Psychological attachment in obesity: the significance for bariatric surgery

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General introduction and Outline of the thesis

Floor Aarts
Morbid obesity: definition and treatment

Obesity is a growing health problem and can be described as having disproportionately more body weight in relation to body height.\(^1\)\(^2\) The most common used classification for obesity is Body Mass Index (BMI), defined as weight in kilograms divided by height in squared meters. A person with a BMI above 25 kg/m\(^2\) is considered overweight, with a BMI above 30 kg/m\(^2\) obese and with a BMI above 40 kg/m\(^2\) morbid obese.\(^3\)

After an increase in the past decades, worldwide more than 20% of the adults are overweight and approximately 10% are obese.\(^4\) In The Netherlands in 2012, 48% of the population were overweight, and 12% were obese.\(^5\) Some other European countries and the US show even higher rates. The prevalence of overweight in the US in 2007–2008 was 68%, and the prevalence of obesity in 2012 was 34.9%.\(^6\)\(^7\) Although obesity rates remain high, the prevalence of obesity remained relatively stable the last years.\(^7\)

Obesity is seen as a chronic disease. It is associated with several diseases and conditions such as, type 2 diabetes mellitus, hypertension, dyslipidemia, coronary heart diseases, obstructive sleep apnoea syndrome (OSAS), cancer, psychopathology and increased mortality.\(^8\)\(^9\) Since obesity is often combined with somatic and psychological problems, the overall health care costs related to obesity are higher than for non-obese subjects.\(^10\)

Dietary and exercise regimens are used as primary treatment for obesity. However, patients with morbid obesity seem to respond poorly to this traditional form of treatment and therefore turn to bariatric surgery.\(^11\) Bariatric surgery, which consists of several surgical weight loss procedures is currently the treatment of choice for patients with morbid obesity when conservative regimens have failed.\(^12\)\(^14\)

A common type of bariatric surgery is the gastric bypass operation. This procedure combines two alterations: restriction of gastric volume (limitation of food intake) and diversion of the ingested nutrients away from the proximal small intestine.\(^15\) The gastric bypass procedure creates a small gastric pouch via stapling (10-30 ml), and a limb of the jejunum (small intestine) is attached directly to the pouch, which results in ingested food bypassing 90% of the stomach, the duodenum, and the upper portions of the small intestine (Figure 1).\(^16\)
Several studies have reported long-term follow-up results of weight loss and quality of life in patients after gastric bypass surgery. The majority of the patients lose 25-35% of their initial body weight with gastric bypass surgery within one year after surgery. Although the majority of patients benefit from a gastric bypass operation, there is still a small but considerable portion of patients who are unable to benefit optimally from a gastric bypass operation in terms of weight loss and quality of life. The amount of weight loss after gastric bypass surgery will to a large extent depend on the degree to which the patient succeeds in adopting healthy dietary behavior. Both being successful in adopting healthy dietary recommendations and a person’s ability to bring about enduring changes in quality of life will be determined by psychological factors.

**Psychological aspects**

A standard component of the clinical evaluation of candidates applying for bariatric surgery is a pre-surgical psychological assessment to identify possible indicators of suboptimal adherence and outcomes. A history of psychiatric problems and current psychiatric comorbidity (e.g., anxiety and depression) are among the factors assessed. The importance of these factors is
supported by studies showing that psychiatric comorbidity was associated with less weight loss after the initial year of the gastric bypass operation.\textsuperscript{24-26} This relationship may be explained by difficulties with adherence to dietary and/or exercise recommendations.\textsuperscript{27}

The focus of this thesis is on attachment representations, habitual states of mind with respect to interpersonal relations. It is expected that—in addition to and related to current and past psychological problems—patients’ attachment representations will influence adherence to dietary recommendations. Moreover, attachment theory is expected to be a relevant determinant of preoperative and postoperative quality of life in the group of patients with morbid obesity.\textsuperscript{28, 29}

**Attachment theory**

According to attachment theory, people internalize early childhood experiences that centre around the interaction with primary caregivers resulting in enduring beliefs and expectations (i.e., internal working models or schemes) about the self (e.g., as worthy of love and care) and about others (e.g., as trustworthy and caring).\textsuperscript{30-33} These enduring expectations are referred to as attachment representations and in adulthood have been conceptualized as a set of mental states concerning anxiety about rejection and abandonment, and avoidance of intimacy and interdependence.\textsuperscript{30, 31, 34} Attachment representations impact among other things the way people regulate emotions and deal with stress.\textsuperscript{35, 36}

**Description of attachment representations**

Figure 2 presents a two dimensional, four categorical model of adult attachment. Attachment representations have been characterized by their position on two dimensions reflecting anxiety and avoidance.\textsuperscript{37}

Persons who are securely attached (i.e., those low on attachment anxiety and low on attachment avoidance) have a positive view of the self and a positive view of others, are self-confident, explorative (e.g. curious, problem solving) and are comfortable in seeking support when needed.\textsuperscript{38} They have a sense of social resiliency, that is, they dispose over psychosocial skills (e.g. social and communicative competences) and are capable to use a broad range of coping strategies (e.g. social support, active problem solving) in times of stress.\textsuperscript{39}

Persons who are anxiously attached (i.e., those high on attachment anxiety) have a negative view of the self and a positive view of others, feel fragile, unlovable and unworthy of care and are hypervigilant for rejection or abandonment. Their sense of vulnerability and hypervigilance
for threats results in high levels of perceived stress and distress. They have been found to make stronger attempts to seek proximity in order to try and elicit increased attention and support from others often to the point of being ‘clingy’ in order to regulate their emotions.40, 41 Despite their strong desire for closeness and reassurance, research shows that support is hardly effective in reducing distress in these people.42

![Figure 2. Two dimensional model of adult attachment related to the four attachment representations](image)

Persons who are avoidantly attached (i.e., those high on attachment avoidance), have a positive view of the self and a negative view of others, perceive others as unavailable and unable to provide adequate support when needed, and therefore value independency and self-reliance.43, 44 As a way to reinforce their self-sufficiency and to avoid relationships with others, they tend to dismiss symptoms of distress and vulnerability.38 They deal with stressors by distancing, avoiding and repressing negative emotions.45-48

Persons who are disorganized attached (i.e. those high on attachment anxiety and high on attachment avoidance) are a mixture of both characteristics, the avoidant and anxious attachment pattern.37 They have a negative view of both self and others. They are cautious, avoidant, and distrustful and expect others to be harsh or rejecting and experience difficulties with assertiveness (shy) and social inhibition (timid).49, 50 Although they may experience intense negative affect, they rather suffer than seek help.51, 52
Attachment as predictor of dietary adherence

Both attachment anxiety and attachment avoidance have been found to be related to poorer adherence to medical regimens in chronically ill patients.\textsuperscript{53, 54}

More anxiously attached patients have been consistently shown to be more prone to distress when confronted with stressors.\textsuperscript{28} In stressful situations people high on attachment anxiety may view themselves unable to deal with the stressors and they may rely on smoking, alcohol and high caloric food to regulate their emotions.\textsuperscript{39, 55, 56} In accordance, attachment anxiety has been found to be associated with obesity in both children and adults.\textsuperscript{56, 57} Due to their high levels of distress and their tendency to rely on external and behavioural modulators of affect such as high caloric food, more anxiously attached patients can be expected to find it more difficult to adhere to dietary recommendations after bariatric surgery.

More avoidantly attached patients, on the other hand, stress the importance of independence and self-reliance, are reluctant to seek support and feel uncomfortable trusting others, including health care providers.\textsuperscript{43, 44} Due to their high level of self-reliance and low collaboration with health care providers, it can be expected that they will be less adherent to dietary recommendations after bariatric surgery as well.

Attachment as predictor for quality of life

The improvement in quality of life after bariatric surgery will in addition to the amount of weight loss depend on individual characteristics\textsuperscript{58} such as one's attachment representations. Both attachment anxiety and attachment avoidance have been uniformly found to be associated with impaired mental and physical functioning in healthy people,\textsuperscript{28, 29} chronically ill patients\textsuperscript{59} and morbidly obese patients.\textsuperscript{60} In a cross-sectional study in morbidly obese bariatric surgery candidates an association between attachment avoidance and poor mental health quality of life was observed,\textsuperscript{60} but it is as yet unknown whether attachment representations impact the postoperative course of quality of life.

The effect of gastric bypass on family members

The development of obesity is multifactorial with a sedentary lifestyle and a hypercaloric diet playing important roles.\textsuperscript{61} Parental weight has proven to be one of the most important independent predictors of childhood obesity, and consequently of obesity in adulthood.\textsuperscript{62, 63} While parents and children share both genetic and environmental factors, if one's partner becomes obese, the likelihood that the other partner will become obese is increased by 37%.\textsuperscript{64} Following
gastric bypass, patients are instructed to implement diet and lifestyle changes which may lead to partners and children mimicking the altered behaviours of the patients undergoing gastric bypass surgery.\textsuperscript{55}

**Outline of this thesis**

This thesis examines social and emotional aspects of bariatric surgery and obesity with a focus on attachment representations. In this thesis we approached this subject on two levels: (1) the aim of the first part is to examine the role of patients’ attachment representations in obesity and the assessment before bariatric surgery (2) the second part focuses on the postoperative situation by examining attachment representations as a predictor of the treatment outcome of gastric bypass surgery for morbid obesity and the effect of gastric bypass surgery on weight and eating behavior of family members. Chapter 2 presents a systematic review of the main topic of this thesis. Next, the three preoperative cross-sectional studies are described in chapters 3, 4 and 5 and the three postoperative longitudinal studies in chapters 6, 7 and 8 (Figure 3).

**Part I: Attachment representations, obesity and preoperative assessment**

It is now clear that the aetiology of many chronic diseases including obesity concerns not only genetic and current environmental factors, but also the way in which early repeated interactions with significant others results in enduring ways of reacting to stress and dealing with negative affectivity. In chapter 2 we systematically evaluate the existing evidence on attachment representations in relation to obesity.

The main focus of the next three chapters lies on the role of attachment on mental well being and functioning in the group of patients referred for bariatric surgery.

Attachment may influence many aspects psychologists are likely to incorporate into their evaluation, including the anxious and depressive symptoms patients’ experience. The aim of Chapter 3 was to examine whether patients’ self-reported attachment representations and levels of depression and anxiety were associated with psychologists’ evaluations of patients with morbid obesity applying for bariatric surgery.

Chapter 4 examines in patients applying for bariatric surgery the association of attachment representations and coping styles on the one hand with mental health and physical functioning on the other. Less securely attached patients (those high on attachment anxiety or attachment...
avoidance) may use more ineffective coping strategies which in turn may increase the risk at mental problems and limitations in physical functioning in patients suffering from morbid obesity.

Obesity may be a factor contributing to mental health problems in patients seeking bariatric surgery. Whether or not a person uses mental health care for one’s psychological problems may have its roots in attachment behaviour. In Chapter 5 attachment behavior is hypothesized to be associated with mental health care utilization in morbidly obese patients seeking bariatric surgery.

Part II: Postoperative: attachment representations and effect on family members
There is a small but considerable proportion of patients who are unable to benefit optimally from a gastric bypass operation in terms of weight loss. The final outcome of the operation will to a large extent depend on the degree to which the patient succeeds in adopting healthy dietary recommendations. Current and past psychological problems and attachment representations are expected to be determinants of adherence to dietary recommendations.

In Chapter 6 we aimed to examine the mediating role of adherence to dietary recommendations between on the one hand, current and past psychological problems, attachment anxiety and attachment avoidance, and on the other hand, weight reduction one year after gastric bypass surgery.

The main aim of Chapter 7 was to examine whether attachment anxiety and attachment avoidance, independent of body mass index (BMI), predict the level and course of physical functioning and mental well-being after gastric bypass surgery. The improvement in quality of life after bariatric surgery will in addition to the amount of weight loss depend on individual characteristics such as one's attachment representations.

Chapter 8 describes a 1-year longitudinal study examining weight and eating behavior changes in cohabitating family members of patients after gastric bypass surgery. Obesity is increasingly recognized as a family trait, with family members imitating each other's lifestyle. Following bariatric surgery, patients are assumed to implement diet and lifestyle changes which are expected to have a positive effect on the body weight of family members.
Chapter 1
Attachment representations

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