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 online 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...
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
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 it’s 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 judge. 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 co-morbidities have already been discussed in the introduction and are very relevant to treatment. For example, a systematic review by Lieverse 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 Pudel 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.

\textit{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).

\textit{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).

\textit{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 $\geq 35$ kg/m$^2$ 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 (Caterson 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.