



Factors that motivate obese and overweight patients to adhere to lifestyle change

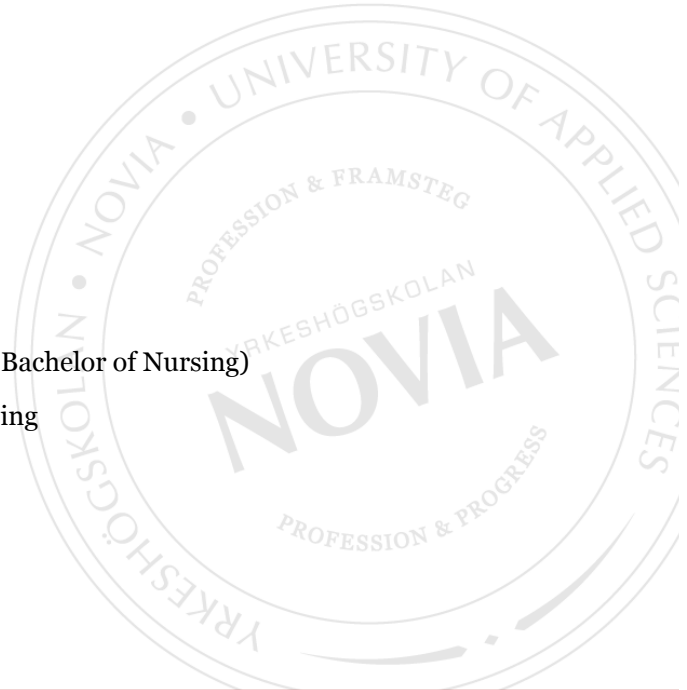
Approaching long-term weight management with health promotion as the ultimate goal

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Summary

The current approach for obesity treatment often focuses primarily on weight loss rather than health promotion and a holistic view of the patient. Despite the knowledge that lifestyle change is the most effective method for long-term weight management, adherence to health-promoting behaviors is often problematic. The aim of this study was to identify factors that motivate obese and overweight adults to adhere to lifestyle change. A systematic literature review was conducted using EBSCO and CINAHL databases, and five qualitative studies were analyzed using the content analysis method. The review identified factors that motivate lifestyle change as well as factors that undermine motivation. Autonomous motivation was especially important for adherence to change, as was support-related motivation. The results also provide further support for a lifestyle approach based on a holistic view of health rather than a strict weight loss approach for long-term weight management.

Language: English

Key words: obesity, overweight, long-term weight management, adherence, lifestyle change, motivation, health promotion

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1 Introduction

Rates of obesity are increasing at alarming rates worldwide, in developed and developing countries alike. Furthermore, obesity rates are rising rapidly among children as well as adults. The health consequences of this trend may only become fully understood in years to come (WHO, 2000, 16). Higher rates of obesity and other noncommunicable diseases are linked to energy imbalances resulting from changing diet and nutrition patterns. This presents a clear challenge to global health (Popkin, 2006, 289).

So how do we respond? Popkin holds that the response ought to be aimed at improving the lives of individuals, and that one way to accomplish this is by preventing obesity and other related noncommunicable diseases (2006, 296). Nurses can play a crucial role in meeting this challenge by supporting their patients in making lifestyle changes for health promotion. For patients that are already overweight or obese, this often includes a strategy for long-term weight management.

Long-term weight management is only one part of a complete approach to obesity treatment. Although weight management is a key component of obesity treatment, a holistic view of the patient requires that health promotion be in the forefront. Health promotion views the individual as a whole (Pender et al., 2011), including physical, emotional and social aspects. Health promotion for the obese or overweight patient may address, for example, diet, physical activity, weight management, social support, emotional health, and/or stress management. The approach used should depend on the individual, taking into account his or her own health needs and resources.

2 Research problem, aim and question

Unfortunately, the approach to obesity treatment today is often focused on weight loss rather than on a holistic view of the patient. There is growing evidence for a paradigm shift from the traditional weight loss paradigm to a paradigm grounded in health promotion (Miller, 2005; Robison, 2005). Within this new paradigm, long-term weight management must be approached with health promotion as the ultimate goal.

Despite the knowledge that lifestyle change is the most effective method for long-term weight management, adherence to health-promoting behaviors continues to be a problem. Motivation is an important concept, especially now as the traditional weight loss paradigm is being challenged. As focus changes from weight loss to health promotion, it is likely that the motivations for behavioral change will also shift. Triggers for weight gain and loss, barriers to weight loss and adherence to behavioral change are related topics that have been researched in recent years (Visram, Crosland & Cording, 2009; Byrne, 2002; Shay, 2008). However, there is limited research regarding motivation for behavioral change.

The aim of this study is to identify factors that motivate obese and overweight patients to adhere to lifestyle change. The results should be useful for nurses in supporting health promotion for obese and overweight patients with a lifestyle approach to obesity treatment. The following research question will be addressed: What factors motivate obese and overweight patients to adhere to lifestyle changes for long-term weight management?

3 Theoretical background

3.1 Definition of terms

Throughout the scientific literature used in this study, various terms are used to refer to similar or related concepts. Other terms are widely used by the general population but may need clarification. It is therefore necessary to define certain concepts and terms as they will be used in this study.

3.1.1 Obesity and overweight

Obesity and overweight can be jointly defined as “abnormal or excessive fat accumulation that may impair health” (WHO Media Center, 2012). It is logical to define obesity as beginning at the point where health risks become apparent;

however, the relationship between body fat and disease is complicated by other factors such as smoking and the localization of body fat. Imaging techniques such as computerized tomography or magnetic resonance imaging can be used to measure the total body fat mass as well as the localization of body fat, but they are expensive and less accessible than other techniques. Anthropometric measurements and body mass index are used commonly for estimating total body fat because they are inexpensive and easy to perform in clinical settings (Björntorp, 2002, 378).

Body mass index (BMI) is a ratio of weight-to-height that is used to classify overweight and obesity in adults. It is calculated as a person's body weight in kilograms divided by the square of his height in meters (kg/m^2). The WHO classifies a BMI that is greater than or equal to 25 as overweight, and a BMI that is greater than or equal to 30 as obese (WHO Media Center, 2012). BMI is a useful measure of overweight and obesity in adults. However, it is only intended as a rough guide because it does not take other factors, such as localization of body fat, into account (Björntorp, 2002, 378).

Anthropometric measurements can also be used to measure body fat distribution. These measurements include waist circumference, hip circumference, and abdominal sagittal diameter. The waist/hip circumference ration (WHR) has been associated with the prevalence and incidence of various diseases, but recommendations for borderline values are difficult to make as they differ according to the ethnic population. A borderline WHR of 1.0 in men and 0.85 in women is generally accepted for the Caucasian population. Waist circumference alone is also useful as an indicator of increased risk for obesity-associated metabolic complications. The WHO suggests that this risk is increased when the waist circumference is greater than or equal to 94 cm in men and 80 cm in women. Risk is substantially increased when the waist circumference is greater than or equal to 102 cm in men and 88 cm in women. (Björntorp, 2002, 378-379).

For the purposes of this study, overweight and obesity will be defined according to the WHO's classifications based on BMI. Throughout the literature search conducted for this study, this has been the most frequently used definition of overweight and obesity.

3.1.2 Terms associated with long-term weight management

Throughout the literature, loss, control, maintenance and management are all terms associated with long-term weight management. Davis and Turner divide the term 'weight management' into two phases: weight loss and weight control (2001,15). According to their definition, the initial phase of weight loss is followed by a lifelong endeavor to maintain a healthy weight during the weight control phase. This process is collectively referred to as weight management. For the purposes of this study, weight management will be referred to as a singular process. Emphasis is placed on the long-term implications of a lifestyle approach to weight management. Long-term weight management begins with lifestyle change, which is a means of both achieving initial weight loss and of maintaining that loss.

Weight loss maintenance describes the ability to keep off weight that was intentionally lost (Wing & Phelan, 2005, 222S). It is closely related to the concept of weight regain; preventing weight regain and weight loss maintenance go hand in hand. However, weight loss maintenance should not be the only maintenance goal. The concept of maintenance also applies to lifestyle changes such as dietary choices and increased physical activity. Weight loss should not be the central focus of maintenance goals; improvements in lifestyle areas and the resulting health benefits should also be celebrated (Brownell & Stunkard, 2002, 511).

3.1.3 Obesity treatment

Obesity treatment refers to a broad range of strategies employed to improve the health and well-being of obese patients. The term 'treatment' in relation to obesity does not refer to a quick fix or even to a periodic treatment. Obesity treatment is an ongoing and multi-faceted process that is individual to each patient and is shaped by the establishment of goals. The nurse has a unique role in helping obese patients develop realistic goals and expectations. This process begins by discussing the topic with the patient, assessing the patient's perception of his or her condition, and considering the patient's personal resources (Burke & Wang, 2011, 368). A treatment

plan is then created to facilitate long-term weight management, reduce the risk factors of obesity, and improve well-being (Brownell & Stunkard, 2002, 507).

3.1.4 Concept of adherence

Within the healthcare field, the term adherence broadly refers to “one’s ability to maintain the behaviors associated with a plan of care” (Shay, 2008, 42). In the literature, the terms adherence and maintenance are both used with regards to weight loss; however, there is an important distinction. The term maintenance is used to describe one’s ability to remain at a targeted weight, whereas adherence is used in conjunction with the behaviors used to lose weight (Shay, 2008, 43). This study seeks to delve deeper into the behaviors and motivations associated with lifestyle change, making adherence an important concept.

3.1.5 Motivation

Motivation can be defined as “the psychological forces or energies that impel a person toward a specific goal” (Silva, Markland, Minderico, Vieira, Castro, Coutinho, Santos, Matos, Sardinha & Teixeira, 2008). Theoretically, behaviors that are autonomously motivated (i.e. chosen by the individual for personal or 'internal' reasons and accompanied by a strong sense of commitment) are more likely to end in meaningful and long-term changes. On the other hand, behaviors that are motivated by rewards, punishments, or pressures are only expected to last as long as the external sources of motivation are in place (Silva et al., 2008).

Deci and Ryan distinguish between extrinsic and intrinsic motivation. They describe intrinsic motivation as the energy source that allows an individual to act on, rather than simply react to, their environment. Intrinsic motivation can also be described as non-drive-based, implying that the motivation comes from within the individual and is associated with the individual’s need to be self-determining and competent (Deci & Ryan, 1985, 4-5). According to the Self-Determination Theory, there are two main factors that influence intrinsic motivation: perceived locus of causality and perceived

competence. Intrinsic motivation can be enhanced if supportive conditions allow for change towards a more internal locus of causality and greater perceived competence (Deci & Ryan, 2002). This may have important implications for nurses in supporting long-term weight management and lifestyle change for obese and overweight patients. By enhancing intrinsic motivation, it may become more plausible to produce lasting lifestyle change.

3.2 Related theory – health promotion

In order to understand health promotion, one must first understand the concept of health. Pender, Murdaugh & Parsons define health as a multidimensional concept influenced by family, community, national, and world health. No single dimension of health can be ignored, and the need for a holistic approach is emphasized. Unlike the traditional definition of health where health and illness are at opposite ends of a continuum, health and illness are presented as distinct concepts that are interrelated and can coexist throughout the lifespan. Health can be defined in terms of stability, actualization of human potential, or as a combination of both. Pender et al. define health as “the realization of human potential through goal-directed behavior, competent self-care, and satisfying relationships with others, while adapting to maintain structural integrity and harmony with the social and physical environments” (Pender et al., 2011, 22). This definition presents a holistic and expansive view of health that is applicable to the everyday lives of individuals.

Health promotion and disease prevention are complementary processes, but there is an important distinction between the two. Health promotion is “behavior motivated by the desire to increase well-being and actualize human health potential”, whereas disease prevention is “behavior motivated by the desire to actively avoid illness, detect it early, or maintain functioning with the constraints of illness” (Pender et al., 2011, 5). Just as health can be defined in terms of stability or actualization, it is these two angles that differentiate health promotion and disease prevention. Disease prevention is associated with stabilization and aims to maintain balance and equilibrium through protective maneuvers. On the other hand, health promotion is associated with the actualization of human potential and creates positive tension to

promote change and growth. Disease prevention is “avoidance” motivated, whereas health promotion is “approach” motivated (Pender et al., 2011, 5).

Since health is seen as a multidimensional concept, health promotion must also be multidimensional. Health promotion encompasses individual, family, community, socioeconomic, cultural, and environmental dimensions (Pender et al., 2011, 6-8). At the individual level, nurses have a unique role in partnering with patients to empower them to move towards health goals and actualize their health potential. Nurses should use a positive perspective when assessing patient health and forming health promotion strategies. Focus should be placed on the patient’s available resources, potentials, and capabilities (Pender et al., 2011, 31). The nurse should then support the patient in making lifestyle changes to promote health. This includes promoting a positive climate for change, serving as a catalyst for change, assisting with the change process, and supporting maintenance (Pender et al., 2011, 37).

3.3 Causes of excess weight gain

The fundamental cause of excess weight gain leading to overweight and obesity is energy imbalance (WHO Media Center, 2012). Studies show that body weight is affected by its own energy balance regulatory system. Although this system is not fully understood, it is clear that energy intake and energy expenditure are linked to changes in body weight. In a ‘normal’ environment, the body’s regulatory system is able to maintain energy balance. However, when the environment poses challenges to this system, it may falter, causing energy imbalance and changes in body weight. When these challenges are short-lived, the body is often able to return to its original state of energy balance. If environmental challenges persist, the body’s physiological regulation of energy balance may be overwhelmed. This makes it difficult to maintain a non-obese body weight while relying solely on the body’s physiological regulation of energy balance (Hill, 2002, 460-461).

Simply put, excess weight gain occurs when a person’s energy intake exceeds their output of energy over a prolonged period of time (WHO, 2007, 46). The relationship between diet and physical activity is therefore a large determining factor in the

development of overweight and obesity. Changes in diet and physical activity patterns are often caused by changes in the surrounding environment. Today's global population is consuming increased amounts of energy-dense foods high in fat, salt and sugars but low in vitamins, minerals and other micronutrients. People are also less physically active due to more sedentary forms of work, new modes of transportation, and increased urbanization. These widespread changes in diet and physical activity are largely affected by development and poor supportive policies in sectors such as health, agriculture, transportation, urban planning, food processing, marketing, and education (WHO Media Center, 2012). The current environmental challenges to energy balance often require a conscious effort to maintain a non-obese body weight by, for example, controlling food intake and exercising more (Hill, 2002, 461).

Although body weight and excess weight gain are largely determined by environmental factors, there is also a genetic component. The genetic component influences how a person responds to their environment and determines their degree of susceptibility to becoming obese (Hill, 2002, 463). While genetic influences on body weight are not fully understood, there are clear indications that the two are linked. For instance, studies show that the rate of obesity is twice as prevalent in families of obese individuals as in the general population (Bouchard, 2002, 17). It is now clear that there are genes linked to causing obesity and others to a predisposition for becoming obese. However, these genetic traits are highly complex and are affected by multiple influences (Bouchard, 2002, 20).

3.4 Health risks associated with obesity and overweight

3.4.1 Physical health risks

Obesity and overweight are major public health concerns because they are associated with medical complications that lead to increased morbidity and mortality (Pi-Sunyer, 2002, 467). A BMI above the normal range (>25) is a major risk factor for medical complications such as cardiovascular disease, stroke, type 2 diabetes

mellitus, musculoskeletal disorders such as osteoarthritis, and some forms of cancer (WHO Media Center, 2012). Other common complications associated with obesity include hypertension, dyslipidemia, respiratory dysfunction, gallstones and cholecystitis (Pi-Sunyer, 2002, 467). The risk of developing these complications increases as BMI increases (WHO Media Center, 2012).

When centrally distributed obesity (large waist circumference) is present along with two or more other metabolic abnormalities, this condition is known as metabolic syndrome. The metabolic abnormalities that, together with obesity, constitute metabolic syndrome include low HDL cholesterol levels, elevated triglyceride levels, hypertension and hyperglycemia. Metabolic syndrome has been associated with tripled rates of type 2 diabetes and doubled rates of cardiovascular disease (WHO, 2007, 21). Unfortunately, contemporary society and the surrounding environment often contribute to a lifestyle that is harmful to metabolic health and complicates the treatment of obesity (Després, 2002, 481).

3.4.2 Psychosocial health risks

The physical consequences of obesity and overweight are widely researched. However, health risks associated with obesity and overweight are not limited to physical consequences. Rather, they affect multiple aspects of life, including psychological and social aspects. The psychological effects of obesity are much less understood than physical ones (Friedman & Brownell, 2002, 393).

Research shows that there is a clear social stigma that accompanies obesity. Unfortunately, today's culture often blames obese and overweight individuals for their condition and condemns their physical appearance. Negative attitudes towards obese and overweight individuals often lead to prejudice and discrimination (Friedman & Brownell, 2002, 395). Discrimination can be present at the workplace, in educational settings, and even in medical and healthcare settings (Puhl & Brownell, 2002, 108-110).

Research shows that the obesity stigma is a threat to health and interferes with obesity treatment efforts (Puhl & Heuer, 2010, 1019). Adler and Stewart found that

there is often tension between empowering obese individuals to manage their weight by living a healthy lifestyle and blaming them for failing to do so. They propose that obese individuals should be provided with adequate resources to engage in health-promoting behaviors before they can be held accountable for doing so (Adler & Stewart, 2009, 49-50).

Not all obese and overweight individuals experience psychological suffering from their condition; however, psychological and social problems are not uncommon. Further research to identify the individuals at risk and the ways that they suffer would be helpful for understanding the lives of obese individuals and supporting patients in the treatment of obesity (Friedman & Brownell, 2002, 393-395).

3.5 Individual and societal roles in health promotion

Fortunately, the health risks associated with obesity and overweight are largely preventable. At the individual level, people must take responsibility for their own behaviors and make lifestyle choices that promote health. This may include limiting energy intake from total fats and sugars, increasing consumption of fruits and vegetables, and engaging in regular physical activity (WHO Media Center, 2012).

Individual responsibility for health promotion cannot be successful unless individuals have access to healthy choices. Society also has an important role in health promotion for obese and overweight patients for this reason. The surrounding environment is highly influential when it comes to making healthy (or unhealthy) lifestyle choices. Society's role is therefore centered on creating environments that support a healthy lifestyle (WHO Media Center, 2012).

Public health strategies for health promotion in obese patients should incorporate individual, community, and policy levels. This requires the involvement and regulation of virtually all sectors, including social welfare, education, agriculture, transport, trade, planning, development and taxation policies (WHO, 2007, 174-178). Public health policy might include strategies such as increasing opportunities for physical activity, subsidizing the sale of healthy foods, prohibiting fast food and soft drinks from schools, and taxing foods with poor nutritional value. Despite the known effects of

poor lifestyle choices, obesity continues to be a rapidly escalating problem worldwide. Bold action at the societal level through public policy changes and the involvement of multiple sectors could be key to slowing the rise of obesity (Brownell, 2002, 620-622).

3.6 Treatment aims

Successful treatment of obesity should not entail reaching a desired weight and maintaining it; rather, the emphasis should always be on health promotion and the prevention of disease by means of a reasonable but focused weight loss goal with a plan to keep off the weight (Blackburn, 2002, 485). Reaching an 'ideal' or 'healthy' weight is not always a realistic goal, nor is it necessary for obtaining significant health benefits (WHO, 2007, 283). According to Miller, society's focus on strict BMI standards has caused a dangerous shift, and "the unfortunate consequence is that we have forgotten the call to reduce weight to improve health and replaced it with the cry of weight loss at any cost" (2005, S90). In a weight loss program, weight loss should not be the only indicator of success; additional outcomes such as blood pressure, glucose control, cholesterol levels, quality of life, and adherence to health-promoting behaviors are also indicators of success when health promotion is the aim (Miller, 2005, S91).

Evidence shows that patients can promote health first by maintaining their weight (preventing weight gain) and second by losing a moderate amount of weight (5-10% of initial body weight) (WHO, 2007, 283). Even weight loss of as little as 5% of the initial body weight can reduce or eliminate disorders related to obesity. If the initial body weight is reduced by 10-20%, and this weight is maintained from two to five years, health benefits are sustained. Moderate weight loss has been associated with an improved sense of well-being and self-esteem, higher energy levels, and better sleep quality. It also improves the metabolic syndrome associated with obesity, reverses insulin resistance, and improves or reverses obesity-related comorbidities (Blackburn, 2002, 484-485). This indicates that long-term weight management is strongly associated with health promotion for obese and overweight patients.

The ultimate goal of long-term weight management is improved health and well-being. Weight loss is one way of achieving this goal in obese and overweight patients; however, it is not the only way. Lifestyle changes such as diet modification and physical activity are beneficial independently of weight loss and are vital to health promotion (Brownell & Stunkard, 2002, 507). Other possible aims include weight maintenance, waist reduction, change in body composition, diminished disease, fewer overall medications, improved quality of life, improved fertility, and other individual goals (WHO, 2007, 483-484). Improvements in any of these areas are an indication of success in terms of health promotion.

3.7 Treatment approaches for obesity and overweight

This study will focus on lifestyle change as a means of long-term weight management and health promotion. Current treatment approaches for obesity and overweight are outlined in the following chapters. Remember that the primary focus of this study is not weight loss, but health promotion and long-term weight management as a part of a holistic approach to obesity treatment. However, knowledge of the common methods used for achieving initial weight loss provide important context for understanding obesity treatment as it is often approached today. The growing evidence base for a paradigm shift in the treatment of obesity may change the way treatment is approached in the future.

3.7.1 Diet, physical activity and behavior strategies

The most effective form of treatment for overweight and obesity is lifestyle modification. This approach has three major components: diet, physical activity, and behavioral strategies (Burke & Wang, 2011, 368). Poor diet and lack of physical activity are two major risk factors accountable for the increase in obesity and other noncommunicable diseases worldwide (Pender et al., 2011, 170). A lifestyle approach to obesity treatment combines diet and physical activity interventions with behavioral strategies to foster maintenance of health-promoting behaviors.

According to the WHO, diet recommendations should help individuals to achieve energy balance and a healthy weight. Individuals should limit their energy intake from total fats and free sugars and increase their consumption of fruits, vegetables, legumes, whole grains, and nuts (WHO, 2004, 4). For the majority of overweight and obese patients, dietary adjustment to reduce caloric intake is needed. The NIH recommends a low calorie diet (1,000-1,200 kcal/day for most women, or 1,200-1,800 kcal/day for most men) for weight loss and reducing risk factors such as high blood cholesterol and hypertension (NIH, 2000, 26).

Eating behavior is influenced by multiple factors, including genetic-biologic, psychological, socioeconomic, cultural, environmental, and health policy factors. Due to the complex causes of eating behaviors, changing these behaviors can be a challenge (Pender et al., 2011, 175). Nurses have a responsibility to educate patients about nutritional health and to support patients in making changes in dietary behavior. In doing this, individual, social, and environmental barriers to change must be taken into account (Pender et al., 2011, 189).

Physical activity is a key component of obesity treatment. Evidence shows that a sedentary lifestyle promotes unhealthy weight gain whereas regular physical activity prevents it (WHO, 2003, 62). Physical activity alone does not lead to significant initial weight loss; however, in combination with diet it can lead to greater loss (Burke & Wang, 2011, 370). Moreover, increased physical activity leads to significant health benefits regardless of body size or the amount of weight lost (Blair & Holder, 2002, 522). Current recommendations for physical activity suggest 30 minutes of moderate physical activity at least five days per week. This amount of activity has been linked to improved fitness and the prevention of cardiovascular disease. However, daily physical activity for longer periods of time (e.g. 45-60 minutes per day) is recommended for weight loss maintenance and preventing weight regain (WHO, 2007, 285).

The traditional physical activity approach with a prescribed duration of physical activity each day has been reevaluated due to poor adherence. New guidelines promote a lifestyle approach to physical activity, encouraging patients to be more active throughout the day. For example, patients can be encouraged to park at the far

end of the parking lot and walk to the store, or to take the stairs instead of the elevator. Studies show that the lifestyle physical activity approach is as effective as prescribed exercise for improving physical activity, cardiorespiratory fitness, blood pressure, and body composition. It may even be a better option for obese patients who have a poor fitness level and struggle with engaging in physical activity for longer periods of time (Blair & Holder, 2002, 521).

Behavior strategies for obesity treatment assume that eating and exercising are learned behaviors that can be modified, affecting body weight. This approach incorporates various strategies to modify behaviors to support weight loss. Strategies include goal setting, self-monitoring, stimulus control, problem solving, cognitive restructuring to minimize negative thoughts, reinforcement of positive behavior change, and relapse prevention. Stress management and social support are also important aspects (Burke & Wang, 2011, 371-371).

3.7.2 Weight loss medications

Patients who have not succeeded in losing weight using conservative approaches such as diet and exercise may benefit from weight loss medications. However, pharmacological treatment alone is insufficient; studies show that weight loss medications are beneficial when used as an adjunct to lifestyle change (Aronne, 2002, 552). There are limited indications for the use of weight loss medications in obese patients. According to guidelines by the National Institutes of Health (NIH), medications may be used as adjunctive therapy for weight loss in patients with a BMI ≥ 30 or ≥ 27 when comorbid conditions or risk factors are present (2000, 35).

There are currently two drugs approved by the Food and Drug Administration for long-term use in weight loss: sibutramine and orlistat. Both drugs have side effects and should only be considered after the potential risks and benefits have been weighed. Medications should only be used as a part of a comprehensive weight loss program incorporating diet, exercise and behavioral therapy (NIH, 2000, 35-37). Unfortunately, weight loss medications are often prescribed alone, limiting their benefits (Burke & Wang, 2011, 372).

3.7.3 Surgical treatment

Patients who are morbidly obese (i.e. a BMI ≥ 40 , or a BMI ≥ 35 with comorbid conditions present) may benefit from weight loss surgery (NIH, 2000, 38). Surgical treatments for weight loss include various procedures that either restrict the stomach's capacity, interfere with digestion, or a combination of both. The most commonly performed surgical procedure is gastric bypass. The Roux-en-Y gastric bypass limits food intake, delays emptying of gastric contents, and interferes with digestion. Studies show that the gastric bypass can be an effective means of achieving long-term weight management as well as producing other health benefits for morbidly obese patients (Pories & Beshay, 563-565).

3.8 Current research developments

Extensive research has been done investigating the causes of obesity and the effectiveness of various treatments. Burke and Wang summarize current treatment strategies for overweight and obesity, concluding that lifestyle modification is the most effective treatment approach (2011). There is also substantial evidence for the use of behavioral strategies in the treatment of obesity. Lifestyle change is dependent on the patients' ability to change their behavior. Long-term weight management requires behavioral change, but little is understood about how these changes are integrated into the daily lives of patients and how problems are dealt with (Sarlo-Lähteenkorva, 2007, 27).

Researchers have recognized the need to make the growing knowledge base regarding obesity treatment applicable in practice. Shay et al. reviewed current guidelines on adult weight management and created a step-wise practical guide for nurse practitioners when establishing weight management plans for obese patients (Shay, Shobert, Seibert & Thomas, 2009). Their approach, like many others, includes calculating an ideal weight and achieving a negative energy balance by tracking caloric intake and energy expenditure. This approach has been problematic for several reasons and will be addressed further in the following chapters.

3.8.1 Trends in long-term weight loss management

Wing and Phelan conducted research to review existing data on the prevalence of successful weight loss maintenance. They define successful weight loss maintenance as a 10% loss of initial body weight that is maintained for at least one year (Wing & Hill, 2001, 325). Based on data from the National Weight Control Registry and various other studies, approximately 20% of overweight individuals are successful at long-term weight maintenance (Wing & Phelan, 2005). Timperio and Crawford found that public views of successful weight management are inconsistent with public health goals and that many who considered themselves successful had no intention of taking steps to manage their weight in the immediate future (2004). This indicates that adjustment in public views regarding long-term weight loss management and the importance of lifestyle change may be needed.

Triggers for weight gain and loss, barriers to weight gain and adherence to behavioral change have been recent topics of research. Byrne reviewed psychological characteristics associated with weight maintenance and relapse, concluding that unrealistic weight goals, poor coping or problem-solving skills and low self-efficacy are influential (Byrne, 2002). Patients who recently completed a primary care-based weight management intervention recognized health concerns, image factors and past experiences of stigmatization as triggers to seek help with weight management. Personalized messages and continual support from professionals and peers were acknowledged as facilitators of successful weight management (Visram et al., 2009, 495). Shay identifies antecedents related to adherence to health-promoting behaviors, including self-efficacy, outcome expectation, perceived value, prior relapse, time, environment, social support, knowledge, socioeconomic status, perceived harm or adverse effects, active participation, provider influence, mental status, motivation, and perceived goal attainability. These antecedents are believed to affect adherence to health-promoting behaviors positively or negatively, in turn affecting the outcomes associated with weight loss maintenance (Shay, 2008, 49).

Today's society is faced with a paradox – there is more information about nutrition, exercise and health available than ever before, and yet people fail to adopt health-promoting behaviors. Lack of knowledge is not the reason that long-term weight

management too often fails. Rather, it is adherence to behavioral change that poses a problem and impedes lifestyle change (Miller, 2005, S91).

3.8.2 Changing focus from weight loss to health promotion

The current approach for obesity treatment focuses on weight loss as the primary goal. Guidelines recommend lifestyle changes, including diet and exercise, for losing weight. This approach has been successful in inducing short-term weight loss, but has failed in the majority of cases to incite long-term weight management and to produce lasting health benefits. Furthermore, there are concerns that a focus on weight loss may have adverse effects such as food and body preoccupation, weight cycling, distraction from other health goals and determinants, reduced self-esteem, eating disorders, and weight stigmatization and discrimination (Bacon & Aphramor, 2011).

An overt focus on weight loss in obesity treatment raises ethical concerns related to beneficence and non-maleficence. There is insufficient literature to support that weight control is beneficial, and a great deal of literature suggesting harmful effects (e.g. weight cycling and stigmatization) of a focus on weight loss (Bacon & Aphramor, 2011). While dieting is an efficient way of achieving initial weight loss, one to two thirds of dieters regain more weight than they lost on their diets. Also, evidence that dieting results in substantial health improvements is inconsistent regardless of changes in weight (Mann, Tomiyama, Westling, Lew, Samuels & Chatman, 2007). Besides weight gain in the long-term, there is substantial evidence of other damaging health impacts of dieting behavior for obese patients, such as disordered eating behavior and weight cycling (Polivy & Herman, 1985; Brownell & Rodin, 1994).

Thomas et al. conducted a study in Australia investigating obese adults' attitudes towards the effectiveness of obesity interventions. They found that participants preferred interventions that encourage lifestyle change rather than weight loss, as they are less stigmatizing and are more supportive in producing long-term lifestyle change. Participants also felt that obesity interventions do not consider the complexity of the causes of obesity nor the lived experience of obese adults (Thomas, Lewis,

Hyde, Castle & Komesaroff, 2010). These findings emphasize the need for obesity interventions that go beyond weight management and focus instead on a holistic approach to health promotion for obese patients.

The current definitions of overweight and obesity are based on BMI. However, using BMI as a proxy for health is problematic. Research suggests that metabolic health is not primarily dependent on body weight. A study by Wildman et al. shows that there are significant numbers of non-obese individuals with poor metabolic health, and significant numbers of overweight and obese individuals who are metabolically healthy (Wildman, Muntner, Reynolds, McGinn, Rajpathak, Wylie-Rosett & Sowers, 2008). The overt focus on BMI and weight loss within obesity treatment has resulted in many other measurements and indicators of health being forgotten.

Up until recently, the majority of research has focused on weight management, largely due to a general assumption that obesity is the primary *cause* of health problems that are associated with obesity. However, there is a growing evidence base that this is not the case. Although adiposity is linked to morbidity and mortality, there is little evidence for a causal relationship (Bacon & Aphramor, 2011). Evidence shows that BMI is only associated with excess mortality at statistical extremes (Flegal, Graubard, Williamson & Gail, 2005). In fact, people who are overweight but not obese have been found to have the lowest rate of mortality (Flegal et al., 2007). When it comes to morbidity, adiposity is only one of many factors associated with the risk of disease. It is likely that these other factors (e.g. fitness, physical activity, nutrient intake, weight cycling, and socioeconomic status) increase the risk of both disease and of weight gain (Bacon & Aphramor, 2011).

The weight loss approach to obesity treatment often assumes that obese and overweight individuals must lose weight in order to improve their health. However, the health benefits associated with weight loss are rarely related to the amount of weight lost, suggesting that behavior change may play a larger role in health promotion than weight loss itself (Bacon & Aphramor, 2011). Research shows that most health indicators can be improved through behavior and lifestyle change regardless of whether weight is lost (Bacon, Stern, VanLoan & Keim, 2005).

3.8.3 A paradigm shift: Health At Every Size

There is growing evidence that supports the Health At Every Size (HAES) paradigm rather than the traditional obesity treatment paradigm. Within the traditional paradigm, weight loss is the goal of obesity treatment. On the other hand, the HAES paradigm proposes that health is the result of behaviors that are independent of body weight and that an obsession with body weight is unhealthy (Miller, 2005, S89). HAES promotes the acceptance of natural diversity in body shape and size and holds that dieting for weight loss is often ineffective and can be dangerous. Instead, HAES promotes relaxed eating guided by internal body cues. Social, emotional, and spiritual factors, as well as physical ones, are all acknowledged as contributors to health (Robison, 2005).

Miller describes society's view of obesity treatment as "weight loss at any cost". Research in the traditional obesity treatment paradigm has caused organizations to progressively lower their BMI standards for a 'healthy' weight, the result being that standards are unreasonably narrow. Society accepts these BMI standards as absolute criteria for health, leading to an environment where "weight loss at any cost" dominates obesity treatment, rather than weight loss to improve health (Miller, 2005, S90). Within the HAES paradigm, a healthy weight is individual and is not determined solely by physical measures. Over time, individuals can reach a weight that is healthy for them by striving towards a healthier lifestyle (Robison, 2005).

The HAES paradigm calls for changes in the approach to obesity treatment in practice. For instance, in addition to BMI or waist measurements, other outcomes (e.g. blood pressure, glucose control, quality of life, or emotional health) should be used to determine success (Miller, 2005, S91). Interventions should be based on a holistic perspective and focus on behaviors that can be changed to promote health. Lifestyle interventions that address eating and exercise habits should be compassion-centered and encourage self-care rather than prescribing dos and don'ts. Finally, interventions should meet ethical standards and focus on health, not weight (Bacon & Aphramor, 2011).

3.8.4 The nurse's role

Nurses have a crucial role in helping patients with lifestyle change. Dale et al. did a randomized controlled trial comparing the effectiveness of two support programs for long-term weight management. The study found that a nurse-supported program is effective, and that regular contact and encouragement from a nurse was key to sustaining lifestyle changes (Dale, McAuley, Taylor, Williams, Farmer, Hansen, Vorgers, Chisholm & Mann, 2009). Brown et al. investigated nurses' practices, beliefs and attitudes towards the management of obesity. Their study findings show that the majority of nurses see obesity as an important health issue and believe it is their role to support obese patients with weight management. However, very few nurses have specific training in this area, and little time is spent on obesity management in practice. This highlights the need for increased training and organizational support for the management of obesity in primary care (Brown, Stride, Psarou, Brewins & Thompson, 2007, 329).

4 Methods

4.1 Development of research question

The rapid increase in obesity and other noncommunicable diseases worldwide has been clearly associated with changing trends in diet and physical activity. This makes obesity treatment and lifestyle intervention topics of utmost importance for the global population today. In my experience, it is clear that long-term weight management poses a daunting problem for many obese and overweight individuals. I have seen friends and family struggle with weight management only to end up discouraged by their minimal success at losing weight. This observation sparked my interest to investigate how obese patients can achieve long-term weight management.

I soon discovered that methods for long-term weight management compose a very broad topic that has already been widely researched. Of the various methods for long-term weight management, lifestyle change has been found to be the most

effective. However, weight management continues to be problematic, and the majority of people fail to maintain weight loss in the long-term. I began to come across the concept of adherence in my research, and discovered that adherence to the health-promoting behaviors that constitute lifestyle change is problematic. I formed a new research question: What are the barriers to successful long-term weight management? I soon found that this topic is already widely reviewed, and decided to change focus slightly, looking instead at motivational factors for long-term weight management. This viewpoint is slightly different and could contribute something new, as there is little research looking specifically at motivational factors in obesity treatment. I also found this topic more interesting than barriers to weight management, as it takes on a more positive outlook.

While delving deeper into the literature and forming the theoretical background for this study, I came across recent research pointing out problems with the traditional weight loss approach to obesity treatment and calling for an approach grounded in health promotion. I began to see a possible relationship between motivational factors for long-term weight management and the approach to obesity treatment; since the weight loss paradigm and the health promotion paradigm have different emphases, their differing approaches to obesity treatment may motivate patients in different ways. I decided to look at obesity treatment and long-term weight management from a health promotion perspective and specifically to look for factors that motivate obese patients to adhere to lifestyle change.

4.2 Research methodology – literature review

This study will involve a systematic literature review to answer the question “What motivates obese and overweight patients to adhere to lifestyle change for long-term weight management?” A literature review is a comprehensive approach to studying and interpreting available literature pertaining to a specific topic. Literature reviews are useful within social welfare and healthcare for bringing together research on a particular topic and presenting the results as a whole, rather than as individual pieces of evidence. Reanalyzing the results of previous studies in a broader context and looking at the ‘big picture’ can also lead to new discoveries (Aveyard, 2010, 5-9).

The large number of previously published studies related to long-term weight management, adherence, barriers, and prerequisites for success makes a literature review a useful method for this study. Although these topics are all related to motivation, little research is focused specifically on motivational factors for adherence to lifestyle change. Examining previous studies for motivational factors in the context of health promotion may allow results to be presented in a new light. Also, due to the shifting views in approaches to obesity treatment from weight loss to health promotion, a literature review may be useful for recognizing changes in motivational factors within recent years.

A systematic approach to a literature review is vital in ensuring the reliability of results. A systematic review should incorporate as much available information as possible regarding the topic, so that all relevant research is included in the 'big picture'. There should be a clearly defined and well-focused research question. Developing a searching strategy and inclusion and exclusion criteria is important for finding related literature and determining which literature is most relevant to the research question. The validity of literature must also be critiqued to avoid bias and to design a reliable study (Aveyard, 2010, 13-19).

4.2.1 Literature search

An electronic literature search was done using the EBSCO and CINAHL databases. A list of relevant search terms was created and expanded to include related words. For example, behavior change is related to behavioral strategies, therefore both were included in the search. Examples of search terms used include weight management, maintenance, adherence, overweight, obese, lifestyle, long-term, motivation, and attitudes.

A Boolean search was done utilizing Boolean operators (AND, OR, NOT) and truncation (*) to focus the search. For example, obes* was used as a search term to include all related forms of the word (e.g. obese, obesity). A search using the Boolean phrase "lifestyle AND obes* OR overweight" yielded 12,214 hits when limited to peer-reviewed full-text articles from the year 2000 to the present. To narrow the results,

subsequent searches were performed using different combinations of the search terms. A list of search term combinations was kept to create a systematic approach and to keep track of progress.

Inclusion criteria for the literature review required that articles be based on empirical research; previous literature reviews were not included. The articles were included if they were peer-reviewed and current (from the year 2000 to the present). The study population needed to include obese and/or overweight adults, or successful weight maintainers. Studies that were related to weight management or adherence to behavior or lifestyle change, as well as to patient experience, attitudes, or motivation, were considered relevant to the research question.

Articles were excluded from this study if they were published prior to the year 2000. Research primarily addressing normal or underweight patients, morbidly obese patients, children, and the elderly was also excluded. Studies were excluded if they focused mainly on comorbidities (e.g. diabetes, mental illness, eating disorders) or minority populations (e.g. African American women).

During the search, articles were first assessed by their titles, and then the articles that were not excluded were assessed by their abstracts. The search was stopped when the same articles repeatedly came up, with little new literature being added.

An electronic literature search, although useful, is not a 100% comprehensive way of searching for literature (Aveyard, 2010, 81). For this study, I had limited access to databases, limiting my search results. The reference lists of relevant articles were searched as an additional searching strategy. At the end of the literature search, five articles were chosen for inclusion in the review.

Before being chosen for inclusion in the review, relevant articles were critiqued to ensure their quality and trustworthiness. The research method, study sample, data collection and analysis methods, and study limitations were considered. All included articles were peer-reviewed. For summaries of the articles included in the review, see Appendix A.

During the literature search, I found that the majority of quantitative research focused specifically on weight loss, the frequency or duration of interventions, and physical

measures of successful maintenance. This type of research does not address my research question, which is concerned with motivation, health promotion, lifestyle change (ongoing, not a short-term treatment), and a broad range of measures of success (not just physical ones). Quantitative research is a useful method for observing relationships between behaviors and outcomes, but provides little insight when it comes to the personal experience of individuals, or in this case, the motivations of individuals. The research articles chosen for this review are qualitative studies that used interviews to gain understanding of patient perspectives.

4.2.2 Content analysis

Hsieh and Shannon define qualitative content analysis as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (2005, 1278). This method will be useful for identifying factors that motivate obese and overweight patients to adhere to lifestyle changes for long-term weight management.

This content analysis will make use of inductive reasoning to produce an overall picture of factors motivating obese patients to make positive lifestyle changes. First, an understanding of the data as a whole must be gained. Next, a coding scheme will be used for open coding of the data. After the data has been coded, categories can be created and further abstractions made. For example, sub-categories can be grouped together as categories, which can be grouped into main categories (Elo & Kyngäs, 2007, 109-111).

The results of this study should be useful for nurses with obese and overweight patients. Knowledge of factors that commonly motivate these patients may better equip nurses to support them in long-term weight management, overcoming barriers to lifestyle change and ultimately living healthier lives. This study should reveal problem areas and reveal factors that nurses can focus on to help motivate struggling patients to make important lifestyle changes for long-term weight management and health promotion.

5 Results

The five articles chosen for review were carefully read to gain an understanding of the data as a whole. Next, the data was coded by writing down recurrent themes that related to the research question in the margins of the text. These themes were then clustered into categories. During the categorizing process, each article was assigned a number, and the “address” (article number:page number, e.g. 3:254) for the locations of different themes in the text was recorded. This was done to make it easy to find the source of each theme and to ensure that the placement of themes into categories remained true to the meaning of the original text. An example of the analyzing process from text to category can be seen in Appendix B.

During the literature review, three main categories related to motivation for lifestyle change were identified: 1) approaches for weight management, 2) factors motivating lifestyle change and 3) factors undermining motivation. The main categories and their sub-categories are presented in Box 1. These categories and related themes are discussed in more detail in the following chapters.

- 1) Approaches for weight management
 - 1a) Approaches that hinder long-term success
 - 1b) Approaches that promote success
- 2) Factors motivating lifestyle change
 - 2a) Health-related motivation
 - 2b) Support-related motivation
 - 2c) Autonomous motivation
 - 2d) Appearance-related motivation
 - 2e) Catalysts for change
- 3) Factors undermining motivation
 - 3a) Factors undermining autonomous motivation
 - 3b) Barriers to change
 - 3c) Barriers to adherence

Box 1: Main categories and sub-categories

5.1 Approaches for weight management

Within the main category of approaches for weight management, two subcategories were identified: 1a) approaches that hinder long-term success and 1b) approaches that promote success. A short-term approach to weight management was identified as one approach that hinders long-term success (Hindle & Carpenter, 2011; Adolfsson et al., 2002). This type of approach is often focused on weight loss (Lindvall et al., 2010) as the ultimate goal, may use dieting as a main strategy, and often utilizes a strict approach to weight management (Hindle & Carpenter, 2011; Lindvall et al., 2010). An approach that is based on unrealistic goals and expectations also hinders long-term success (Hindle & Carpenter, 2011; Jones et al., 2007; Adolfsson et al., 2002). Finally, approaches that are inconsistent with the daily life of the patient may hinder long-term success (Adolfsson et al., 2002; Lindvall et al., 2010). In other words, patients who have difficulty applying their approach for long-term weight management to everyday life may find it hard to succeed.

Approaches that promote success aim for long-term maintenance of behaviors (Hindle & Carpenter, 2011; Lindvall et al., 2010). Avoiding a dieting or a weight loss approach (Hindle & Carpenter, 2011; Jones et al., 2007; Lindvall et al., 2010) and instead using a lifestyle approach that is more relaxed (Hindle & Carpenter, 2011; Adolfsson et al., 2002) was seen to promote success. A successful approach should also be goal oriented and use realistic goals (Hindle & Carpenter, 2011). Developing routines (Jones et al., 2007; Adolfsson et al., 2002; Lindvall et al., 2010) and self-monitoring (Hindle & Carpenter, 2011; Jones et al., 2007; Adolfsson et al., 2002; Lindvall et al., 2010) were often helpful. Accepting and overcoming lapses in new behaviors was also important (Hindle & Carpenter, 2011). Finally, self-awareness, a positive outlook and a holistic view of health were often associated with success (Lindvall et al., 2010). Self-awareness may include an awareness of personal needs and desires (Hindle & Carpenter, 2011; Lindvall et al., 2010). A positive outlook could be seen in individuals who found joy in healthy choices (Hindle & Carpenter, 2011; Lindvall et al., 2010) and accepted their bodies (Lindvall et al., 2010).

5.2 Factors motivating lifestyle change

Several types of motivation were identified related to lifestyle change in obese and overweight patients. The main categories were health-related, support-related, appearance-related and autonomous motivation. Catalysts for change, which are often negative forces or occurrences that quicken the change process, were also identified.

Health-related motivation includes knowledge of health risks (Jones et al., 2007) and of the health benefits of one's choices (Lindvall et al., 2010). Advice from a health professional may be the source of this knowledge (Hindle & Carpenter, 2011). Some individuals were motivated to change their behavior or to maintain lifestyle changes due to improved psychological health (Visram et al., 2009), increased personal well-being (Hindle & Carpenter, 2011; Jones et al., 2007; Lindvall et al., 2010), and increased self-esteem (Jones et al., 2007; Visram et al., 2009). Some also experienced reduced isolation (Visram et al., 2009) and improved social life (Jones et al., 2007) and were motivated by this success. Finally, many experienced improved quality of life, both as individuals and for their families (Jones et al., 2007; Visram et al., 2009). This included feeling happier (Jones et al., 2007) and experiencing increased energy (Jones et al., 2007), fitness and mobility (Jones et al., 2007; Visram et al., 2009; Lindvall et al., 2010), and confidence (Jones et al., 2007). These health-related factors were seen to contribute to motivation for making and maintaining lifestyle changes.

Support-related motivation included support from professionals (Hindle & Carpenter, 2011; Jones et al., 2007; Visram et al., 2009), family support (Hindle & Carpenter, 2011; Visram et al., 2009; Lindvall et al., 2010) and social support (Hindle & Carpenter, 2011; Jones et al., 2007; Adolfsson et al., 2002; Visram et al., 2009; Lindvall et al., 2010). A positive relationship with a healthcare provider (Jones et al., 2007) was a motivating factor, as was practical and personalized advice (Hindle & Carpenter, 2011; Jones et al., 2007; Visram et al., 2009). Encouragement (Jones et al., 2007), empathy and non-judgmental support (Visram et al., 2009) also increased motivation. Social support from others seeking to make behavioral changes allowed individuals to learn from each other (Visram et al., 2009) and engage in partnership

toward a common goal (Hindle & Carpenter, 2011; Visram et al., 2009). Accountability was also important (Hindle & Carpenter, 2011; Jones et al., 2007; Adolfsson et al., 2002). Long-term support was important for maintaining change (Jones et al., 2007; Visram et al., 2009), as was positive reinforcement (Hindle & Carpenter, 2011; Jones et al., 2007).

Autonomous motivation was especially important for adherence to lifestyle change. Themes related to autonomous motivation included recognizing one's personal responsibility for health promotion (Hindle & Carpenter, 2011; Jones et al., 2007), taking ownership of the new lifestyle (Hindle & Carpenter, 2011), and a sense of self-efficacy (Adolfsson et al., 2002; Visram et al., 2009). Taking pride in personal weight loss (Jones et al., 2007; Visram et al., 2009) and personal satisfaction (Hindle & Carpenter, 2011) were also related. Lastly, being a role model (Hindle & Carpenter, 2011; Lindvall et al., 2010) and helping others (Hindle & Carpenter, 2011) increased autonomous motivation.

In some cases, motivation was related to appearance (Visram et al., 2009; Lindvall et al., 2010). However, this type of motivation was most closely related to a weight-loss approach. For example, behavior change could be motivated by a thin body ideal (Lindvall et al., 2010) or being able to fit into clothes (Jones et al., 2007; Visram et al., 2009).

Catalysts for change identified in the literature included the fear of health risks associated with obesity (Jones et al., 2007; Adolfsson et al., 2002; Visram et al., 2009; Lindvall et al., 2010) or a referral from a healthcare professional (Visram et al., 2009). Stigmatization and prejudice due to obesity and overweight also served to quicken the change process (Visram et al., 2009). The presence of a saboteur in the family could have a similar effect (Visram et al., 2009).

5.3 Factors undermining motivation

Factors that were seen to undermine motivation included those affecting autonomous motivation, barriers to change, and barriers to adherence. Individuals that lack a personal reason for long-term weight management may not be highly motivated

(Hindle & Carpenter, 2011; Jones et al., 2007). A lack of sense of personal responsibility may also undermine autonomous motivation (Adolfsson et al., 2002). Denial, low self-efficacy and low self-confidence also played a role (Jones et al., 2007).

Barriers to change included a fear of change (Adolfsson et al., 2002) and a belief that change is difficult (Jones et al., 2007). Some individuals failed to take ownership of the change (Hindle & Carpenter, 2011; Adolfsson et al., 2002). Some lacked control over their actions (Jones et al., 2007; Lindvall et al., 2010). Making changes that were incongruent with the lifestyle was also problematic for adherence (Hindle & Carpenter, 2011).

Barriers to adherence included a lack of support (Adolfsson et al., 2002) and a lack of positive reinforcement (Hindle & Carpenter, 2011). Unaddressed emotions such as negative emotions, stress and depression were also barriers to adherence (Jones et al., 2007; Adolfsson et al., 2002) and contributed to lapses in new behaviors through, for example, seeking comfort in food (Adolfsson et al., 2002). Adherence can also be hindered by a lack of control (Jones et al., 2007; Lindvall et al., 2010) over one's behaviors or a lack of accountability (Adolfsson et al., 2002) for one's behaviors.

6 Discussion

Adherence is clearly an important concept for long-term weight management and lifestyle change. In this literature review, a distinction was seen between barriers to change and barriers to adherence. Barriers to change prevented individuals from taking the initial steps they needed to make behavior changes, whereas barriers to adherence prevented them from maintaining new behaviors and truly adopting a new lifestyle. If health promotion is the aim of obesity treatment, then adherence is crucial, not only for long-term weight management, but for sustaining health benefits.

The literature in this review supports the notion that behavior change motivated from within the individual, i.e. autonomous motivation, is more likely to lead to meaningful and lasting behavioral change. Individuals that were successful in maintaining their

weight were autonomously motivated (Hindle & Carpenter, 2011, 349). Moreover, factors undermining motivation were largely related to a lack of autonomous motivation, further suggesting the importance of autonomous motivation over other forms of motivation.

Intrinsic motivation and the concept of ownership seem to be closely related. In this review, taking ownership of the new lifestyle was an important theme. Individuals successful in weight maintenance felt in control of the weight management process and had a sense of ownership regarding the process (Hindle & Carpenter, 2011, 346). Ownership refers to making new behaviors and a new lifestyle 'one's own' rather than simply following directions or reacting to circumstances. Ownership also allows for congruency between obesity treatment and one's lifestyle. This is important for effective lifestyle change. When a sense of congruency was missing, it became a barrier to change. A participant describes this phenomenon well: "I didn't really feel that I was living a life it was almost as if there was a diet and then there was life, and never the two should meet" (Hindle & Carpenter, 2011, 344). Ownership seems to be a form of intrinsic motivation, allowing the individual to act on his or her circumstances and be in control rather than simply responding to outside influences.

Support-related motivation comes from outside of the individual and is therefore not a form of intrinsic motivation. However, according to Deci & Ryan, intrinsic motivation can be enhanced with support (2002). This review revealed that support is an important motivator for lifestyle change and that a lack of support is a barrier to adherence. It is possible that support-related motivators such as positive reinforcement, encouragement, non-judgmental support and personalized advice may have the power to influence intrinsic motivation by, for example, increasing perceived self-efficacy or helping individuals develop a sense of personal responsibility for their health. The relationship between support and intrinsic motivation would be an interesting topic for future research.

According to previous research, stigmatization due to obesity is a threat to health and can interfere with obesity treatment (Puhl & Heuer, 2010). However, in this review, stigmatization was identified as a catalyst for change, as were prejudice and the

presence of a saboteur. This poses an interesting contradiction and could provide a future topic for research.

Based on the results of this review, there was a clear distinction between approaches to weight management that either hindered or promoted long-term success. Themes categorized as hindering success were linked to a weight loss approach, whereas themes categorized as promoting success included many approaches consistent with the HAES paradigm. This distinction seems to support the call for a shift from the current weight loss paradigm to a health promotion paradigm.

It also became apparent that motivation and approach are closely related. Approaches to weight management that were strict, focused on dieting or aimed at weight loss were seen to hinder long-term success. It appears that individuals who are motivated by a thin body ideal gravitate towards a weight loss or dieting approach. Rather than adopting a holistic view of health with health promotion as the goal of weight management, they adopt an approach that reflects their motivation, which is primarily weight-related rather than health-related. On the other hand, individuals that took a lifestyle approach consistent with the health promotion paradigm were motivated less by appearance-related motivation and more by health-related and support-related factors. Their success indicates that certain forms of motivation may be more valuable than others for long-term weight loss management and for promoting health.

Hindle and Carpenter discovered that weight maintainers were successful when they consciously changed their approach from a dieting mentality to a relaxed long-term approach in which they recognized that changes needed to last for life (2011, 345). Nurses have an opportunity to help shape their patients' weight management approach through education and support. This is the nurse's role in health promotion for obese and overweight patients. The results of this coincide with Pender's recommendations for nurses in supporting lifestyle change for patients (Pender et al., 2011). A positive relationship with the nurse helps create a positive climate for change, as do encouragement and empathy from the nurse. The nurse can assist in the change process through giving practical and personalized advice. She can support adherence by providing long-term support and positive reinforcement.

6.1 Study limits

This study aimed to identify motivating factors for lifestyle change in obese and overweight adults. For this reason, research that focused on children, adolescents, and elderly was excluded. Also, minority populations and special cases such as eating disorders or mental illness in conjunction with obesity were not accounted for. The results of the review have limited generalizability, since they are based on studies that used qualitative interviews that reflect the views of the participants and not the population as a whole.

Although a systematic approach for this study was used, the literature review should not be considered comprehensive. Limited access to articles and databases may have affected the results of the review, as relevant articles may have been missed. A limited time frame for the study also affected the search strategies used. With more time, a broader range of search strategies could have been utilized, possibly leading to the discovery of more relevant articles.

During the literature search, I had difficulty finding relevant literature. This may have been due to the varied terminology used relating to motivation. Few articles had motivation as a keyword, making it necessary to search for concepts related to motivation, such as patient attitudes and intentions or facilitators to change. Some of the resulting articles were related to motivation, but not all specifically addressed the research question. The apparent lack of literature addressing motivation for lifestyle change suggests that little research has been done in this area. Since there was little relevant literature available, and since the available literature was often not primarily focused on motivation, it is possible that the research question was not fully answered. More research is needed in this area to identify types of motivation affecting adherence to lifestyle change and to explore how nurses can support patients in this change.

6.2 Ethical considerations

Ethical principles important in health care research include respecting the autonomy of research subjects, avoiding harm, and protecting privacy and data. In this study, data was collected solely from previously published studies, therefore no informed consent was required.

While doing this study, various steps were taken to ensure its reliability. A systematic approach was used for the literature review. This approach is described in detail in the methods section to increase the transparency of the study. Literature included in the review was critically appraised to ensure its validity. It was also read carefully prior to the analysis to develop an understanding of the data as a whole.

The content analysis method is advantageous because data is taken directly from empirical resources. As themes were identified and clustered into categories, a system was used to make it easy to refer back to the text. This ensured that the results were grounded in the data and remained true to the original meaning of the text.

7 Conclusion

In this study, a literature review was conducted to answer the question “What factors motivate obese and overweight patients to adhere to lifestyle changes for long-term weight management?” The literature revealed several types of motivation, including health-related, support-related, appearance-related and autonomous motivation, as well as catalysts for change. Approaches for weight management and factors undermining motivation were also identified in the review. Autonomous motivation and a lifestyle approach to long-term weight management were linked to success and are also consistent with a health promotion paradigm.

Autonomous motivation comes from within the individual, posing an interesting challenge for nurses who seek to support patients in making lifestyle changes. The evidence shows that knowledge of the health risks and health benefits of one’s lifestyle choices are helpful motivators; this is a clear starting point for how nurses can

support their patients. The nurse also has the opportunity to influence the patient's approach for weight management, promoting a long-term lifestyle approach grounded in health promotion rather than in weight loss. Further research is needed to better understand how nurses can influence patient motivation for lifestyle change. How to transition from a focus on weight loss to a health promotion approach is also an important future topic.

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Appendix A : Summary of articles included in the literature review

| Article | Type of Research | Study aims | Method | Participants | Results | Limitations |
|-------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Hindle & Carpenter, 2011 | Qualitative, phenomenological study | To explore the experiences, perceptions and feelings of people successful at long-term weight maintenance | In-depth, semi-structured interviews ca. 45 minutes in length, exploratory questions, data saturation achieved after 1 interview each | 10 participants, responded to advertisement, mean age 44, Caucasian females | Successful weight maintenance is associated with autonomous motivation, a flexible approach within a personal framework and the availability of support | Small-scale study, only female participants, results may not be easily transferable |
| 2 Jones et al., 2007 | Qualitative, phenomenological study | To collect patients' views on dietetic service, treatment outcomes in terms of lifestyle change, and the impact that attending the dietetic service had on their lives to improve treatment | Semi-structured one-to-one interviews, open-ended questions and probes, saturation point reached after 24 interviews, content analysis | 24 adult obese patients attending dietetic clinics in Ayrshire, West of Scotland for weight management, 18 female and 6 male, 14 participants ≥ 50 years old | Four main themes: accessibility of services, facilitators to change, barriers to change, impact of weight loss | Small sample, short-term study, not representative of the obese population as a whole |
| 3 Adolfsson et al., 2002 | Qualitative and explorative study, phenomenological | To identify which factors are considered important for eating habits and weight change in obese participants | Longitudinal study, 4 semi-structured interviews (3 during a one-year program and once one year after program ended), open-ended questions, interviews lasted 1-1.5 hours | 15 obese participants from the Stockholm area, 12 women and 3 men, participated in a one-year weight reduction program, ages 32-68, | Treatment needs are not met unless emotions and factors other than hunger are addressed, motivational phase is needed to evaluate problem behaviors and | Small sample size but sufficient for this study; did not seek to be generalizable, but to explore a range of responses; questions did not consider physical activity |

| | | | | | | |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | prepare for lifestyle change, support for weight maintenance is important | Small sample size, limited generalizability, possible bias due to obesity stigmatization and non-obese researchers |
| 4 Visram et al., 2009 | Qualitative and explorative study, phenomenological | To explore patients' beliefs about weight gain, triggers to seeking help for weight loss, and factors contributing to successful weight maintenance | Semi-structured interviews, lasted 30-60 minutes | 20 overweight and obese patients, recently completed a primary care-based weight management program, ages 21-70, 15 females and 5 males | Triggers to action for weight loss include intrinsic (eg. health concerns, loss of function and mobility) and extrinsic (eg. family and friends, health professionals) motivators. Personalized messages and ongoing support are important for weight maintenance. | |
| 5 Lindvall et al., 2010 | Qualitative grounded theory study | To explore attitudes, behaviors and strategies important for primary weight maintenance in a middle-aged population | In-depth interviews, interviews lasted 45-150 minutes, emergent design, grounded theory analysis | 23 maintainers and 4 slight gainers in Sweden, purposively sampled based on participation in Vasterbotten Intervention Program | Weight maintenance is seen as a tight rope walk; staying on it is influenced by 1) prerequisites for maintaining weight 2) mental preparedness to maintain/change weight and 3) actions needed on their side to maintain weight. Four strategies for the tight rope walk – to rely on | Model needs to be tested before being put into practice, but can help enhance understanding of how people differ in relation to food and physical activity |



heritage, find the joy, find the routine, and be in control. There is great variety with regards to attitudes, strategies and behaviors for weight maintenances.



Appendix B – Example of analyzing process from text to category



During the coding process, themes were identified in the text. Next, the themes were clustered into sub-categories and main categories.