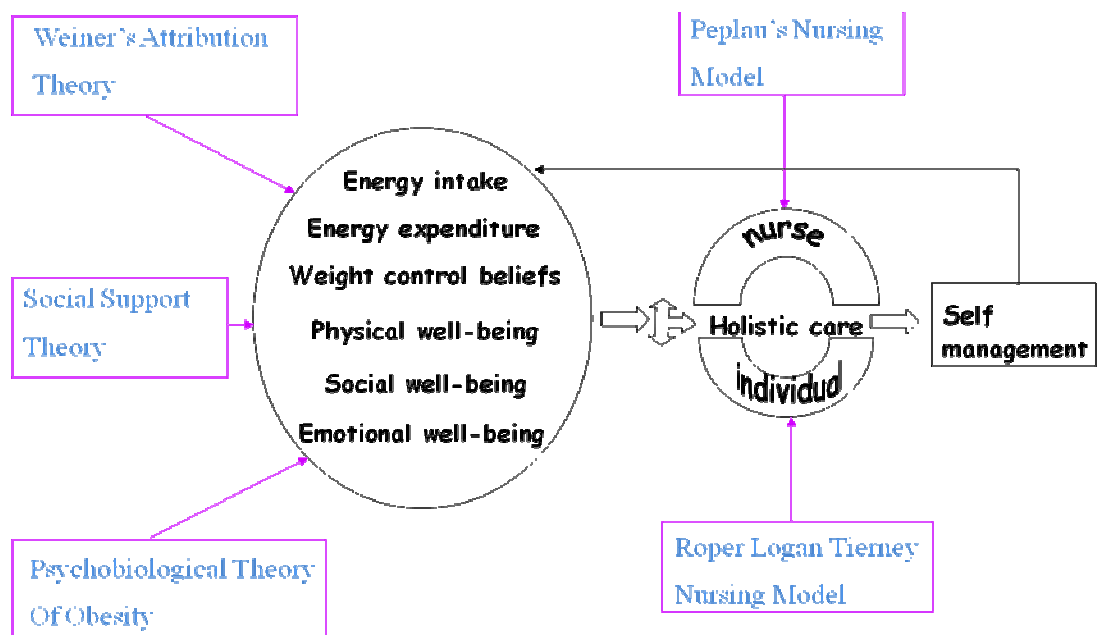


Figure 2.1 Conceptual framework for intervention and outcome

The conceptual framework used theories from different disciplines, namely medicine, psychology, sociology and nursing to inform the research and, although this was at times difficult to 'hold together', it was helpful in guiding and informing the research. It raised the view of how physical, social and emotional aspects in conjunction with

beliefs about weight management may be related. However, additional research on a larger scale is required to confirm these results. A more difficult aspect of the conceptual framework was deciding how to transfer the knowledge into practice, therefore more discussion of the relevance of the two nursing models seems relevant.

The two nursing models of Peplau (1988) and Roper, Logan and Tierney (RLT) (2000) appeared appropriate to combine all these concepts to provide a structure to guide practice for a holistic weight management intervention. Peplau (1988) appeared particularly relevant but Roper, Logan and Tierney (RLT) (2000) may be more controversial. As indicated before, their use was heuristic (Wimpenny 2002).

RLT (2000) provide the structure to guide the identification of the influences on activities of living by incorporating physical, social and emotional factors while Peplau's therapeutic, goal-directed, interpersonal participatory approach provided the vehicle to implement such change. However, the intention to produce a person-centred approach may have been compromised had the activities of living listed by RLT been used as a checklist type (Reed and Robins 1991). However, at one practice the extended example map, intended for nurses, was used as a checklist resulting in poor outcomes.

The application of Peplau's theory, which also perceived individuals in a holistic way, provided the means through which PNs could work in partnership with individuals. There were many examples of the relevance of Peplau to weight management where PNs occupied roles of stranger, counsellor, resource person, surrogate and teacher. Sometimes it proved difficult to move on from the role of stranger resulting in the termination of the relationship, perhaps reflecting the challenge of establishing rapport

which requires good communication skills. Peplau (1988) also maintained that cultural stereotyping influences the ability to be empathic, one of the requirements for good communication skills. As communication skills are central to Peplau's model, implementation of the holistic approach may not have been easy for some PNs. The inability to provide greater support to enhance communication skills was a limitation of this study.

In conclusion, it appears that the conceptual framework was a useful guide for implementing a holistic person centred approach to weight management. The cyclical nature of the conceptual framework appeared to reflect the nature of both behaviour change and obesity management. However, further work is required to refine the conceptual framework for further research in different contexts.

8.1.3 The effectiveness of the holistic approach for PNs

In terms of weight outcomes the holistic approach was effective as 78% of individuals lost weight. It may be that the way in which the approach is implemented makes a difference as of those who gained weight all but two came from the same practice. Practice nurses in primary care appear well placed to implement strategies to address obesity management. However, although they view obesity management as part of their role they feel unsupported both educationally and managerially in the practice setting. Nonetheless, PNs have an important role to play in helping individuals towards better outcomes. A number of key elements related to achieving better outcomes emerged from this study. Firstly, the way PNs interacted with individuals was important. It appears that the manner in which weight management is approached makes a difference to the person. A non judgemental approach facilitated by the use of the 'weight management map' helped break down some barriers. Once these barriers dissipated a

partnership between PN and the individual could develop more easily. One of the difficulties for PNs in developing a partnership was the practice of 'advice giving'. This sometimes hindered the process of getting to know individuals more deeply in terms of addressing the underlying causes of weight difficulties.

PNs who recognised, that obesity management was multifaceted tended to look on obesity management more holistically. That is, were able to acknowledge and work with the interaction between energy intake, energy expenditure, physical, social and emotional well-being, weight control beliefs and weight management.

However, PNs agreed that there was a need to provide longer appointment times, that is, more than the usual 10 minute appointment. Improved results were obtained when, in spite of the confines of the GMS contract, PNs were able to provide consultations of length and frequency according to individual needs. Nonetheless, it seems that although increasing the length of appointment times would be beneficial, intervention may focus on advice giving and not be holistic or person-centred. The service implications of enhanced appointment times and health improvements, requires further economic analysis and research.

8.1.4 Support for implementing the holistic approach

The context in which nurses practised had restrictions for them all when it came to professional development. The lack of education may have compromised the outcomes and the way in which some PNs implemented the holistic approach. This conclusion was reached as those who were able to have most contact with the researcher and used all the educational materials supplied and suggested, had the best outcomes. Outreach

visits were welcomed by the PNs but also sharing a consultation with them had the most benefit. It gave the PNs more confidence and the outcome for individuals improved.

Had ‘champions’ not emerged through the recruitment process this study would have been seriously compromised. These champions were influential in facilitating the study by providing a link to the PNs. Nonetheless, implementing the holistic approach was not easily achieved as the time available for education was very limited and further restricted by the geographical spread of the PNs. Although these approaches were beneficial further development should perhaps include a one day workshop. Other means of education should also be explored and evaluated.

8.2 The utility of the materials provided for the holistic approach

The materials used in the consultations were viewed by both PNs and individuals as relevant to practice.

8.2.1 Booklet for individuals

In general, the booklet ‘My Personal Approach to Weight Management’ appeared useful in providing a structure to guide weight management. In particular, the unique ‘Weight Management Map’ played a key role.

8.2.1 1 Weight Management Map

The ‘Weight Management Map’ appeared central to the holistic approach in a number of ways. It was holistic in that it helped focus the minds of some individuals on physical, social and emotional aspects and how they managed their weight. Providing

space to document such thoughts on paper, aided by the mind map concept, was clearly a useful exercise. Furthermore, the 'Weight Management Map' also helped individuals become aware of links between physical, social and emotional influences on their weight management thereby raising self-awareness. This sometimes raised issues, for example, being a good role model and bereavement issues that may not usually be identified as affecting weight management. Identifying these individualised issues enabled relevant action plans to be formulated reflecting the importance of taking a holistic, person centred approach. Therefore, the outcomes of this pilot study suggest that the flexible structure of the 'Weight Management Map' appears to be a useful tool but requires further research.

The 'Weight Management Map' laid the foundation to encourage individuals, to be proactive in their care and take ownership of their weight management had some success. In addition to aiding some individuals in self-reflection and self-awareness, the materials, in conjunction with nurse consultations, encouraged them to take responsibility for self-management. Many PNs felt that the individual booklets gave weight management credence, however, the booklets would benefit from further refinement and research.

The mind map design of the 'Weight Management Map' was useful for both nurse and individual by challenging individuals in a non judgemental way. However, trying to continue the mind map format for the goal setting section called 'My Action Plan' was less successful and an obvious limitation. As a result, 'My Action Plan' was redesigned at the end of this study (APPENDIX 18). However, this still requires further development.

8.2.1.2 PN Booklet and practical materials

The booklet for PNs was well received and aided changes in practice even for those PNs who did not recruit individuals. It appeared to help some PNs view obesity more holistically. In particular, the inclusion of case studies was popular as they provided real scenarios to which PNs could relate. Further development of the booklets is required, particularly taking into account enhancement of the visual aspects of printed materials.

The box of practical tools (APPENDIX 9) to aid practice, such as height and weight conversion charts, were welcomed by PNs. Although similar tools do exist, they are limited in scope. As the general population becomes heavier, there will be a greater need for more relevant tools in the future. Therefore, practical tools for intervention are required and need further development.

Applying the conceptual framework to the booklets for individuals to use in practice was no easy task. The difficulties were in bringing all the strands together and applying them in such a way as to maintain the holistic view but still produce relevant materials, which were straightforward to use in practice.

8.3 Overall conclusions

This pilot study of the holistic approach to weight management was effective in terms of weight loss over a three month period for 78% of individuals recruited. However, further work is required. In practice the conceptual framework allowed the complexities of obesity to be addressed while the underlying philosophy of holism provided a channel for the development of the nurse/individual partnership. This

combined the science with the art of nursing. The holistic approach, unlike the paternalistic approach, does appear to promote behaviour change, self-management and facilitate wellbeing. Since a number of nurses wanted to continue using the holistic approach to weight management, after completion of the study, it was concluded that this approach seemed to fulfil their future requirements. It should therefore, following further refinement and research be recommended as a way forward in obesity management where the individual, and where appropriate, in conjunction with the nurse, explores the cause behind the weight gain.

This study achieved the aims and objectives initially set out, and has demonstrated that the holistic, person centred approach to weight management provides an evidence-based vehicle for both the art and science of nursing. Furthermore, the intervention fulfills the recommendations of the NICE (2006) guideline in that it:

- Helps individuals identify barriers to good weight management
- Includes behaviour change strategies
- Provides written goals and actions

The intervention also incorporates the Department of Health (2006) “Self Care” recommendations in that it:

- Puts ‘patients’ at the centre
- fosters partnership working
- Encourages self-management
- Encourages greater confidence and a sense of control
- Is multicomponent

8.4 Methodological issues and limitations

There were a number of limitations in both the exploratory and intervention phases of this study. Some of these limitations may have been avoided had there been fewer financial and time constraints imposed on the study.

8.4.1 *Limitations of the exploratory phase*

a) The participants in the exploratory and intervention phases differed in context.

The exploratory phase took place at an outpatient hospital clinic while the intervention phase was implemented in primary care. These differing contexts are a limitation in terms of relevance of the results from the exploratory phase to those in the intervention phase. However, this limitation was lessened by the fact that both samples had experience of primary care. Furthermore, they were similar in demographic and co-morbidity detail reflecting that PNs in the areas where the research was carried out have no onward referral process to a specialist clinic and have to deal with the obesity epidemic themselves.

b) Another limitation of data collection was that the researcher was part of the multidisciplinary team where this phase was carried out. However, no intervention was undertaken by the researcher and contact with individuals was minimised by providing self complete questionnaires.

c) Data analysis was compromised by having to omit visit two data from the three visits over six months. This information would have given insight into differences between visits one and two, and two and three thus providing more robust data on the expectations of weight loss with weight change. As life experiences affect

weight management on a continuum, this limitations meant that these outcomes could not be observed in the exploratory phase.

d) Statistical significance of the results was compromised by the small numbers of individuals recruited for the exploratory phase

8.4.2 Limitations of the intervention phase

a) The literature review could have been carried out more systematically but the key areas were reviewed and reflect the complexity of weight management.

b) Due to time restrictions individuals were in the study for a very limited duration. Since weight change varies over time and the holistic approach is intended to produce more permanent life changes a much longer study would have given more validity to the findings. A picture of longer term outcomes was therefore unobtainable.

c) Due to the size of the study no distinction was made between different nurses, for example, between a practice nurse and nurse practitioner. Therefore, the level of expertise was not taken into account. As the type of previous nurse education was found to impact on the PN approach to weight management the degree to which the educational content of the holistic approach influenced them could not be definitively ascertained.

d) Apart from field notes detailing the occasional introduction of the researcher to a general practitioner, little was gathered on their perspective of obesity management

in practice. This limitation compromised the data on the contextual influences on PNs ability to implement obesity management.

e) Data collected from individuals was self reported and from PNs through interviews. This raises questions about reliability (Miller 2001; Polit and Beck 2006). Although other means of data collection may have reduced this risk, such as repeat interviews with PNs the time constraints prohibited this. The addition of interviews with individuals would have provided far greater insight into their perspective of the intervention but again time and resource constraints prohibited this.

f) Although the researcher was aware of ‘bracketing’ (Miles and Huberman 1994; Parahoo 2006) it was inevitable that the research process including data analysis was influenced by the researcher in some way. This influence was therefore a further limitation .

g) Due to the overall approach used it can be difficult to separate out the various elements contributing to the outcomes. The researcher, educational approach and materials were combined within the research approach so no attempt was made to separate and assess. It could be argued that doing so may have resulted in losing some of the fundamental nature of the intervention (Hawe et al. 2004). Nevertheless, the question remains of the extent to which the ‘researcher’ had influence over the outcomes achieved. Although the researcher was distanced from the intervention in that PNs carried out the implementation and there were hard outcomes in terms of weight loss, the data on the utility of the approach may have

been influenced by the relationship between the researcher and PNs. Therefore, this may have been a limitation.

8.5 Implications and recommendations for practice

Nurses identified the lack of structured approaches for obesity management in practice and were seeking new ways forward. The holistic approach to weight management has implications for nursing practice. It would involve a change of approach for all nurses, some more than others, depending on their world view. Understanding the influences of physical, social and emotional factors on weight management may help PNs to view holistic care as being advantageous. However, those PNs who are used to telling individuals ‘what to do’ may find it difficult to relinquish control and involve individuals in decision-making through partnership working. Therefore, professional and practice development is necessary for PNs to enable them to develop both knowledge about obesity and skills to practice the holistic approach to weight management.

The nature of the holistic approach means that nurses have to develop a broader view of obesity and how it affects individuals. Nurses also need an awareness of their own reactions to individuals with obesity and be able to address any prejudices they may harbour. Furthermore, taking a person centred approach demands that communication skills are a key element of management, particularly in addressing emotional issues. For practice, the implication is that nurses need, not only the skills to deal with emotional issues, but also a willingness to do so.

The novel holistic approach to weight management showed promise regardless of the restrictions on practice. If more time was allowed for initial consultations it may prove more beneficial and lead to improved outcomes in the long term. Further research on a larger scale which includes a health economic assessment as well as long term outcomes is required to ascertain the efficacy of the holistic approach.

8.6 Recommendations for continuing professional development for nurses

- Nurse education for obesity management requires development from a nursing perspective
- Beliefs and attitudes about obesity and those who are obese should be addressed in nurse education
- Appropriate materials incorporating ideas of holism should be made available
- The provision of shared educational materials for nurses and obese individuals to enhance partnership working
- Person centred materials to encourage self-management practices from the perspective of the individual
- The provision of nurse education at different levels to suit various needs
- The development of an accredited diploma comparable to those for other chronic diseases
- A variety of modes of delivery, such as outreach visits, peer coaching and e-learning
- The development of centres of excellence within the primary care setting to act as a resource for other general practices in the area

8.7 Recommendations for further research

- Following refinement, the conceptual framework should be further researched for applicability to obesity management
- Emotional issues would benefit from further exploration of their relevance in weight management
- The utility of the materials require further exploration, in particular the unique weight management map.
- Further research is required to confirm or refute the current findings of the holistic approach to weight management by undertaking larger trials
- Including interviews with participating individuals in future research would provide a greater depth of feedback on the relevance the holistic approach to weight management
- The effect of appointment times and flexibility on outcomes when using the holistic approach could be explored
- There is a need to ascertain the suitability of the holistic approach for different groups, for example by age, gender and various levels of obesity. Further areas of research interest would be the applicability of the approach for those who have different levels of literacy skills and various ethnic groups
- The holistic approach could be researched with different professional groups in various contexts, for example, physiotherapists and community pharmacists
- Research should be undertaken into different ways of providing educational support for obesity management for nurses in primary care

8.8 Dissemination Strategies

Finally, it is proposed to disseminate the findings of this research by:

- publishing articles in nursing journals
- presenting conference papers
- provide a summary of the research to colleagues
- collaborate with other researchers to develop obesity strategies
- collaborate with educational institutions to develop obesity management education programmes and e-learning training materials

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Appendix 1

**Exploratory phase questionnaire exploring the association between
feelings and weight management**

Questionnaire - Visit 1

Measurement

Weight Height BMI Blood Pressure

Body fat % Waist circumference Alcohol Smoking

Obesity Treatment

☐ 600 kcal deficit ☐ PSMF ☐ Xenical ☐ Surgery

☐ sibutramine ☐ D1 drug trial

Co-morbidities

- | | | |
|--|--|---|
| <input type="checkbox"/> Type II diabetes/impaired glucose tolerance | <input type="checkbox"/> CHD | |
| <input type="checkbox"/> hypertension | <input type="checkbox"/> dyslipidaemia | <input type="checkbox"/> sleep apnoea |
| <input type="checkbox"/> peripheral oedema | <input type="checkbox"/> stroke | <input type="checkbox"/> osteoarthritis |
| <input type="checkbox"/> gallbladder disease | <input type="checkbox"/> hypothyroidism | <input type="checkbox"/> PCOS |
| <input type="checkbox"/> lower extremity venous stasis | <input type="checkbox"/> other (specify) | |

ID Number ☐ ☐ ☐

The first few questions ask for general information about you. The questions following these ask when your weight problem started and if any of your family have problems with their weight. They also ask about physical symptoms, how active you are, and what support you have. You are then asked about your feelings and beliefs.

1. What sex are you? ☐ male ☐ female

2. How old are you? ☐ below 30
☐ 30-39
☐ 40-49
☐ 50-60
☐ over 60

3. Please tick the box that applies to you. ☐ married
☐ living with partner
☐ divorced/seperated
☐ widowed
☐ never married

4. Do you live alone? ☐ Yes ☐ No

If you answered 'No' to this question, how many other people, excluding yourself, live with you?
Please insert a number in each box.

☐ adults
☐ children

5. Are you in full-time or part-time work?

☐ yes ☐ no

If yes, what is your occupation?

ID Number ☐ ☐ ☐

6. Weight history

(a) When did your weight problems begin? (Please tick ONE box)

☐ childhood ☐ adolescence ☐ adulthood

Did they begin with any of the following? (Please tick ANY that apply)

☐ leaving school ☐ leaving home ☐ getting married

☐ having a baby ☐ changing jobs ☐ retirement

☐ menopause ☐ other (please specify)

(b) Are other members of your family overweight? ☐ Yes ☐ No

If you answered 'Yes' please tick ALL the boxes that apply.

Partner ☐
siblings ☐ brother ☐ sister
parents ☐ father ☐ mother
grandparents ☐ father's side ☐ mother's side
children ☐ sons ☐ daughters

ID Number ☐ ☐ ☐

7. Symptoms

Have you had any of the following symptoms during the last THREE MONTHS? Please answer each one. On a scale of 1 to 10 (1 being very rarely and 10 being most of the time) circle the number which seems closest to how often you experienced these symptoms. If you have not experienced a symptom please tick the box beside it.

Dizziness
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Diarrhoea
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Constipation
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Abdominal bloating
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Hunger
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Food cravings
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Sweating
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Body Pain
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Skin problems
(eg redness in skin creases; psoriasis)
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Bladder problems
(eg leakage)
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Shortness of breath
(eg asthma; going up stairs)
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Poor sleep
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Heartburn
Very rarely 1 2 3 4 5 6 7 8 9 10 ☐ NA
most of the time

Other (please specify)
.....
Very rarely 1 2 3 4 5 6 7 8 9 10 most of the time

Other (please specify)
.....
Very rarely 1 2 3 4 5 6 7 8 9 10 most of the time

ID Number ☐ ☐ ☐

8. Everyday Activity

- a) Have you had difficulty doing any of the following during the last THREE MONTHS? (Please tick ONE box for EACH item)

	Never	Rarely	Sometimes	Often	Always
Walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going up or down stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bending or stooping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Getting in or out of the bath	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Getting dressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Household chores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- b) Please indicate how often during the last THREE MONTHS you have done each of the following. (Please tick ONE box for EACH item)

	Never	Rarely	Sometimes	Often	Always
Walk to places (eg the shops)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take the lift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use the stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Go by car/bus/taxi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- c) How often during the last THREE MONTHS have you taken part in the following activities? (Please tick ONE box for EACH item)

	Never	Rarely	Sometimes	Often	Always
Speak to friends/family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Go out with friends/family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have friends/family to your house	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Go out on your own (eg to shops, for a walk)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ID Number ☐ ☐ ☐

Leisure Activity

d) How many hours, on average, do you spend on the following LEISURE activities in a WEEK? Please tick ONE box for EACH activity.

	None	Hour Less than 1	Hour 1-4	Hour 5-10	Hour 11-20	Hour 21-40	Hour over 40
Watching TV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dancing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handcrafts (eg knitting)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gardening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DIY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to watch football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to the gym	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ID Number ☐ ☐ ☐

Support

9. How much support do you feel you have from others for your weight management? Look at the following categories and answer each one. On a scale of 1-10 (1 being very unsupportive and 10 being very supportive) circle the number which seems closest to the support you have received in the last THREE MONTHS or tick the box for those that do not apply to you.

Example 1: If you feel your partner gives you some encouragement but could be more supportive

husband/wife/partner

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

Example 2: If you feel your partner always makes it very difficult for you to manage your weight

husband/wife/partner

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

Example 3: If you do not have a husband/wife/partner

husband/wife/partner

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☒ NA

Family

husband/wife/partner

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

children

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

parents

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

other household members

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

others (please specify)

.....

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

Friends

close friends

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

acquaintances

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

others (please specify)

.....

1 2 3 4 5 6 7 8 9 10
very unsupportive very supportive

☐ NA

ID Number ☐ ☐ ☐

Work

supervisor/manager	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
colleagues	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
others (please specify)	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA

Health professionals

General Practitioner	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
Specialist doctors	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
Nurses	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
Dietitians	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
others (please specify)	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA

General contacts

clothes shop assistants	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
leisure centre staff	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
school/college staff	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA
others (please specify)	1 2 3 4 5 6 7 8 9 10 very unsupportive very supportive	<input type="checkbox"/> NA

Please add any comments you have about the support or lack of support you have experienced in the last three months.

.....

.....

.....

ID Number ☐ ☐ ☐

Feelings

10. This question asks general feelings about yourself, not only those related to weight management.

On a scale of 1 to 10 (1 being very rarely and 10 being most of the time) please circle the appropriate number to indicate how often, during the last THREE MONTHS, you have experienced the following feelings.

Guilt	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Pride	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Anger	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Boredom	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Being loved	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Loneliness	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Confidence	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Shyness	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time
Other feelings (please specify)	1 2 3 4 5 6 7 8 9 10	Very rarely	most of the time

Comments.....
.....
.....

ID Number

Beliefs

11. What are your beliefs about your weight control? (Please tick ONE box for EACH item). Please indicate whether or not you agree/disagree with the following.

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Managing my weight is totally outwith my control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If I lose weight it is just by good luck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am the only one who can control my weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My weight I hereditied so I can do nothing about it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is my own fault if I put on weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The support of others in helping me with my weight management is important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments.....

12. How satisfied are you with the appearance of your body? Please answer each of the following.
 On a scale of 1 to 10 (1 being very satisfied and 10 being very dissatisfied) circle the number nearest to how you feel about your body.

Bust/chest	1 2 3 4 5 6 7 8 9 10 Very satisfied Very dissatisfied
Stomach	1 2 3 4 5 6 7 8 9 10 Very satisfied Very dissatisfied
Thighs	1 2 3 4 5 6 7 8 9 10 Very satisfied Very dissatisfied
Buttocks	1 2 3 4 5 6 7 8 9 10 Very satisfied Very dissatisfied
Other (Please specify)	1 2 3 4 5 6 7 8 9 10 Very satisfied Very dissatisfied

Comments.....

ID Number ☐ ☐ ☐

13. What change, if any, do you think there should be in your weight during each WEEK? Please tick the ONE BOX nearest to what you think it SHOULD be.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gain more than 5lbs	Gain 3-5lbs	Gain 1-2lbs	Stay the same	Lose 1-2lbs	Lose 3-5lbs	Lose more than 5lbs

What change, if any, do you think there will be in your weight during each WEEK? Please tick the ONE BOX nearest to what you EXPECT it to be.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gain more than 5lbs	Gain 3-5lbs	Gain 1-2lbs	Stay the same	Lose 1-2lbs	Lose 3-5lbs	Lose more than 5lbs

Comments.....

.....

.....

ID Number ☐ ☐ ☐

This page contained questions 1 to 7 of the HADS questionnaire

This page contained questions 8 to 14 of the HADS questionnaire

Thank you for taking the time to participate

HADS RP Snaith and AS Zigmond, 1983,1992,1994. Adapted and reproduced by permission of the Publishers, NFER-NELSON, 2 Oxford Road East, Windsor, Berkshire SL4 1DF, UK. All rights reserved. Record form items originally published in *ACTA Psychiatrica Scandinavica*, 67, 361-70, Munksgaard International Publishers Ltd, Copenhagen, 1983.

Appendix 2

Permission letter for use of the HADS

**This page contained a letter giving consent for the HADS
questionnaire to be used in the research project**

Appendix 3

Exploratory phase letter of invitation to individuals

Appendix 4

Content list of box of materials

Box Contents List

5	Patient Information Sheets
5	Patient Consent Forms
5	My Personal Approach to Weight Management booklets
5	Questionnaires for research subjects
5	Addressed envelopes
1	A Holistic Approach to Weight Management booklet
1	Weight Management Map (examples)
1	Weight Management Map – Case study 1
1	Weight Management Map – Case study 2
2	My Action Map
1	A Holistic Approach to Weight Management laminated protocol
1	Laminated height/weight conversion chart
1	Laminated 10% weight loss chart (metric)
1	Laminated 10% weight loss chart (imperial)
1	Background Information form
1	Measuring Tape
1	Large cuff

Appendix 5

Recruitment flier to practice nurses for the intervention phase

Appendix 6

Background questionnaire for nurses in the intervention phase

Appendix 7

Evaluation questionnaire for ‘My Personal Approach to Weight Management’

Appendix 8

**Sheet for recording physical parameters of individuals
in the intervention phase**

Appendix 9

Charts provided in box of materials for the intervention phase

Weight conversion chart

st lb	kg	st lb	kg	st lb	kg	st lb	kg	st lb	kg	st lb	kg	st lb	kg	st lb	kg	st lb	kg
9 7	60.3	11 7	73.0	13 7	85.7	15 7	98.4	17 7	111.1	19 7	123.6	21 7	136.8	23 7	149.5	25 7	162.3
9 8	60.8	11 8	73.5	13 8	86.2	15 8	98.9	17 8	111.6	19 8	124.3	21 8	137.3	23 8	150.0	25 8	162.7
9 9	61.2	11 9	73.9	13 9	86.6	15 9	99.3	17 9	112.0	19 9	124.7	21 9	137.7	23 9	150.4	25 9	163.2
9 10	61.7	11 10	74.4	13 10	87.1	15 10	99.8	17 10	112.5	19 10	125.2	21 10	138.2	23 10	150.9	25 10	163.6
9 11	62.1	11 11	74.8	13 11	87.5	15 11	100.2	17 11	112.9	19 11	125.6	21 11	138.6	23 11	151.4	25 11	164.1
9 12	62.6	11 12	75.3	13 12	88.0	15 12	100.7	17 12	113.4	19 12	126.1	21 12	139.1	23 12	151.8	25 12	164.5
9 13	63.0	11 13	75.8	13 13	88.5	15 13	101.2	17 13	113.9	19 13	126.6	21 13	139.5	23 13	152.3	25 13	165.0
10 0	63.5	12 0	76.2	14 0	88.9	16 0	101.6	18 0	114.3	20 0	127.0	22 0	140.0	24 0	152.7	26 0	165.4
10 1	64.0	12 1	76.7	14 1	89.4	16 1	102.1	18 1	114.8	20 1	127.7	22 1	140.4	24 1	153.2	26 1	165.9
10 2	64.4	12 2	77.1	14 2	89.8	16 2	102.5	18 2	115.2	20 2	128.2	22 2	140.9	24 2	153.6	26 2	166.4
10 3	64.9	12 3	77.6	14 3	90.3	16 3	103.0	18 3	115.7	20 3	128.6	22 3	141.4	24 3	154.1	26 3	166.8
10 4	65.3	12 4	78.0	14 4	90.7	16 4	103.4	18 4	116.1	20 4	129.0	22 4	141.8	24 4	154.5	26 4	167.3
10 5	65.8	12 5	78.5	14 5	91.2	16 5	103.9	18 5	116.6	20 5	129.5	22 5	142.3	24 5	155.0	26 5	167.7
10 6	66.2	12 6	78.9	14 6	91.6	16 6	104.3	18 6	117.0	20 6	130.0	22 6	142.7	24 6	155.4	26 6	168.2
10 7	66.7	12 7	79.4	14 7	92.1	16 7	104.8	18 7	117.5	20 7	130.4	22 7	143.2	24 7	155.9	26 7	168.6
10 8	67.1	12 8	79.8	14 8	92.5	16 8	105.2	18 8	117.9	20 8	130.9	22 8	143.6	24 8	156.4	26 8	169.1
10 9	67.6	12 9	80.1	14 9	93.0	16 9	105.7	18 9	118.4	20 9	131.4	22 9	144.1	24 9	156.8	26 9	169.5
10 10	68.0	12 10	80.7	14 10	93.4	16 10	106.1	18 10	118.8	20 10	131.8	22 10	144.5	24 10	157.3	26 10	170.0
10 11	68.5	12 11	81.2	14 11	93.9	16 11	106.6	18 11	119.3	20 11	132.3	22 11	145.0	24 11	157.7	26 11	170.4
10 12	68.9	12 12	81.6	14 12	94.3	16 12	107.0	18 12	119.7	20 12	132.7	22 12	145.4	24 12	158.2	26 12	170.9
10 13	69.4	12 13	82.1	14 13	94.8	16 13	107.5	18 13	120.2	20 13	133.2	22 13	145.9	24 13	158.6	26 13	171.4
11 0	69.9	13 0	82.6	15 0	95.2	17 0	107.9	19 0	120.7	21 0	133.6	23 0	146.4	25 0	159.1	27 0	171.8
11 1	70.3	13 1	83.0	15 1	95.7	17 1	108.4	19 1	121.1	21 1	134.1	23 1	146.8	25 1	159.5	27 1	172.3
11 2	70.8	13 2	83.5	15 2	96.2	17 2	108.9	19 2	121.6	21 2	134.5	23 2	147.3	25 2	160.0	27 2	172.7
11 3	71.2	13 3	83.9	15 3	96.6	17 3	109.3	19 3	122.0	21 3	135.0	23 3	147.7	25 3	160.4	27 3	173.2
11 4	71.7	13 4	84.4	15 4	97.0	17 4	109.8	19 4	122.5	21 4	135.4	23 4	148.2	25 4	160.9	27 4	173.6
11 5	72.2	13 5	84.8	15 5	97.5	17 5	110.2	19 5	122.9	21 5	135.9	23 5	148.6	25 5	161.4	27 5	174.1
11 6	72.6	13 6	85.3	15 6	98.0	17 6	110.7	19 6	123.4	21 6	136.4	23 6	149.0	25 6	161.8	27 6	174.5

Height conversion chart

ft	in	cm	ft	in	cm	ft	in	cm	ft	in	cm
4	6¼	137.8	5	0¼	153.0	5	6¼	168.3	6	0¼	183.5
4	6½	138.4	5	0½	153.7	5	6½	168.9	6	0½	184.2
4	6¾	139.1	5	0¾	154.3	5	6¾	169.5	6	0¾	184.8
4	7	139.7	5	1	154.9	5	7	170.2	6	1	185.4
4	7¼	140.3	5	1¼	155.6	5	7¼	170.8	6	1¼	186.1
4	7½	141.0	5	1½	156.2	5	7½	171.4	6	1½	186.7
4	7¾	141.6	5	1¾	156.8	5	7¾	172.1	6	1¾	187.3
4	8	142.2	5	2	157.5	5	8	172.7	6	2	188.0
4	8¼	142.9	5	2¼	158.1	5	8¼	173.4	6	2¼	188.6
4	8½	143.5	5	2½	158.8	5	8½	174.0	6	2½	189.2
4	8¾	144.1	5	2¾	159.4	5	8¾	174.6	6	2¾	189.9
4	9	144.8	5	3	160.0	5	9	175.3	6	3	190.5
4	9¼	145.4	5	3¼	160.7	5	9¼	175.9	6	3¼	191.1
4	9½	146.0	5	3½	161.3	5	9½	176.5	6	3½	191.8
4	9¾	146.7	5	3¾	161.9	5	9¾	177.2	6	3¾	192.4
4	10	147.3	5	4	162.6	5	10	177.8	6	4	193.0
4	10¼	148.0	5	4¼	163.2	5	10¼	178.4	6	4¼	193.7
4	10½	148.6	5	4½	163.8	5	10½	179.1	6	4½	194.3
4	10¾	149.2	5	4¾	164.5	5	10¾	179.7	6	4¾	194.9
4	11	149.9	5	5	165.1	5	11	180.3	6	5	195.6
4	11¼	150.5	5	5¼	165.7	5	11¼	181.0	6	5¼	196.2
4	11½	151.1	5	5½	166.4	5	11½	181.6	6	5½	196.8
4	11¾	151.8	5	5¾	167.0	5	11¾	182.2	6	5¾	197.5
5	0	152.4	5	6	167.6	6	0	182.9	6	6	198.1
									7	0	213.4

(Imperial)

Start Weight		10% loss	Goal Weight		Start Weight		10% loss	Goal Weight		Start Weight		10% loss	Goal Weight		Start Weight		10% loss	Goal Weight		Start Weight		10% loss	Goal Weight	
st	lb	lbs	st	lb	st	lb	lbs	st	lb	st	lb	lbs	St	lb	st	lb	lbs	st	lb	st	lb	lbs	st	lb
10	0	14	9	0	12	0	17	10	11	14	0	20	12	8	16	0	22	14	6	18	0	25	16	3
10	1	14	9	1	12	1	17	10	12	14	1	20	12	9	16	1	23	14	6	18	1	25	16	4
10	2	14	9	2	12	2	17	10	13	14	2	20	12	10	16	2	23	14	7	18	2	25	16	5
10	3	14	9	3	12	3	17	11	0	14	3	20	12	11	16	3	23	14	8	18	3	26	16	5
10	4	14	9	4	12	4	17	11	1	14	4	20	12	12	16	4	23	14	9	18	4	26	16	6
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10	6	15	9	5	12	6	17	11	3	14	6	20	13	0	16	6	23	14	11	18	6	26	16	8
10	7	15	9	6	12	7	17	11	4	14	7	20	13	1	16	7	23	14	12	18	7	26	16	9
10	8	15	9	7	12	8	18	11	4	14	8	20	13	2	16	8	23	14	13	18	8	26	16	10
10	9	15	9	8	12	9	18	11	5	14	9	20	13	3	16	9	23	15	0	18	9	26	16	11
10	10	15	9	9	12	10	18	11	6	14	10	21	13	3	16	10	23	15	1	18	10	26	16	12
10	11	15	9	10	12	11	18	11	7	14	11	21	13	4	16	11	23	15	2	18	11	26	16	13
10	12	15	9	11	12	12	18	11	8	14	12	21	13	5	16	12	24	15	2	18	12	26	17	0
10	13	15	9	12	12	13	18	11	9	14	13	21	13	6	16	13	24	15	3	18	13	27	17	0
11	0	15	9	13	13	0	18	11	10	15	0	21	13	7	17	0	24	15	4	19	0	27	17	1
11	1	15	10	0	13	1	18	11	11	15	1	21	13	8	17	1	24	15	5	19	1	27	17	2
11	2	16	10	0	13	2	18	11	12	15	2	21	13	9	17	2	24	15	6	19	2	27	17	3
11	3	16	10	1	13	3	18	11	13	15	3	21	13	10	17	3	24	15	7	19	3	27	17	4
11	4	16	10	2	13	4	19	11	13	15	4	21	13	11	17	4	24	15	8	19	4	27	17	5
11	5	16	10	3	13	5	19	12	0	15	5	21	13	12	17	5	24	15	9	19	5	27	17	6
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11	8	16	10	6	13	8	19	12	3	15	8	22	14	0	17	8	25	15	11	19	8	27	17	9
11	9	16	10	7	13	9	19	12	4	15	9	22	14	1	17	9	25	15	12	19	9	28	17	9
11	10	16	10	8	13	10	19	12	5	15	10	22	14	2	17	10	25	15	13	19	10	28	17	10
11	11	16	10	9	13	11	19	12	6	15	11	22	14	3	17	11	25	16	0	19	11	28	17	11
11	12	17	10	9	13	12	19	12	7	15	12	22	14	4	17	12	25	16	1	19	12	28	17	12
11	13	17	10	10	13	13	19	12	8	15	13	22	14	5	17	13	25	16	2	19	13	28	17	13

10% Weight loss Chart (Imperial)

Start Weight		10% loss	Goal Weight		Start Weight		10% loss	Goal Weight		Start Weight		10% loss	Goal Weight	
st	lb	lbs	st	lb	st	lb	lbs	st	lb	st	lb	lbs	st	lb
22	0	31	19	11	24	0	33	21	9	26	0	36	23	6
22	1	31	19	12	24	1	34	21	9	26	1	36	23	7
22	2	31	19	13	24	2	34	21	10	26	2	36	23	8
22	3	31	20	0	24	3	34	21	11	26	3	37	23	8
22	4	31	20	1	24	4	34	21	12	26	4	37	23	9
22	5	31	20	2	24	5	34	21	13	26	5	37	23	10
22	6	31	20	3	24	6	34	22	0	26	6	37	23	11
22	7	31	20	4	24	7	34	22	1	26	7	37	23	12
22	8	31	20	5	24	8	34	22	2	26	8	37	23	13
22	9	32	20	5	24	9	34	22	3	26	9	37	24	0
22	10	32	20	6	24	10	34	22	4	26	10	37	24	1
22	11	32	20	7	24	11	35	22	4	26	11	37	24	2
22	12	32	20	8	24	12	35	22	5	26	12	37	24	3
22	13	32	20	9	24	13	35	22	6	26	13	38	24	3
23	0	32	20	10	25	0	35	22	7	27	0	38	24	4
23	1	32	20	11	25	1	35	22	8	27	1	38	24	5
23	2	32	20	12	25	2	35	22	9	27	2	38	24	6
23	3	32	20	13	25	3	35	22	10	27	3	38	24	7
23	4	32	21	0	25	4	35	22	11	27	4	38	24	8
23	5	33	21	0	25	5	35	22	12	27	5	38	24	9
23	6	33	21	1	25	6	35	22	13	27	6	38	24	10
23	7	33	21	2	25	7	36	22	13	27	7	38	24	11
23	8	33	21	3	25	8	36	23	0	27	8	38	24	12
23	9	33	21	4	25	9	36	23	1	27	9	39	24	12
23	10	33	21	5	25	10	36	23	2	27	10	39	24	13
23	11	33	21	6	25	11	36	23	3	27	11	39	25	0
23	12	33	21	7	25	12	36	23	4	27	12	39	25	1
23	13	33	21	8	25	13	36	23	5	27	13	39	25	2

10% weight loss over 3 months

Examples

Start weight	weekly loss	3 month loss
60kgs (9st 4lb)	0.5kg (1lb)	6kgs (13lbs)
120kgs (18st 9lb) 1kg (2lbs)	12kgs (26lbs)	
179kgs (28st 1lb) 1.5kg (3lbs)	7.9kgs (39lbs)	

The general aim is 1-2lbs a week weight loss

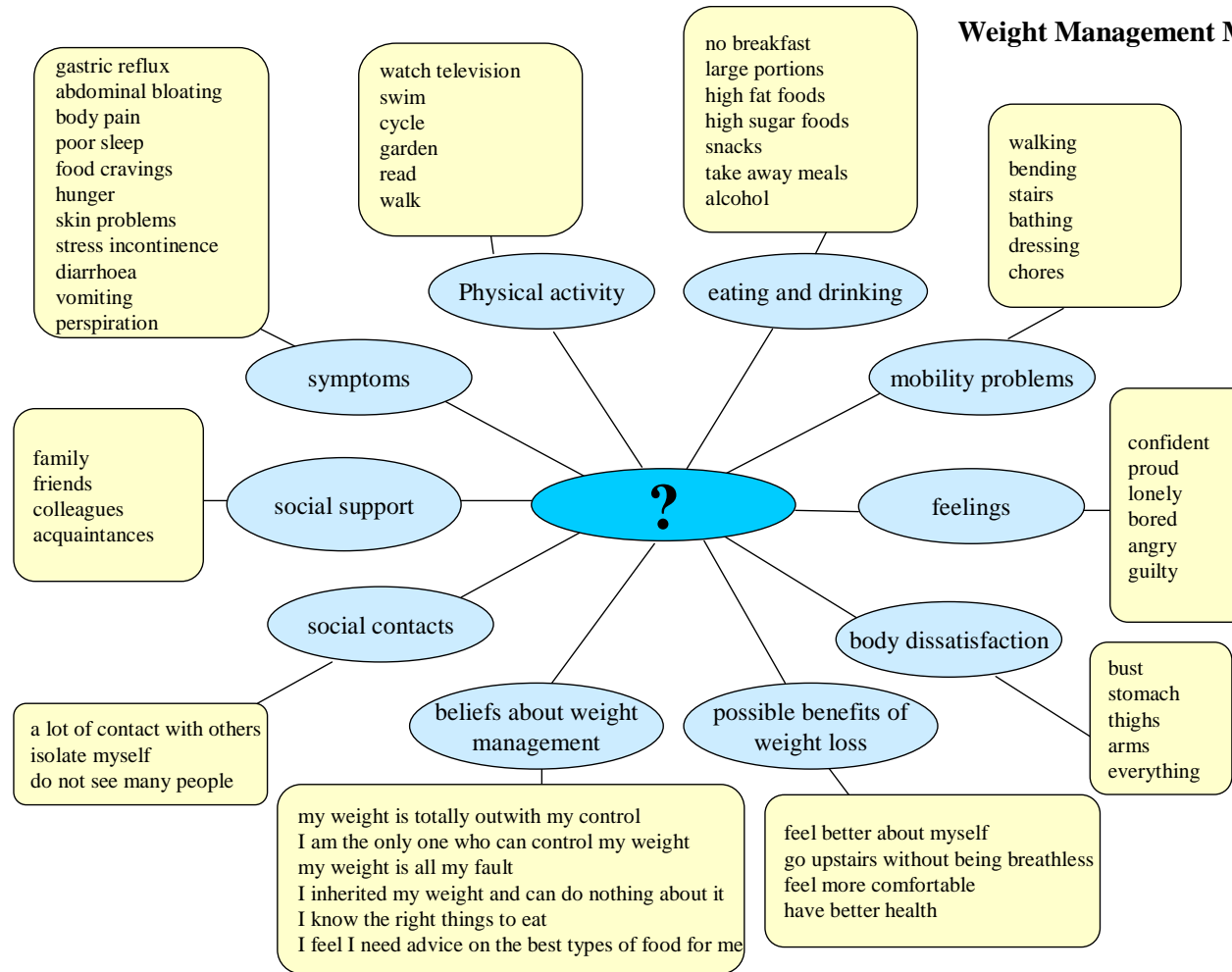
1lb a week over a year = 52lbs (23.6kgs)

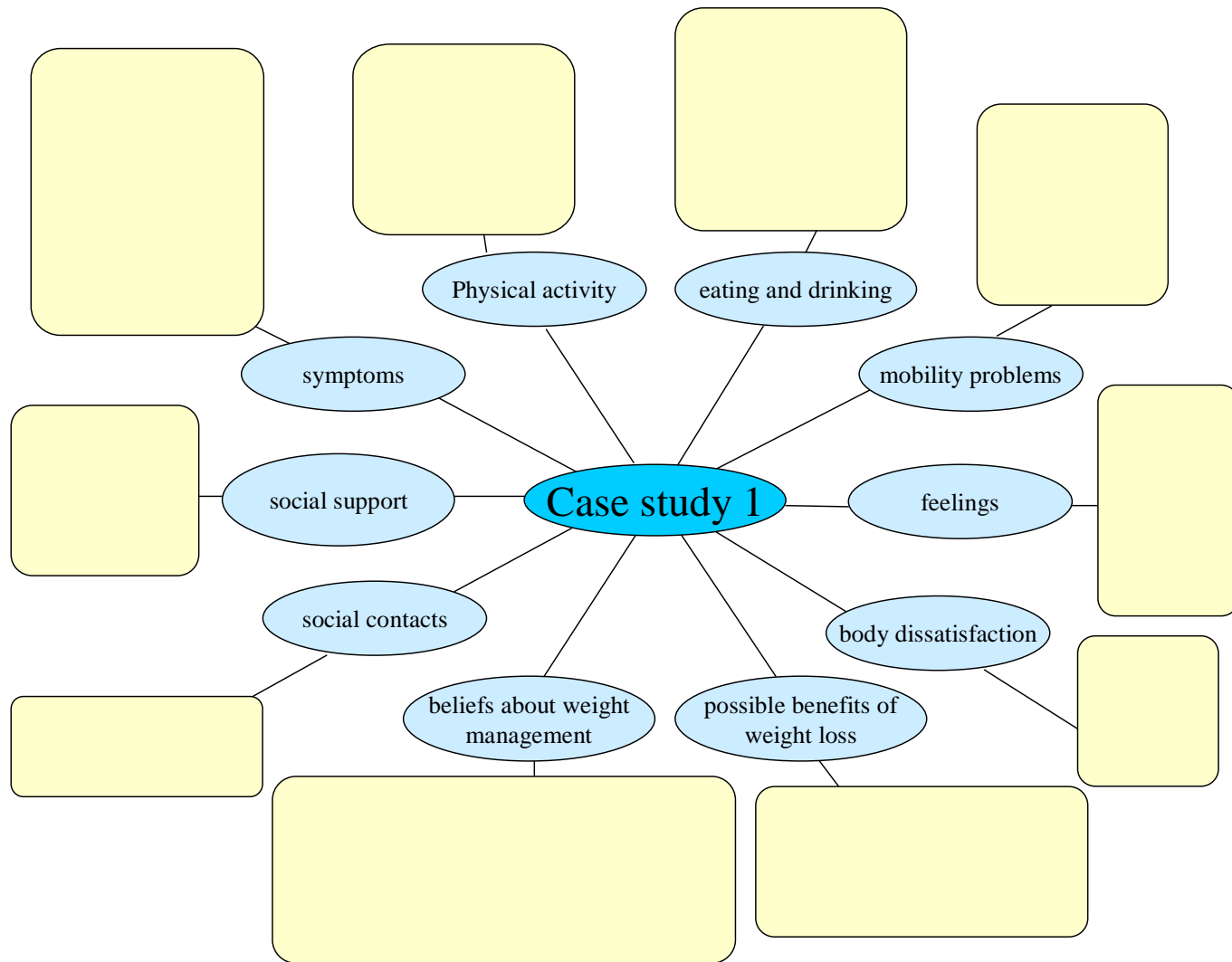
2lb a week over a year = 104lbs (47.3kgs)

10% Weight loss Chart (Metric)

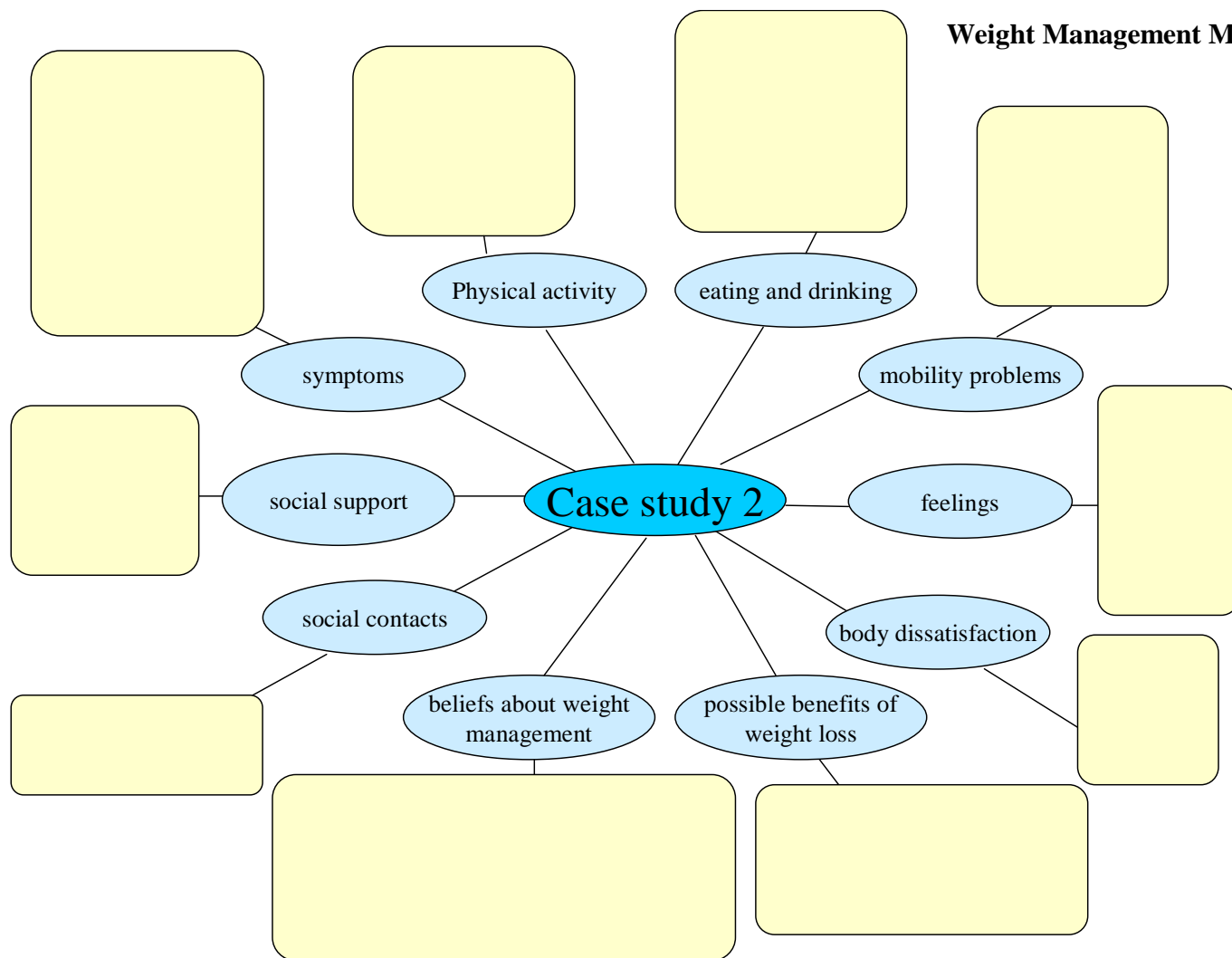
Start Weight	10% loss	Goal Weight	Start Weight	10% loss	Goal Weight	Start Weight	10% loss	Goal Weight	Start Weight	10% loss	Goal Weight	Start Weight	10% loss	Goal Weight	Start Weight	10% loss	Goal Weight
kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	kg
60	6.0	54.0	80	8.0	72.0	100	10.0	90.0	120	12.0	108.0	140	14.0	126.0	160	16.0	144.0
61	6.1	54.9	81	8.1	72.9	101	10.1	90.9	121	12.1	108.9	141	14.1	126.9	161	16.1	144.9
62	6.2	55.8	82	8.2	73.8	102	10.2	91.8	122	12.2	109.8	142	14.2	127.8	162	16.2	145.8
63	6.3	56.7	83	8.3	74.7	103	10.3	92.7	123	12.3	110.7	143	14.3	128.7	163	16.3	146.7
64	6.4	57.6	84	8.4	75.6	104	10.4	93.6	124	12.4	111.6	144	14.4	129.6	164	16.4	147.6
65	6.5	58.5	85	8.5	76.5	105	10.5	94.5	125	12.5	112.5	145	14.5	130.5	165	16.5	148.5
66	6.6	59.4	86	8.6	77.4	106	10.6	95.4	126	12.6	113.4	146	14.6	131.4	166	16.6	149.4
67	6.7	60.3	87	8.7	78.3	107	10.7	96.3	127	12.7	114.3	147	14.7	132.3	167	16.7	150.3
68	6.8	61.2	88	8.8	79.2	108	10.8	97.2	128	12.8	115.2	148	14.8	133.2	168	16.8	151.2
69	6.9	62.1	89	8.9	80.1	109	10.9	98.1	129	12.9	116.1	149	14.9	134.1	169	16.9	152.1
70	7.0	63.0	90	9.0	81.0	110	11.0	99.0	130	13.0	117.0	150	15.0	135.0	170	17.0	153.0
71	7.1	63.9	91	9.1	81.9	111	11.1	99.9	131	13.1	117.9	151	15.1	135.9	171	17.1	153.9
72	7.2	64.8	92	9.2	82.8	112	11.2	100.8	132	13.2	118.8	152	15.2	136.8	172	17.2	154.8
73	7.3	65.7	93	9.3	83.7	113	11.3	101.7	133	13.3	119.7	153	15.3	137.7	173	17.3	155.7
74	7.4	66.6	94	9.4	84.6	114	11.4	102.6	134	13.4	120.6	154	15.4	138.6	174	17.4	156.6
75	7.5	67.5	95	9.5	85.5	115	11.5	103.5	135	13.5	121.5	155	15.5	139.5	175	17.5	157.5
76	7.6	68.4	96	9.6	86.4	116	11.6	104.4	136	13.6	122.4	156	15.6	140.4	176	17.6	158.4
77	7.7	69.3	97	9.7	87.3	117	11.7	105.3	137	13.7	123.3	157	15.7	141.3	177	17.7	159.3
78	7.8	70.2	98	9.8	88.2	118	11.8	106.2	138	13.8	124.2	158	15.8	142.2	178	17.8	160.2
79	7.9	71.1	99	9.9	89.1	119	11.9	107.1	139	13.9	125.1	159	15.9	143.1	179	17.9	161.1

Weight Management Map





Weight Management Map



Appendix 10

Interview schedule for nurses who recruited in the intervention phase

Appendix 11

**Interview schedule for nurses who were unable to recruit for
the intervention phase**

Appendix 12

Informed consent for the exploratory phase

Appendix 13

Information sheet for the exploratory phase

Appendix 14

Ethics approval letter for the exploratory phase

**This page contained the ethics approval letter for the
exploratory phase of the research**

Appendix 15

Ethics amendment approval

**This page contained an ethics letter approving an amendment to the
research procedure**

Appendix 16

**Approval letter from research and development for the
intervention phase**

**This page contained the approval letter from a Research and
Development Department for the intervention phase**

Appendix 17

Diagram of the research design for the exploratory phase

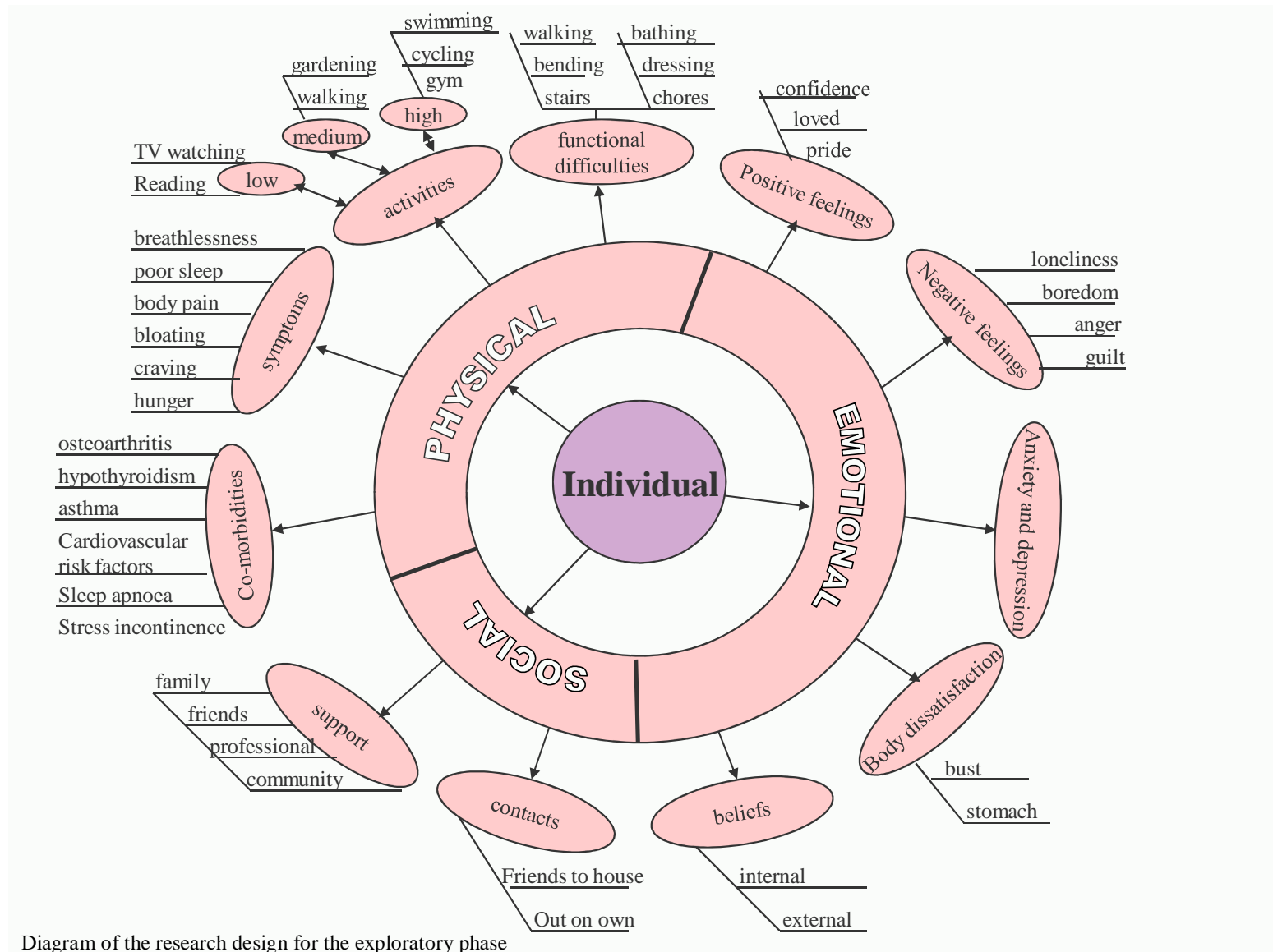


Diagram of the research design for the exploratory phase

Appendix 18

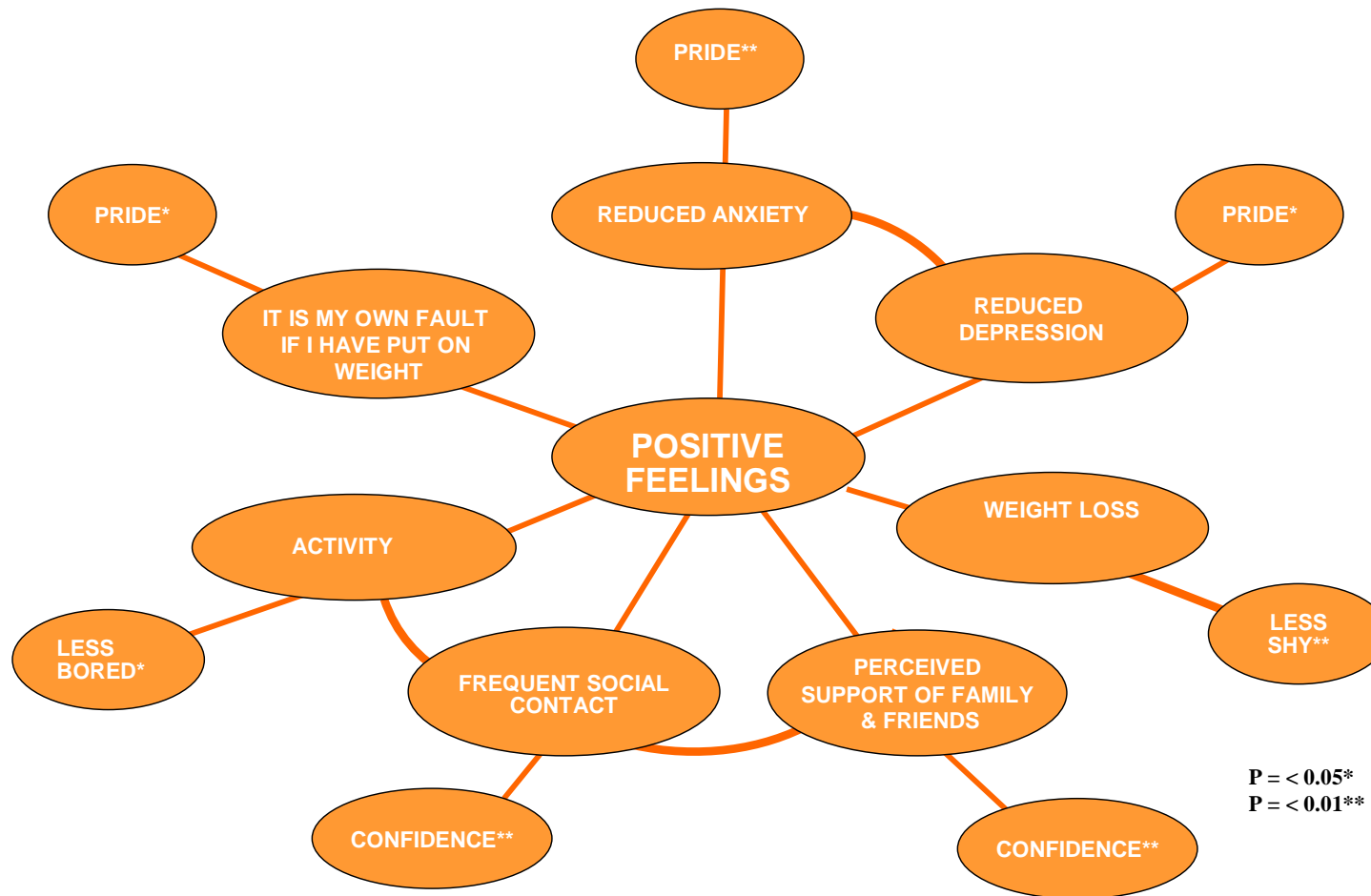
Correlations of negative feelings from the exploratory phase



Correlations of negative feelings

Appendix 19

Correlations of positive feelings from the exploratory phase



Correlations of positive feelings

Appendix 20

**Revised ‘My Action Plan’ for the booklet
‘My Personal Approach to Weight Management’**

My Action Map

	Daily Actions	Progress
Plan		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Reward

My Action Map

	Weekly Actions	Progress
Plan		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Reward