Psychological well-being and relationship changes in women after obesity surgery

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PSYCHOLOGICAL WELL-BEING AND
RELATIONSHIP CHANGES IN
WOMEN AFTER OBESITY
SURGERY

by

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Bachelor of Arts
University of Maine
1998

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ABSTRACT

Psychological Well-Being and Relationship Changes in Women after Obesity Surgery

by

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The present study explored changes in patients' psychological well-being and relationship adjustment at three- and six-months after either Lap-Band or Gastric Bypass Surgery. Sixty-eight women completed the battery, which consisted of standardized questionnaires of self-esteem, body-image, psychological symptomatology, and assertiveness, as well as marital and sexual functioning, prior to surgery and then at the two follow-ups. Also included was the assessment of patient expectations of relationship change and the pilot Weight-Related Relationship Adjustment Questionnaires (WRRAQ's). Pilot WRRAQ's were designed for the purpose of the study, based on retrospective patient narratives, and assessed parenting, work, family, and friend relationship domains. Psychometric properties of the WRRAQ's were examined and determined to be acceptable to good. Results indicate that obesity surgery had a positive effect on all aspects of psychological well-being, and on a number of relationships, with the exception of marital and sexual functioning. Patients’ expectations of relationship improvement were positively correlated with friendship improvement, but negatively
related to changes in marital adjustment. In summary, the findings of this study support a systems perspective of morbid obesity and highlight the importance of understanding patient expectations and utilizing disease-specific measures to assess patient progress and design interventions to facilitate positive outcome.
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CHAPTER 1

INTRODUCTION

Surgery for morbid obesity results in dramatic physical changes, but also in substantial changes to various psychosocial aspects of patients’ lives. The nature of these changes has been the focus of research attention, not only because it is an important quality of life issue, but because the extent to which patients cope with these changes may, in fact, be an important determinant of long term surgery outcome. In other words, dramatic weight loss can change people’s lives and the experienced valence of these changes may determine whether weight loss is maintained or not.

Studies have reported changes in mood, assertion, social activity, occupational status, eating behavior, body image, marital satisfaction, and sexual functioning (Bocchieri, Meana, & Fisher, 2001). In recent attempts to deepen our understanding of these weight loss consequences, it has become increasingly evident that psychosocial changes are experienced differently by individual patients and that these changes are best conceptualized as heterogeneous and complex. In a qualitative study by Bocchieri, Meana, and Fisher (2002a), patients provided rich retrospective accounts of the psychosocial changes they perceived to have occurred consequent to surgery. Based on patient descriptions, these changes were classified as either unequivocally positive or as tension-generating. The tension-generating changes were not necessarily negative, but
posed challenges in the patients' lives. They were the type of changes that required
negotiation; that required patients to learn new skills or cope with a set of issues that had
not been prominent pre-surgery. Uncovering the intricacies of the psychosocial aftermath
of surgery still remains a challenge for researchers, but there is increasing support for the
contention that obesity surgery may be a life altering event on numerous, varied
dimensions.

The most significant of these dimensions may be that of relationships. As patients
lose weight rapidly and find themselves approaching looking "normal," they report
significant changes in the way they relate to others and others relate to them. Bocchieri,
et al. (2002a) found that no type of relationship seemed immune to change following
significant weight loss, from marital to parental to family of origin, to work relationships,
as well as friendships. Some patients regarded these relationship changes as positive; they
reported a newfound respect, closeness, or attraction. However, relationship changes also
generated tension for many patients. This does not necessarily mean that the changes
were entirely negative in nature, although this did also happen, but that adjusting to new
relational dynamics was challenging. Significant reconstruction and reevaluation of social
relationships ensued. In some cases, patients felt in a better position to modify or
terminate relationships that were no longer compatible with their new self-perception.

The fact that Bocchieri, et al. (2002a) found substantial variation in the way that
surgery was perceived to affect relationships suggests that certain factors may mediate
relationship change following surgery. In addition, there may be prophylactic factors
present in presurgical relationships that decrease the likelihood of postoperative changes
generating tension. The identification of these mediating and prophylactic factors

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involved in relationship change may be important. Patients often report that they were unprepared for the relationship changes they encountered postoperatively. Research attempts to explore relationship change could serve to better inform and prepare patients who are undergoing the procedure. In addition to altering relationship status, the tension generated in patient relationships may also impact their weight loss progress. This is especially likely to be the case when weight loss is rapid and dramatic as in the case of obesity surgery. Stuart and Jacobson (1989) advocate "rest stops" in their comprehensive non-surgical weight loss treatment in an attempt to help patients psychologically adjust to tension-generating changes at each phase in their weight loss. These "rest stops" become far less feasible when one undergoes surgical treatment. Patients are not afforded time, at least initially, to gradually adjust to and negotiate relationship change. The result may be to try to cease the progression of their weight loss or regain their weight altogether. Again, research of and attention to the nature of post-operative change could provide patients with the tools to successfully negotiate the tumult and reach weight loss goals.

An examination of the literature yields a paucity of studies that have directly investigated relationship change following surgery for morbid obesity. Few conclusions can be drawn based on the data available. There are several possible explanations as to why the conceptual picture remains unclear: 1) underlying researcher bias that relationships and particular aspects of relationships, such as sexuality, are not central to the lives of obese individuals may limit the quantity and quality of studies conducted in this area; 2) assessment measures utilized vary considerably, are typically unstandardized, and commonly a small part of a larger battery or an item in an unspecified questionnaire; 3) obese persons represent a heterogeneous group with diverse
attributes and varied relationship characteristics; and 4) there has been no theoretical anchoring of hypothesized post-surgical changes.

There is, however, a theoretical perspective and significant body of literature suggesting that the symptom of obesity can be conceptualized to exist as part of the larger system of the family. This family systems perspective suggests that relationship patterns contribute to the etiology and maintenance of obesity, and, in turn, the symptom of obesity maintains the system of the relationship (Fischmann-Havstad & Marston, 1984; Ganley, 1986; Hamilton & Zimmerman, 1985; Harkaway, 1983; Marshall & Neill, 1977; Sobal, Rauschenbach, & Frongillo, 1995). Although there is increased recognition of the substantial contribution of genetic factors in the etiology of morbid obesity (Bouchard, 2002), environmental factors continue to be considered important in its development and maintenance. Several authors have speculated that a conceptual shift - from obesity as an individual problem, to obesity as an ecological problem - could have a dramatic influence on the future of obesity research and treatment (Ganley, 1986; Hamilton & Zimmerman, 1985). These authors also suggest that removal of the symptom through obesity surgery can result in a dramatic upheaval of the system of relationships.

In the present critical review of the literature, we will explore the available data pertaining to the relationships of obese individuals and then review the data available on the impact of weight loss on these relationships. The types of relationships examined will be marital, sexual, friendship, coworkers, family of origin, dating, and parenting relationships. It is not expected that much data will be available for some of these types of relationships, but it is important to cull everything we know about the relationship universe of the obese patient and how that universe gets reconfigured or not after weight loss.
loss. This review can then provide the basis for the design of prospective studies directly targeting relational change and obesity surgery. A literature search was conducted using Medline, PsychInfo, and Sociology Abstracts for the earliest available year to 2004. Various combinations of the following keywords were used in the search: obesity surgery, obesity, weight loss, relationships, marriage, dating, friendships, parenting, sexuality, sexual functioning, family of origin, dating, and social support. All types of obesity surgery articles pertaining to relationships or sexuality were included in this review. Therefore, several types of surgery will be mentioned such as, jejunoileal bypass surgery (intestinal bypass), gastric restriction, gastric bypass, and vertical banded gastroplasty. While technically different in their surgical procedure, these surgeries all share a common result - rapid, dramatic weight loss.
CHAPTER 2

REVIEW OF RELATED LITERATURE

Marital/Romantic Relationships

*Pre-Weight Loss*

Little is known about the relationship, if any, between marital dynamics and obesity (Bocchieri, et al., 2001; Sobal, 1984; Sobal, et al., 1995), and the available data is difficult to interpret. Sobal, et al. (1995) analyzed data from a large US survey to determine if there was any relationship between marital status and obesity. Controlling for many demographic, social, and physical variables, the results of their analyses provide some support for the notion that married men are more likely to be obese than never-married or previously married men. However, findings in this particular analysis do not support a parallel relationship between marital status and obesity for women, as married women tend to be no heavier, in general, than never-married or previously married females. The reasons as to why these gender differences exist are unclear. However, the authors speculate that women may place greater emphasis on slimness than men and that unmarried men may put greater emphasis on managing their weight to attract potential partners, yet lose that motivation once they enter the marital role. Women, on the other hand, may be more motivated to maintain physical attractiveness well into their marriages.
A potential relationship between morbid obesity and marital status was also indicated by preliminary data of the Swedish Obese Subjects (SOS) study (Sullivan, et al., 1993). This study was a multi-site, nationwide study designed to investigate a wide range of psychosocial aspects related to morbid obesity. Baseline evaluations of 1743 morbidly obese participants (943 women) indicated that morbidly obese males and females were more often married or cohabiting as compared to age matched controls from the general Swedish population. This finding was especially true for males, as 73% of morbidly obese males and 66.9% of controls reported cohabiting or marriage, compared to 71.8% and 69.2% of women, respectively. Whether or not these findings were significant was not reported. Based on data from a different study in which 24,000 married females responded to an unspecified questionnaire published in a national magazine, Stuart and Jacobson (1989) proposed that there are multiple ways in which weight and marriage may be related. Among this sample, the authors found that many women as well as men described having gained weight after entering the marital role. Women in this study described the “housewife” role as “the most fattening job in the world” (Stuart & Jacobson, 1989, p. 25) due to constant food preparation, decreased feelings of status, fatigue, and using food to cope with their stress. The authors also reported a difference found between happily married women and unhappily married women in terms of their weight gain within a 13-year period. Although classification criteria were not reported, those considered happily married gained an average of 18.4 pounds and those who were unhappily married gained an average of 42.6 pounds. Previous obesity, income, education or whether or not the woman had children reportedly did not better account for these differences. The authors advised using caution when interpreting these findings and...
emphasized that being obese does not mean one is necessarily in a bad marriage. The findings do suggest that unhappy marriages may be a confounding variable in the etiology and maintenance of excessive weight. This conclusion was supported by wives' accounts of their spouses' weights. Husbands in the happily married group had gained an average of 19 pounds versus the unhappily married husbands who had gained an average of 38 pounds.

Studies investigating the marital quality of obese individuals in general yield conflicting results. Based on data gathered from unspecified psychiatric interviews, Fink, Gottesfield, and Glickman (1962) found the quality of marital relationships to be generally poor among their community sample of married obese women, with only 3 out of 12 rated as being happily married. Using unspecified semi-structured interviews, the majority (the exact number was unspecified) of 12 intestinal bypass patients studied by Neill, Marshall and Yale (1978) retrospectively reported feelings of mixed satisfaction with their marriages prior to surgery. Rand, Kuldau, and Robbins (1982) compared the responses of 54 preoperative jejunoileal bypass patients on a series of questions designed to assess marital satisfaction to a group of normal weight controls. Results indicated that the majority of morbidly obese patients (70%) considered their marriages to be "good." However, significantly more morbidly obese patients described experiencing moderate to severe marital disharmony (e.g., frequent raised voice fights) as compared to controls. In addition, morbidly obese individuals in this sample were more likely to have been married two or more times than the normal weight controls. Hafner and Rogers (1990) assessed patients' spouses prior to and after gastric restriction surgery. Preoperative data indicated that levels of marital dissatisfaction, as indicated by the Marital Attitudes
Evaluation Scale (MATE) were significantly elevated compared to controls. Thus, with such scant data on the quality of marriages within which one member is obese, it is difficult to know for sure what, if any, is the relationship between obesity and marital adjustment.

Although not yet investigated directly, certain obesity-related variables consistently identified throughout the literature seem intuitively to suggest a possible negative impact on the quality of marital relationships. These variables include decreased activity level, poor self-concept, and the utilization of weight as a protective mechanism against dealing with or facing certain fears and insecurities. The social stigmatization experienced by obese individuals, in conjunction with the physical restrictions, often results in a decreased participation in social and recreational activities (Bocchieri et al, 2002a; Fink et al, 1962; Goble, Rand & Kuldau, 1986; Solow, 1977). The larger they become, the more restricted their lives. This process results in a narrowing of the boundaries that define them as individuals and the boundaries that define their relationships (Goble et al., 1986). Their personal and relational worlds become smaller. In addition to confining themselves to activities of the home, many morbidly obese patients become increasingly dependent on their spouses for responsibilities of daily living, such as housework, tying their shoes, and, in extreme cases, maintaining personal hygiene (Bocchieri et al, 2002a). This dependency may be threefold: physical, financial, and emotional. It seems reasonable to posit that isolation, inactivity, and dependency may have a profound impact on the marital system. Based on clinical impressions and a review of the literature, Meissner (1966) has commented on how this pattern of reciprocal functioning, in which
one partner assumes the dominant/powerful role while the other assumes a passive/dependent role, tends to be a recurring process in psychosomatic families.

Obesity is also associated with a decreased self-concept, (Bocchieri et al, 2002a; Glinski, Wetzler, & Goodman, 2001; Solow, 1977), especially for women. Self-concept encompasses several aspects pertaining to the self: self-esteem, self-confidence, assertiveness, and body image. Self-concept is likely to impact the selection of one’s partner and the dynamics within the relationship. Neill et al. (1978) found that most of the female sample of intestinal bypass patients reportedly felt lucky to be married, even though most were dissatisfied with their marriages. Similarly, Bocchieri et al. (2002a) found that the decreased value gastric bypass patients placed upon themselves when morbidly obese often contributed to them “settling” for their partner. This situation was largely maintained by the feeling that they were incapable of attracting a more desirable mate – that they themselves were not good enough. Both of these studies relied on retrospective self-report and so it remains unknown whether their appraisal of their self-concept in regards to their relationship would have been similar if assessed prior to experiencing significant weight loss. The same study by Bocchieri et al. (2002a) also found that patients reported discomfort in self-assertion, a strong fear of rejection, and a strong desire to please others. Other studies report similar findings (Glinski et al., 2001; Solow, 1977). While seemingly self-destructive, these attributes may contribute to stabilizing a relationship as the obese partner compromises their individual needs to please others. Many obese individuals refer to this as taking the “caretaker” role.

A related, but fundamentally different, finding is that for many obese individuals, the excess weight may serve as a defensive function against issues and emotional states that
are too difficult to deal with or to resolve (Bocchieri et al., 2002a; Castelnuovo-Tedesco, Weinberg, Buchanan, & Scott, 1982; Fink et al., 1962; Glinski et al., 2001; Stuart & Jacobson, 1989). These unresolved or avoided conflicts can be conceptualized as one component of a more complicated picture centered on denial and fear (Solow, 1977). Eating behavior, for example, is often reported to be a means of coping with unpleasant emotions, a way to numb their affective states (Bocchieri et al., 2002a; Glinski et al., 2001; Stuart & Jacobson, 1989). This defense mechanism may be utilized as a means to avoid conflict in the marital relationships. Often, the symptom of obesity itself serves to protect the individual from confronting issues in their relationships, as weight issues become the primary focus (Harkaway, 1983; Minuchin, Rosman, & Baker, 1978; Stuart & Jacobson, 1989).

Grounded in a systems perspective, Harkaway (1983) has described how obesity, particularly of one member of the spousal pair, can become a central theme in the couples’ lives. Because the symptom impacts their relationship on numerous dimensions, it becomes a constant source of conflict between the spouses. Harkaway (1983) describes the problem as the couple being involved in an “incongruous hierarchy” (Madanes, 1982, as cited in Harkaway, 1983) in which the obesity serves to maintain a power balance between the spouses. Each spouse’s attempt to control the symptom is viewed as a metaphor for their struggle to control the relationship. As long as the non-obese spouse is in charge of “curing” the other, and the obese spouse does not lose weight, this power is balanced. Stuart and Jacobson (1989) describe this phenomenon in terms of obesity becoming a “battleground in a power struggle” (p.62) between the couple. In their survey of married women, husbands’ attempts to control their spouses weight were often cited as
a reason for the woman to resist weight loss. The more the husbands pushed, the less the
wives budged. Such a systems conceptualization of the relational system has significant
implications for the psychosocial outcome of obesity treatment. Attempts to treat the
symptom of obesity with sole focus on the obese individual may be met with resistance,
particularly if this power balance is disrupted. The symptom of obesity, Harkaway
(1983) notes, may not just protect the power balance in the relationship, but also serve
other protective functions such as managing or not dealing with issues surrounding
intimacy and fidelity. Stuart and Jacobson (1989) suggest that overweight or obesity may
serve to mask underlying fears of marital failure because it may justify a spouse’s
disinterest or it may serve as a scapegoat reason for not leaving an abusive or
unsatisfying spouse.

The defensive or protective function of weight for the obese individual, separately or
in combination with impaired self-concept and low levels of activity described earlier,
may contribute to either stabilizing, as previously described, or destabilizing the marital
relationship (Sobal, 1984). Whether or not these characteristics will serve to stabilize or
destabilize an existing relationship may depend on the time of onset of obesity (Neill et
al., 1978; Sobal, 1984). If an individual enters into marriage as an obese person, it is
more likely that such characteristics have promoted the stability of the relationship
(Sobal, 1984). In contrast, if obesity developed during the course of the relationship,
particularly in only one of the married partners, it might be more likely to create conflict
and disharmony in the relationship. The weight discrepancy among the spousal pair may
also play a significant role in the degree to which these factors impact the marital
relationship. Similar weight, shared eating behaviors, values, and activities between two obese persons are likely to have a stabilizing relational impact (Rand et al., 1982).

Post-Weight Loss

The potential for obesity to function as a stabilizing force on marital/romantic relationships (Fink et al., 1962; Ganley, 1986; Glinski, 2001; Harkaway, 1983; Neill et al., 1978; Sobal, 1984; Sobal et al., 1995) is perhaps the most prominent theory in the obesity literature, but only dramatic weight loss can truly put this theory to the test. Increases in energy, mobility, activity, confidence and autonomy following weight loss impact the dynamics of an existing marital relationship, although it is clear that both partner and patient reactions vary considerably in response to dramatic weight loss and its associated changes. It seems that the direction in which these factors impact the stability of a relationship (enhance or disrupt) may depend on the relationship quality and the function of the obesity prior to surgery. However, the supposed change in self-concept from obesity to post-surgical weight loss poses a methodological problem that tempers interpretations of prospective studies of the impact of surgery on marital dynamics. If obesity is associated with decreased sense of self-worth and autonomy as well as an increased use of denial or defense against difficult situations, then patient reports of marital functioning and/or satisfaction assessed prior to surgery may be biased by such feelings and circumstances. On the other hand, retrospective accounts of change may be significantly biased by both faulty recall and the motivation to attribute positive impact to a behavior as momentous as deciding to have a body altering and potentially life-threatening surgery. Interpretations of both types of studies need to be guarded.
There are four prospective studies that directly investigated changes in marital relationships following obesity surgery. In their study of 54 intestinal bypass patients, Rand et al. (1982) found that obesity surgery resulted in an overall decrease in marital conflict at one year as indicated by patient responses to an unspecified interview. However, the rate of divorce was higher for the surgery patients than for comparison adults, particularly in marriages that were rated as conflicted prior to surgery. At three and five years follow up (Rand, Kowalske, & Kuldau, 1984), patients and their spouses in the remaining intact marriages still reported overall improvements in their relationship and attributed these benefits to the surgery. The conclusion of this landmark study was that in good marriages, the changes associated with surgical weight loss seem to enhance the quality of the relationship, while in poor marriages, these changes bring about increased conflict (Rand et al., 1984). A further analysis of this data by Goble et al., (1986) cited increased frequency of activities and subsequent broadening of the marital boundaries as the primary source of improved relationship satisfaction, noting that many spousal pairs felt like they were dating again. What factors then, are considered to comprise a "good" marriage presurgically; those marriages that are rated as satisfactory and considered lacking in conflict? This is difficult to determine when one examines the aforementioned literature suggesting that obese individuals may be more likely to use denial in appraising their relationships. They may rate their marriages as satisfactory either because a) they feel it is the best they could do, b) they are masking their emotions, c) they are concerned about pleasing their spouse, or d) the symptom of obesity deflects focus from relationship conflicts.
Hafner and Rogers (1990) investigated husbands' adjustments to wives weight loss one year after gastric restriction surgery. Thirty-six patients and spouses completed the Hostility and Direction of Hostility Questionnaire (HDHQ) which is designed to measure the direction of hostile thoughts, feelings, and impulses. Twelve months after surgery, the female patients' scores on the HDHQ indicated significant increases in extrapunitiveness and assertion behavior. High scores on extrapunitiveness suggest irritability, short temper, and a propensity towards blaming others for problems instead of owning responsibility for them personally. For the patients' spouses, the opposite pattern of results was found, in that extrapunitiveness and assertion behavior scores decreased. These results indicate that spouses may adapt to patients increased ease of assertion and extrapunitiveness following surgery, by tempering their own assertive and extrapunitive behavior. The authors postulate that spouses' adjustment to their wives' newfound assertion is often difficult.

A later study by Hafner (1991) found that female surgery patients reported significant decreases in self-dissatisfaction at one year, as measured by the Family Systems Semantic Differential (FSSD). Of particular interest is the finding that these women reported an increased dissatisfaction with their husbands, particularly in the area of sociability. Husbands did not report any notable differences on measures pertaining to the self at one year, although results indicated that they would prefer their wives to be less sociable. This is in contrast to presurgery, at which point mean scores indicated that they desired their wives to be more sociable. The findings of this study are interesting, as sociability - increased boundary activity - appears to have become a point of contention in their marriages. Husbands had gotten what they wished for, but then did not like it.
This contrasts with the conclusion of Goble et al. (1986), which credits increased boundary activity for the resultant increase in marital satisfaction among their sample. The Hafner study (1991) also highlights the importance of self-concept on marital change. Once patients began to appraise themselves more favorably, their husbands no longer looked as good.

Porter and Wampler (2000) conducted the most recent prospective study directly investigating post-surgical marital change. Using standardized measures of depression, marital adjustment and self-esteem, the authors assessed vertical banded gastroplasty patients preoperatively, and at 6 and 12 months. Attrition was considerable from initial assessment to each follow up period. Seventy-seven of the 95 potential respondents returned the questionnaire packet at the preoperative evaluation, fifty respondents at 6 months, and only 28 respondents at 1 year. Despite this limitation, the results of this study are interesting. Consistent with previous studies, there was an overall decrease in depression, and an increase in self-esteem. However, overall results of the Locke-Wallace Marital Adjustment Test (MAT) yielded no significant change in marital satisfaction. On closer examination, it appears that the range of change in MAT scores was actually quite large, and that the distribution tended toward bimodality with some patients either reporting increase in marital adjustment or a significant decrease. These results support the contention that surgical weight loss has variable effects on marriage. This study was not able to determine if there is a pattern in that variability as no predictors of post-surgical marital adjustment were identified. Change in MAT scores did not correlate with body mass index or any of the measures of depression or self-esteem administered. The authors conclude that the findings support Harkaway’s (1983) systemic formulation of
obesity, that the function of obesity in the relationship must be determined preoperatively in order to predict postoperative marital adjustment.

There are four prospective studies that have addressed marital functioning following obesity surgery as part of a larger battery of questions. Solow, Silberfard and Swift conducted the first of these studies in 1974, and Solow (1977) summarized the results in a later paper. Using semi-structured psychiatric interviews and unspecified questionnaires, 29 jejunoileostomy patients were assessed at six-month intervals up to an average of 34 months after surgery. Results were interpreted as indicating that newfound assertiveness among patients introduced conflict into six marriages, leading to divorce in two and separation in one. Greater confidence, assertion, and a decreased fear of rejection in the patients were cited as the primary source of novel, post-surgical stress on the relationship. In addition, Solow reported that, post-operatively, patients were less likely to use denial as a way of dealing with difficult emotions and situations. Solow reached this conclusion from patients' more realistic appraisals of their marriages following surgery, supposedly stemming from a relaxation of denial. Two patients in the sample who had consciously described their obesity as serving a protective function presurgically, stated they no longer felt the need for such a defense. In general, it appears as if increased self-concept and a consequent reduction of denial as a defense shone a spotlight on existing problems in the marital relationship that were not addressed, or perhaps even recognized, presurgically.

In another prospective study by Castelnuovo-Tedesco and Shiebel (1976), 12 female jejunoileal bypass patients were assessed at 10 months and seven patients followed up at 2 years. Semi-structured psychiatric interviews were conducted and a battery of
psychological tests was administered. The authors reported that the majority of these patients were satisfied overall with the results of surgery, citing increased confidence, assertiveness, independence, and sociability. These women began paying more attention to grooming themselves, taking a greater sense of pride in their appearance and perceived femininity. The patients also reported an increased awareness of their emotional states as indicated by scores on the Multiple Affect Adjective Checklist (MAACL).

The authors conceptualized the latter change as a psychological gain although interview responses indicated that patients' newfound experience of greater emotionality and fluctuating mood states of depression, anxiety, and hostility introduced unaccustomed conflict in marital relationships. Crisp, Kalucy, and Pilkington, (1977) found that only 2 of the 12 jejunoileal bypass patients in their sample felt that their marriages had improved while Dubovsky, Haddenhurst, Murphy, Liechty, and Coyle (1985) cited general improvements in the marriages of their sample. The latter authors assessed 36 gastroplasty patients prior to surgery and again at a mean of 26 months later by way of a semi-structured interview designed for the study. They found that the mood of the patients generally improved, as they became more active, assertive and felt they had finally gained control over their weight. The authors concluded that general improvement in marital relationships was attributable to psychological gains evinced by the patients (i.e., decreased fears of abandonment, ease of assertiveness, and greater willingness to be involved in the marriage).

Several authors have provided retrospective data on marital change following obesity surgery. The data from the first of these studies was presented in two separate articles (Marshall & Neill, 1977; Neill et al., 1978). This study directly investigated the impact of
surgery on the marriages of 12 intestinal bypass patients 22 months postsurgery (24 months in the second article, which included two additional subjects). The results of semi-structured interviews, suggested that psychosocial gains resulted in the subsequent deterioration of marital relationships. Increased assertion, autonomy, self-esteem, and activity levels, combined with an increase awareness of emotional states, were all cited as generating insecurity and fears of abandonment among the spouses, thus increasing marital conflict for both members of the spousal pair. The authors suggested that this data support the notion that obesity is a stabilizing factor in the marital system. Additionally, they provided an alternate interpretation of these findings, suggesting that the decision to have surgery and the consequent weight loss may have been the resultant attempt to resolve pre-existing conflict in a relationship, rather than the cause of it.

Although assessed as part of a larger exploration of psychosocial variables, two retrospective studies provide some useful data regarding marital change. Using the Gothenberg Quality of Life Scale with gastroplasty patients and a comparison control cholecystectomy group (gall bladder removal surgery), Isaacson, Fredrickson, Nilsson, and Hedenbro (1997) found that both male and female gastroplasty patients felt significantly more appreciated by the opposite sex than they had presurgically. The authors attributed this change to overall greater increases in self-esteem in the gastroplasty group following surgery. In a recent qualitative investigation conducted by Bocchieri et al. (2002a), patients described at length the numerous and varied perceived relationship changes following gastric bypass surgery. Among these changes was a nearly universal increase in self-concept, evident in patient reports of feeling more attractive, confident, independent, and assertive. Many discussed how the value placed on their
appearance had increased as they lost weight. For example, many women revamped their self-care routine by incorporating shopping for new apparel, wearing make-up, having their nails professionally manicured, and updating their hairstyle. While some patients reported their husbands’ reactions to their enhanced appearance as positive, others were described as responding negatively - jealousy, insecurity, and fear of abandonment surfaced. Patients also described an increased awareness of their emotional states, attributing it to food no longer being available as a coping mechanism. The upheaval of buried emotions, combined with an increase in self-confidence, supposedly resulted in the patients experiencing emotional states more vividly and in being less likely to repress them for the sake of others. Spouses were often reported to have a difficult time adjusting to patients’ newfound assertion and expressiveness. In some marriages, increased activity levels among patients tended to alleviate the responsibilities of the non-patient spouse and expand the range of couple activities, as patients were able and willing to engage in more activities. Contrarily, in some marriages, as the patient became more sociable and active outside of the home, the household responsibilities of the non-patient spouse increased and the amount of time the patient spent with the spouse decreased. Patients recounted mixed reactions to changes in spousal responsibility and roles. These reactions ranged from spouses no longer feeling needed, to feeling resentful regarding increased demands, to welcoming the changes in the activity level of the patient. For some patients who felt disabled by their obesity, the removal of the symptom provided them with the physical independence and emotional fortitude to finally leave a troubled marriage. The results of this study emphasize the heterogeneity and complexity of marital change following surgery.
In summary, the literature suggests that the ways in which obesity surgery impacts the marital system are yet to be clearly understood. Some studies have found overall improvements, while others cite increased conflict, and some authors reported bidirectional changes in their sample. The interesting thread that binds these findings is that marital change—whether it be increased conflict or improvement—can actually be explained with the same causal mechanism. Improvements in self-concept, increased boundary activity, and increased expressiveness have all been cited as altering the existing dynamics of the marital system. The overarching theme seems to be that, in those marriages in which obesity does not serve to maintain the relationship, the marriage tends to improve post-surgically. In relationships in which the stability of the marital system depends on obesity and its associated features, then the marriage is likely to deteriorate as the patient loses weight. It is also clear that patient perceptions of marital quality prior to surgery are likely to be skewed as those same qualities that served to maintain the stability of the relationship, such as denial, low-self concept, and dependency, alter the accuracy of patients’ perceptions of marital quality. More research is needed to try to overcome some of these methodological problems and to determine which relationships will survive obesity surgery, as opposed to which ones will not and why. Preparing both patients and spouses for the impact of dramatic weight loss on marital dynamics may also help some couples address issues presurgically and help them weather the post-surgical tumult more effectively.
Sexual Functioning

Pre-Weight Loss

The relationship of obesity and sexuality has been theorized about for decades, although data is scarce. There at least three reasons why one could intuit that sexuality might be problematic for the obese: 1) deficits in self-concept, 2) decreased attractiveness to others, and 3) physical limitations. Based on clinical impressions and survey data, Clarke (1976) and Stuart and Jacobson (1989) have even suggested that the etiology of obesity may be somehow linked to sexuality as an attempt for some individuals to avoid sexual conflict. If these hypotheses about the ways in which obesity may interfere with sexuality are correct, we would expect to find significant differences in sexual attitudes and activity between obese persons to non-obese persons. The literature, again, appears to be mixed.

Fink, Gottesfeld, and Glickman (1962) suggested a uniformly negative impact of morbid obesity on sexuality. Patients for the study were individuals who had been referred to a hospital for unspecified reasons, and not all expressed a desire to lose weight. The average weight for the seven men and twenty-four women in this sample was 269 pounds at the time of the study. In addition to a generally high level of psychological dysfunction noted in this sample, the authors reported a strikingly grim impression of sexuality in these patients’ lives. Although the particular duration of time assessed was unspecified in the paper, 39% of the sample reported an absence of any sexual contact. None of the sample reported satisfactory sexual experience. In a study by Schwartz, Hershensen and Shipman (1971), 15 matched couples in which the women were obese (a minimum of 20% above ideal weight) were matched and compared to coupled women.
with no obesity. There were no significant group differences in frequency of sexual activity. In fact, the ideal frequency of sexual activity indicated by the obese women was significantly higher than that of the women who were not obese. The strikingly different findings of these two early studies may have occurred as a result of the considerable differences in weight criteria used for selection of the study participants. Fink et al. interpreted their findings to suggest that obesity may be a defense against sexual conflict; Schwartz et al. saw in their findings the possibility of sex being a means by which affection-starved obese women fulfill affection needs. Both interpretations are clearly speculative and lacking in empirical support. The latter interpretation, however, has also been proposed by Stuart and Jacobson’s (1989) survey results in which some women reported using sex to confirm their desirability, stating that sexual contact was the only time they felt loved or needed.

The fact that a morbidly obese person typically faces far more numerous and serious challenges than a mild- to moderately obese individual lends support to the idea that morbidly obese persons may experience greater difficulties in sexual aspects of their lives – particularly those who are distressed enough to seek surgery. Marshall and Neill (1977) reported mixed results regarding sexuality in their sample of 12 morbidly obese patients (10 female) undergoing intestinal bypass surgery. Using an unspecified semi-structured interview, the authors found that as a group, the patients’ self-reported sexual activity and interest was characteristically bimodal in distribution. In general, the participants either reported little to no sexual activity and desire or a history of premarital sexual promiscuity and marital affairs. While these results appear to be inconclusive, what they suggest is that the impact of morbid obesity on sexuality may not be uniform. Wise and
Gordon (1977) administered comprehensive psychiatric evaluations to 23 patients (13 male) seeking intestinal bypass surgery. All of the patients reported markedly negative views about their own physical appearance and body size. The authors found the sample to have relatively adequate levels of sexual functioning, with the exception of physical discomfort/difficulty during intercourse reported by 7 of the patients. The males in this study, however, reported less libidinal drive and far less sexual activity than the women. The authors concluded that there was no evidence that obesity serves as a defense against sexuality, but rather that the physical and social consequences of morbid obesity limit sexual opportunities.

Using the Tennessee Self-Concept Scale, Castelnuovo-Tedesco et al. (1982) assessed 10 morbidly obese patients prior to undergoing weight loss surgery. They found that mean scores for all self-concept categories were within normal limits, with the exception of the “physical self.” This suggests that prior to surgery patients had a negative view of their body, physical appearance, and sexuality. In addition to depression and real physical limitations, such negative views regarding the self are likely to impact sexual functioning. In their study of 54 morbidly obese patients seeking intestinal bypass surgery (32 females), Rand et al. (1982) found that while the majority of patients reported engaging in sex on a regular basis prior to surgery (59% indicated having intercourse once or twice a week), the physical limitations caused by morbid obesity posed a significant physical problem in sexual functioning for one-third of the sample. Eighteen percent rarely engaged in sexual intercourse at preoperative assessment.

Despite similar population prevalence of obesity among males and females, the majority of obesity research is conducted on females. In an attempt to better understand
how obesity impacts male sexuality, Jagstadit, Golay, and Pasinini (1997) investigated sexuality in 30 obese men presenting for non-surgical weight loss treatment at a university hospital. With an average BMI of 34, these subjects did not meet criteria for morbid obesity (BMI ≥ 40). Using questionnaires designed specifically for the study, the authors found that, compared to non-obese matched controls, obese men showed significantly less sexual desire, erotic fantasies, adult autoeroticism, and motivation/energy in sexual advances. The obese males also scored significantly higher on eating disorders and body image dissatisfaction than controls. The authors suggested that body dissatisfaction among obese males plays a significant role in sexual difficulties. They also highlighted the impact of the physical aspects of obesity. Sex was experienced as exhausting, laden with insecurities, deliberations about the best sexual position, and fears about crushing or suffocating their partner. These findings contradict those of Schwartz et al. (1971) who suggest that obesity (not necessarily morbid obesity) does not impair sexual functioning. However, only obese females in that study were assessed, and again, varying weight criteria and assessment measures may preclude direct comparisons between the studies.

In a retrospective study aimed at assessing body image and sexual quality of life following obesity surgery, Camps, Zervos, Goode, and Rosemurgy, (1996) sent questionnaires to patients who were at least one year post surgery. Twenty-eight patients (64% female) and 16 of their spouses (63% male) responded to the measures designed for the study. Patient responses indicated that 14% of the patients elected to undergo surgery with the hopes of improving their sexual relationship with their spouse. Twenty-five percent of the partners supported their spouses’ decision for the same reason. Patients
reportedly averaged 3.5 sexual encounters per month prior to surgery and 64% of patients stated that they enjoyed sexual intercourse. Eighty-percent of patients in this sample reported masturbating more than six times per month and experiencing orgasms prior to surgery, which seems to indicate healthy sexual functioning in the area of desire, arousal, and orgasm. However, it is important to emphasize that selection bias is likely to have occurred as only a minority of the patients who received the packet, completed and returned the questionnaire. Despite this potential bias, the biggest sexual problem among this sample of patients was difficulty engaging in the physical act of sexual intercourse, a concern expressed by 46% of the patients and 56% of their partners.

More recently, Kinzl, et al. (2001) reported that 44% percent of the 82 morbidly obese women in their sample indicated that they were satisfied with their sexual lives and that their sexual activity was regular. Despite overall satisfaction for many of these women, over half of the sample indicated some type of sexual problem. Using a semi-structured interview designed for the study, these authors found that 11% reported difficulty engaging in sexual activity due to physical limitations associated with their obesity, another 11% reported low sexual desire, and 23% reported very rare sexual intercourse or sexual avoidance despite having a partner. It is interesting to note that the rate of hypoactive sexual desire in this sample is lower than in the general population of women. (Laumann, Gagnon, Michael & Michael, 1994).

Of those patients in the sample who retrospectively volunteered the subject of sexuality, Bocchieri, Meana, and Fisher (2002b) found, like Camps et al. (1996), that physical limitations posed a significant problem for sexual functioning among most morbidly obese individuals prior to undergoing gastric bypass surgery. One woman who
had reached a preoperative weight of 500 pounds, retrospectively described her embarrassment and frustration at trying to have intercourse in the missionary position with her large belly posing a considerable obstacle to her spouse achieving penile penetration. She explained that they were limited to only one sexual position in which her partner could successfully penetrate her, which was rear vaginal entry while on her hands and knees. Of the two women who reported severe physical limitations in their sexual lives, both recall having preoperative desire for their spouses. Two additional women in this sample attributed the preoperative decline of their sexual relationship with their partner to their obesity and hoped that following surgery, their sexual lives would improve (Bocchieri et al., 2002b). Rand et al. (1984) and Kinzl et al. (2001) both reported preoperative patient expectations that sexual relations would improve; 58% and 17%, respectively.

Based on these mixed results, the relationship between obesity and sexual function remains unclear. Cross study comparisons are difficult as the measures utilized are typically unstandardized, weight criteria vary considerably, and the majority of the samples are comprised predominantly of women. Severity of obesity, gender of the subjects, and whether or not these individuals are seeking surgery may all be important factors to consider when assessing for the impact of weight on sexuality. Those morbidly obese patients who seek the most drastic measure in an attempt to treat their obesity are likely to be most severely distressed and negatively affected by their weight on all dimensions. The literature does suggest, however, that the physical restrictions that accompany obesity, particularly morbid obesity, are a major obstacle to satisfactory sexual functioning.
Studies that have investigated changes in sexuality after weight loss generally suggest positive results. While there are reports of decreased sexual functioning following surgery, increased activity levels, energy, mobility, and self-esteem generally make sex physically more feasible, and generally more desired (Abramson & Catalano, 1985; Bocchieri et al., 2002b, Camps et al., 1996; Castelnuovo-Tedesco & Scheibel, 1976; Castelnuovo-Tedesco et al., 1982; Chandarana, Holliday, Conlon, Deslippe, 1988; Crisp et al., 1977; Dano and Hahn-Pedersen, 1977; Dubovsky et al., 1985; Goble & Rand, 1986; Ishida, 1974). In several of these studies, patients provided retrospective data regarding changes in sexuality after having lost weight. The first of these retrospective reports was a case study of a 34-year-old female intestinal bypass patient conducted by Ishida in 1974. The author interviewed the patient 17 months following surgery, after having lost 180 pounds. Her responses indicated that her dramatic weight loss and associated changes contributed to overall improvements in sexual functioning, such as her increased stamina and her spouse’s improved ease of penetration. She also described being more sexually desired by her husband as indicated by his increased sexual advances and praise. Castelnuovo-Tedesco and Schiebel (1976) assessed sexual functioning and satisfaction as part of a larger psychiatric evaluation conducted 10 months to 3 years after intestinal bypass surgery. Although these patients were evaluated prior to surgery, data reported about sexuality is based on patients’ retrospective accounts, and not pre to post comparisons of data. The majority of 12 female patients spoke of having a fuller sexual life than presurgically. The authors also report that these women became more attractive
and feminine in their appearance and that they described becoming more sociable and engaging in sexual affairs (the exact portion of the sample was not specified).

On the other hand, Hey and Niebuhr-Jorgensen (1981) investigated sexual aspects of women’s lives following intestinal bypass surgery and found decreases in sexual function. Using an expanded version of the Beck Depression Inventory, the authors found that 60% of the 38 women (aged 21-39 years) reported a decreased libido. In response to additional interview questions, twenty-four patients reported that the frequency of intercourse had decreased since surgery, while 13 patients stated that intercourse frequency had increased. These predominantly negative changes in sexuality were attributed by the authors to patients’ psychological reactions, such as irritability, to the physical symptoms (i.e., fatigue, weakness) caused by metabolic disturbances. This study raises an important issue regarding the difference in physical consequences and metabolic disturbances between older versions of obesity surgery to newer, safer surgeries of today. The newer surgeries result in fewer post-surgical complications and physical consequences and this should result in more psychological and social gains.

Sexuality was retrospectively assessed as part of a larger investigation of psychosocial outcomes of gastric restriction surgery in a study by Chandarana, Holliday, Conlon, and Deslippe, (1988). Thirty-one patients completed a questionnaire designed for the purpose of the study. Among the items in this questionnaire, one item in particular asked patients to report if their sex life had worsened or improved since surgery. Twenty-four of the predominantly female patients (77%) indicated that their sex life was “improved” to “much improved.” Seven patients (23%) reported that their sex life was “worse” to “much worse.” These findings suggest that following obesity surgery, most
patients experience physical and psychosocial gains that contribute to improved sexual relations. However, a significant minority of patients experienced negative changes in their sexual lives. The exact nature and attributions for such a deterioration of patients’ sex lives was not assessed and remains unclear among this sample. Camps et al. (1996) also reported retrospective data regarding postoperative changes in various aspects of sexual functioning. Of the 28 patients and 16 partners surveyed, 50% and 64% respectively, reported improvements in their sexual enjoyment after surgery (1 to 11 years) in response to questions designed for the study. Fifty percent of patients reported being more comfortable with their sexuality. Forty-four percent of patients and 40% of partners reported greater pleasure from orgasm than they had presurgically. Not only did these patients report enjoying sex more, they also reported engaging in sex more often, from an average of 3.5 times per month to more than 5 times per month. Reports of difficulty engaging in sexual intercourse decreased significantly from 46 to 15 percent of patients, and from 56 to 0 percent of partners. This study provides support for the potentially mediating effects of other variables as they pertain to sexuality, as two-thirds of the patients also reported improvements in body image. Weight loss, in absence of body-image enhancement, may not be sufficient to produce improvements in sexuality. The Camps et al. (1996) study, like the Chandarana et al. (1988) study, also reported that a minority of patients (25%) experienced new sexual problems that were attributed to the surgery. Unfortunately, the exact nature of these unfavorable sexual changes was not reported.

Werlinger, King, Clark, Pera and Wincze (1997) conducted another study using non-surgical populations. Retrospective data was collected from 32 female patients who had
enrolled in a hospital based weight management program. The average BMI of patients at the onset of the treatment program was 42.7, which meets criteria for morbid obesity. Patients lost an average of 57 pounds over the course of 11 to 91 weeks (mean = 31 weeks). Participants were asked to complete the following measures according to “the way you feel now” and then “the way you felt before you started the program:” the Derogatis Sexual Functioning Inventory (DSFI), two subscales of the Multidimensional Body-Self Relations Questionnaire (MBSRQ), and a sexual functioning questionnaire designed for the study. The majority of the subjects reported perceived improvements in sexual functioning, indicated by the average scores of the Drive and Satisfaction subscales of the DSFI improving from the 16th percentile to the 30th percentile. Most attributed these improvements to enhanced body image following weight loss and feeling less depressed about their weight. The authors suggest that body image may be a mediating factor in sexual functioning changes.

In a retrospective qualitative analysis of 31 gastric bypass patients 6 months to 11 years after surgery, Bocchieri et al. (2002b) reported mixed results in regards to sexuality. Some patients described experiencing improvements in their sexual functioning since having undergone surgery, others reported no changes whatsoever in the realm of sexuality, and others reported sexual functioning to have worsened since surgery. Those who described sexual improvements attributed these changes to enhanced self-esteem, increased sexual desire on the part of the patient or the spouse, increased energy and agility, and decreased physical limitations. Some patients attributed changes in sexuality to an emergence of a dormant sexual desire. Several patients who had been obese for the majority of their lives described themselves as experiencing adolescence for the first
time, their actual adolescence having been lived under the shadow of obesity. As a result, these patients described wanting to live the life they never got to live – including sexually. A case study by Schweitzer and Chipperfield (1986) of an 18-year-old female who had undergone obesity surgery revealed a similar phenomenon. The authors described how this sexually inhibited adolescent experienced an emergence of sexual awareness and interest following weight loss and changes in body image. While some patients in the Bocchieri et al. study described a postoperative decrease in sexual inhibitions that contributed to greater sexual promiscuity, others reported that as their self-worth improved, their standards for sexual partners increased, resulting in less overall sexual activity. It seems that enhanced self-esteem from weight loss may either increase or decrease the frequency of sexual activity, depending on the particular circumstance. Some patients who had expected that weight loss would inevitably result in sexual improvements reported feeling disappointed that their sexual functioning was relatively unchanged following surgery.

Perhaps the most surprising finding that emerged in Bocchieri et al. (2002b) study was that nearly one third of the females in the sample reported a dramatic decrease in sexual desire. All of these women were married preoperatively and spoke only of sexual functioning as it pertained to their spouse. These patients were encouraged to provide possible interpretations of their own decreased libido since surgery. The most frequently cited reason for their decreased sexual desire was the large folds of sagging skin consequent of the dramatic weight loss the patients experienced. These women described feeling less “sexy” than they had felt prior to surgery. One woman described herself as looking as if she had been “deflated,” while another spoke of now resembling a wrinkled
"Sharpei." Stuart and Jacobson's (1989) survey data also indicated that similar negative physical changes following weight loss (not necessarily surgically induced) were an issue for some respondents. In the most extreme cases in the Bocchieri et al. (2002b) study, patients explained that large folds of extra skin caused more than esteem issues, in that the skin also became a physical obstacle that had to be considered during sexual intercourse. These women were more comfortable as sexual beings in their preoperative obese bodies. The authors suggest that the patients' perception of changes in sexual desire and activity in either direction may also be part of a more general increase in assertiveness (more willing to say no), an increased frequency of partner advances, and/or the patients' feeling that now they were capable of finding someone more sexually attractive to them (Bocchieri et al., 2002b).

The impact of weight loss on sexuality may also not be limited to the morbidly obese, Abramson and Catalano (1985) retrospectively attempted to explore changes in sexuality among mild to moderately obese participants. The authors recruited participants through community newspaper advertisements aimed at individuals who had recently lost weight. Seventy-three respondents (51 females) completed the Sexual Function Inventory (SFI) and 11 items assessing sexual frequency. The sample was divided into three groups based on how far away they were from their weight loss goal. Those who were 10 pounds or less away from their goal were categorized as “Successful”, those individuals between 10 to 20 pounds away from goal were considered “Intermediate”, and those who were labeled “Unsuccessful” were more than 20 pounds over their goal weight. For both male and female participants, those considered to be “Successful” reported the highest frequency of sexual behavior, followed by the “Intermediate” group, and then the
"Unsuccessful" participants. Differences between the group means were significant. In addition, SFI data suggest that "Successful" females were more likely to indicate pleasure as a motivation for sex as compared to the "Unsuccessful" females. "Successful" participants scored significantly higher than "Unsuccessful" participants on the Recognition-Competition factor of the SFI (sample item – "Because I want to be as good or better at it than other people"). The authors suggest that these differences may be the result of the "Successful" dieters attempt to gain recognition for their weight loss. The data from this study also suggests that individual perceptions of the degree to which they consider themselves overweight may be more important than their actual weight, as perception of success appears to impact an individuals sexual functioning. For morbidly obese individuals, success is relative. Twenty pounds or more away from goal is often perceived by patients as "success," especially in instances where they have lost an extraordinary amount of weight.

Such retrospective perceptions of postoperative changes in sexuality are likely to be impacted by a variety of factors that would impact the validity of self-report. There is no way of knowing with any certainty if the changes described by patients actually occurred or if they are after-the-fact constructions of perceived changes. There have been several studies over the past several decades that have assessed changes in sexual attitudes and activity following weight loss using a prospective design. These studies provide direct comparisons of sexual functioning prior to and after weight loss.

In a study by Crisp et al. (1977), patient responses to questions assessing sexual interest indicated that 48 percent of married patients and 18 percent of unmarried patients reported an overall significantly increased interest in sex following intestinal bypass.
surgery. Dano and Hahn-Pedersen (1977) assessed sexual activity in their sample of 55 intestinal bypass patients 15 months to 6 years after surgery as part of a larger exploration of quality of life changes. Of the 35 females and 20 males, patient responses and ratings to a questionnaire designed for the study suggested that males typically fared better than women in sexual aspects of their lives following surgery. Twenty of the 55 patients reported increased sexual activity (particularly males) and 9 reported decreased sexual frequency (particularly the females). Ten patients reported significant increases in libido (again, males faring better) and capacity for orgasm, while 5 patients reported decreased libido and 6 reported decreased capacity for orgasm. This study also indicates the variety of sexual changes that can be experienced following surgery.

Dubovsky et al. (1985) evaluated 36 obesity surgery patients prior to and 18 to 24 months following surgery. Based on patient responses to psychiatric interviews designed for the study, sexual adjustment generally improved following surgery. The authors suggest that corresponding increases in patients’ assertiveness and confidence may be the source of these sexual gains, insofar as patients described no longer being hesitant to make sexually-related requests. Goble et al. (1986) evaluated 54 married intestinal bypass patients prior to surgery and one year later. As part of a larger interview battery, patients were asked to respond to questions assessing sexual frequency, the presence of sexual problems, and preoperative expectations regarding sexual pleasure after surgery. The authors reported that, among the 32 females and 22 males, the report of sexual problems decreased from 50 percent preoperatively to 6 percent post-operatively. Sexual relations were significantly more pleasurable for 88% of the sample and increased in frequency for 84% of the patients. Patients whose sexual frequency increased also reported less conflict
in their marriage. The authors attributed these changes to an expansion of the previously closed boundaries of the marital system.

The most recent prospective study designed to investigate sexuality among morbidly obese women seeking surgery was conducted by Kinzl and colleagues (2001). Using a semi-structured interview designed for the purpose of the study, authors evaluated 82 female gastric banding patients prior to and at least one year following surgery. The findings again, are mixed. Fifteen percent of the sample reported that sex was just as satisfying as it was preoperatively. Sixty-three percent of the patients stated that they enjoyed sex more after surgery. Reasons cited by the patients for these improvements were improved self-esteem, heightened libido in themselves or their partner, and fewer physical complications. In contrast, 12 percent of the women enjoyed sex less than they had prior to surgery. The decreased libido in 12% of the sample was attributed to these patients’ negative ratings of changes in their appearance caused by the weight loss. Half of the sample in this study assessed the physical changes in appearance as negative (e.g., sagging breasts and newly wrinkled skin). Other possible reasons suggested for decreased sexual functioning were increased spousal conflict, decreased desire for the patient on the part of the spouse, and possible nutritional deficits that interfered with the sexual response. Kinzl et al.’s (2001) study is the only known study directly assessing sexuality and sexual disorders prospectively in morbidly obese patients undergoing surgery.

Some researchers have suggested a possible link between obesity and some underlying sexual conflict. Advocates of this theory propose that gaining weight may be one attempt to resolve severe sexual conflict by becoming sexually undesirable or asexual (Clarke, 1976; Glinski et al., 2001; Kalucy & Crisp, 1974; Weiderman, Sansone &
Sansone, 1999). It appears that among a subset of women who have been sexually abused, obesity may serve a defensive function (Bocchieri et al., 2002a; Glinski et al., 2001; Kalucy & Crisp; 1974; King, Clark, & Pera, 1996; Weiderman, et al., 1999). Alternately, women with a history of sexual abuse may experience more psychological maladjustment rendering difficult attempts to lose weight even more challenging than they are for the general population.

In the context of a behavioral weight loss treatment center, King et al. (1996) compared 22 obese women with a history of sexual abuse to a group of women who denied any prior sexual abuse. The authors found that obese women with a history of sexual abuse reported more episodes of program nonadherence and lost significantly less weight on a very-low-calorie diet (VLCD) weight-management program. Data from structured clinical interviews and a measure of weight self-efficacy indicated significant differences between the groups in both psychiatric distress and self-efficacy with regards to their weight. Sexually abused obese women also reported significantly less self-efficacy particularly in situations involving physical discomfort and negative affect. Perhaps these symptoms are highly associated with the abuse and so the patients attempt to self soothe through consumption of food. The authors also suggest that weight loss may result in the sexually abused women feeling less “protected” and thus, more vulnerable to potential abuse.

Weiderman, Sansone, and Sansone (1999) explored the relationship between history of sexual abuse, body dissatisfaction, and maximum weight fluctuation among obese and non-obese women. The 150 women used in the sample were recruited from a gynecological clinic. Body dissatisfaction was determined based on actual/ideal weight
discrepancy. The authors found that obese women with a history of sexual abuse were less likely to be dissatisfied with their weight and less likely to have fluctuated in their weight than obese women who did not report a history of sexual abuse. The suggestion made was that some women with a history of sexual abuse may be more motivated to maintain their weight or, at the very least, be less distressed by it. The authors speculate that one potential motivation may be a self-protective function – although the women in this sample did not report any such psychodynamic to their weight.

In the Bocchieri et al. (2002b) study, the majority of female focus group participants described feelings of vulnerability and fear as men became increasingly forward in professing their newfound attraction and desire for their more slender bodies. These women all described experiencing some type of sexual trauma in their past. One woman described a fear of weighing less than 300 pounds because that was the weight at which she had been sexually assaulted. This finding is consistent with the idea of “sexual barrier weight” for sexually abused women proposed by Weiner and Stephens (1996). Results of a survey distributed to 42 women with eating disorders provided some support for Weiner and Stephens contention that some women may avoid a specific body weight that corresponds to a sexually traumatic event. For these and related reasons, patients who were sexually abused or experienced other types of trauma may be at risk for unconsciously or consciously sabotaging their weight loss (Bocchieri, et al., 2002b; King, et al., 1996; Kinzl et al., 2001). It is important to note that most obese women do not have a history of sexual abuse and most sexually abused women are not obese. Assessment of sexual abuse and understanding of the ways in which a sexual abuse history may impact
weight loss may be crucial to promoting successful surgical outcomes for certain individuals.

While the impact of dramatic weight loss on sexual functioning seems to be a generally positive one, the available evidence also suggests that a considerable number of patients experienced a decrease in sexual functioning following surgery. It should be noted that some of the findings are based on earlier studies in which older types of surgeries with many more complications were performed. Thus, the generalizability of those results to patients of more recent, safer surgeries may be poor due to these differences in post-surgical complications. Also, none of the prospective studies utilized standardized measures of sexual functioning. Despite these methodological considerations, the impact of dramatic weight loss on sexuality is no doubt varied and complex.

**Dating Relationships**

For individuals who are single, excess weight may be experienced as impacting the pursuit of potential romantic partners in a variety of different ways. Kallen and Doughty (1984) found that college-aged women who perceived themselves to be fat reported significantly lower frequency of dating as compared to women who perceived themselves to be of normal weight. Few of the women in this study were obese by conventional standards. However, these findings are interesting because they suggest that the perception of overweight may be a greater determinant of dating frequency than actual degree of overweight. Women who were actually overweight/obese and perceived themselves to be of normal weight actually reported a greater dating frequency than
normal weight women who perceived themselves to be fat. The self-perceived fat women also tended to date men who they describe as less physically attractive. This latter finding supports the authors' original hypothesis suggesting that equity theory (Berscheid & Walster, 1966, as cited in Kallen & Doughty, 1884) should play a role in the determination of dating relationships. Equity theory suggests that people will date whom they deserve and, in this particular case, that obese individuals will pair with others who match on levels of attractiveness. The extent to which similar findings may be found among morbidly obese samples is unknown.

There are no known studies that have directly investigated the dating lives of obese single patients pre- or post- obesity surgery. In addition, there are no known standardized assessment measures designed specifically for this purpose and isolating such a select population would limit any sample size considerably. However, as part of a larger qualitative study investigating psychosocial changes, Bocchieri (2001) gathered some data pertaining to the dating lives of single patients who had undergone gastric bypass surgery. Based on elaborate responses to semi-structured interview prompts, single patients retrospectively described their romantic life prior to surgery and discussed how this area of their life changed post-operatively.

Some single patients described having postponed any attempt or conscious effort to meet potential romantic partners during the time that they were morbidly obese. This general distancing from interpersonal romantic relationships was typically thought by the patient to be due to fear – the fear of being ridiculed or rejected by a potential romantic interest. In the most extreme cases, middle aged singles had never been on a date or been with another person in a romantic context. Some of these patients even described being
unreceptive to advances made by potentially interested suitors. They attributed this unresponsiveness to the feeling that they themselves were undesirable and thus could not conceive that anyone could actually be romantically interested in them. A couple of them even described doubts about the emotional stability of anyone who would actually desire a morbidly obese person. One of the expectations several patients had in having the surgery was that following weight loss they would be physically and psychologically ready to begin dating and potentially find a romantic partner.

A minority of patients described an active dating life prior to surgery. Some felt that their obesity had never been an obstacle in their romantic life. Others attributed their active dating life to a pervasive lack of selectiveness and even promiscuity. They claimed that their lack of self-worth translated into a willingness to date anyone who would have them – a reaction quite contrary to those patients who attributed their dating avoidance to low self-worth.

Following surgery, mixed results were described in the dating sphere of single patients' lives. According to Bocchieri (2001) some patients described their appearance changes, increased activity levels, self-confidence, and assertion all as having a positive influence in their ability to attract romantic partners. For patients who described themselves as active daters presurgically, primarily those who recalled using little discretion in their selection of potential suitors, dating habits seemed to change considerably. One patient in particular described a dramatic decrease in dating frequency, precisely because of her perception of major improvements in self-worth and body image. She attributed her decreased dating activity to her own increased standards for
selection of potential dating partners. As her standards went up, her available selection went down.

For patients who, prior to surgery, had cut themselves off from the dating world entirely, feelings of fear, unpreparedness and ineptitude often emerged as they began the journey into a dating world that was completely unfamiliar to them. Because they were obese the majority of their lives, these patients described having missed out on the opportunity of a “normal” developmental adolescent period in which individuals traditionally practice dating skills and experience romantic relationships. Patients were often surprised that feelings of insecurity and fear persisted after dramatic weight loss. While they described being more marketable in the dating world, they felt ill-equipped with the social skills that were needed in the dating arena. Other patients described transitioning into an active dating world with ease, giddy with the flattery of attention, as if they were in high school again. Another interesting finding was that of patient reactions to the sometimes unfulfilled presurgical expectation of dating becoming less complicated and more gratifying after surgery. It was a harsh realization that being thin was not necessarily the ticket to a successful dating life.

The changes in the reactions of others to patient transformations were also experienced differently by individual patients. Most patients described an increase in attention from other people who expressed a newfound desire for them romantically or sexually. However, varied reactions to this increased attention occurred. Some perceived the newfound attention as positive and took partial ownership for others responding to them more favorably. They recognized that they were dressing and caring for themselves in a more attractive manner, that they were more outgoing, and that they generally
appeared more receptive and open to interactions than they had been presurgically. Other patients reacted to this newfound attention with feelings of resentment and anger. They felt as if the world was responding to them differently based solely on the fact that they were no longer morbidly obese. They had felt judged by their heaviness presurgically and now they felt judged by their thinness. Both felt unfair and superficial. These differing reactions determined how patients interacted with the newly interested. Some drank in the attention, others angrily rejected it, while even others engaged in revenge fantasies of rejecting those who now wanted them.

And, thus, weight loss seemingly resulted in increased dating for some patients, decreases for others and it had no effect whatsoever for some. Interestingly, both increases and decreases were generally attributed to the psychosocial benefits of surgery. The most disappointed were patients for whom weight loss had left no trace on dating opportunities. Both the experience of a newly responsive world or one that had not even noticed posed relational and intra-psychic challenges for most of the patients in the Bocchieri (2001) study.

Friendship

Friendships are another relationship dimension that has received little research attention in the obesity surgery literature and little is known about the relationship between obesity and friendships. As part of a broad investigation of health related quality of life variables, 1743 participants in the Swedish obese study (SOS; Sullivan et al., 1993) completed the social interaction portion of the sickness impact profile (SIP). The social interaction category of this measure is designed to assess health-related
dysfunction among social relationships (friends and family members). Compared to control subjects comprised of, among others, spinal cord injured persons and cancer survivors who had adapted to their conditions, morbidly obese individuals indicated less social interaction. Scores obtained on the social interaction scale were most strongly correlated with measures of psychological distress and morbidly obese men reported somewhat more health-related dysfunction in social interaction than women. Based on interview and unspecified questionnaire data of 6016 (45% female) Finnish respondents and 109 initially overweight subjects (55 maintainers, 31% female; 54 regainers, 48% female) Sarlio-Lähteenkorva (2001) found that, among women, obesity was associated with a lack of close friendships outside the family.

Bocchieri (2001) asked morbidly obese patients in their sample to discuss the ways, if any, surgery had affected their friendships. In describing their friendships prior to surgery, patient responses varied considerably. Some described having satisfying, fulfilling friendships prior to surgery, while others described feeling as if they were taken for granted by friends because of their willingness to please others while simultaneously being passive and avoiding conflict. In these relationships, female patients often described themselves as the person who stayed at the table and watched over the purses while friends danced, baby-sat everyone else’s kids, or was available when it was convenient for the friend. The latter patients described a reluctance to initiate changes in relationship dynamics because they feared being rejected, hurt, or alone. These patients spoke of their obesity as a stabilizing force in their friendships for similar reasons noted in marriages; chiefly that they felt they could not hope to do any better and that they could not deal with their emotions in an active, assertive manner.

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Following surgery, most patients in the Bocchieri et al. (2001) sample reported changes in the dynamics of existing friendships. Many of the patients described improved and increased quantity of friendships following surgery. Findings of Chandarana, et al. (1988) suggest that most patients experienced increases in their self-reported number of friendships. Of the 31 patients who had undergone gastric stapling, all but seven indicated that they had made new friends on a questionnaire designed for the purpose of the study. Similar findings were noted among 487 surgery patients (327 females) of the Swedish obese study (SOS; Karlsson, Sjöström, & Sullivan, 1998). At baseline, conventionally treated matched controls and surgery patients both indicated high levels of social dysfunction as indicated by scores on the social interaction scale of the sickness impact profile (SIP), with female surgery patients exhibiting higher dysfunction than controls. At six months, significant decreases in social dysfunction were noted among the surgery group, with females faring better than males. At one and two year follow-up, social dysfunction scores had decreased by one-third in males and almost one-half in females. The control group scores on social interaction remained relatively stable. Results suggest that the greatest improvements in social interaction for obesity surgery patients may be experienced during the first six months, the time frame corresponding to the period in which the greatest weight loss occurs. These results also suggest that as weight loss begins to slow, patient perceptions of improvements in social interaction, while still an improvement from their preoperative status, may decrease slightly.

In the Bocchieri et al. (2002a) study, patient attributions for improvements in quality and quantity of friendships typically corresponded to the positive changes that occurred.
within themselves following surgery, such as being more active, outgoing, and optimistic. However, a considerable number of patients described relatively stable, lifelong friendships that were severely disrupted by the changes that occurred following weight-loss surgery. Patients cited many reasons for the deterioration of previous friendships. Interestingly, the reasons provided for relationship discord following surgery were frequently the same reasons that patients cited as the source of friendship improvements - such as, increases in assertiveness, activity level, and self-esteem. Patients made comments such as, “I am no longer home waiting when she [or he] calls” or “I am not willing to put up with the same things that I used to put up with.” Another commonly cited reason for the disruption of presurgical friendships was that of friends having difficulty adjusting to their “new” non-obese friend. Reactions such as discomfort, jealousy or insecurity were described. This finding was present among both male and female patients.

Some patients expressed a desire to no longer associate with people who were obese, stating that they were trying to move on to a new life and leave that old self behind. This finding is consistent with results of interviews reported by Castelnuovo-Tedesco and Schiebel, (1976) who found that some patients expressed a reluctance to mingle with fat people because it hindered their new identity and reminded them of when they were fat. Of note here is that many patients reported considerable difficulty trying to accommodate presurgical friendships into their new lifestyle, which typically consists of a lot less eating and a lot more activity. So even when the decision is not a conscious one, patients may not be as compatible with obese friends as they had been preoperatively. Patients in the Castelnuovo-Tedesco and Schiebel (1986) study also reported a fuller social life,
which was a common finding in the Bocchieri et al. (2002a) study as well. Patients typically made new friends with other patients who had also undergone obesity surgery, especially through support group meetings. As these and other new friends and activities made their way into patients' lives, a common side effect was a reduction in time spent with the "old" friends from their "old" lives.

Based on the limited data available, it does seem that for some obese individuals, excess weight and its associated physical and psychosocial correlates may play a role in the selection and acceptance of friends, as well as the subsequent relational dynamics that govern these friendships. Obesity surgery seems to create a dramatic shift in these preexisting friendship dynamics. These changes can be attributed to a multitude of postsurgical factors, most of which seem to stem from improvements in patient self-worth and greater expectations in their friendships. Such changes may create conflict, and in some cases, result in the termination of these relationships.

In addition, changes in friendship dynamics following surgery may impact patient success. As part of a larger exploration of indices of patient success, Delin, Watts, and Bassett (1995) administered the MOS Social Support Survey to twenty gastric bypass patients two years following surgery. The authors then compared different subscales of the MOS Social Support Survey to other variables investigated. While weight loss did not correlate with any of the social support variables, other interesting findings were noted. For example, the stronger the feeling that life had not changed as much as expected, the lower the emotional support and affection scores. The higher the scores of positive interaction, the more patients tended to be consumed by thoughts of food and eating. High positive interaction scores were also associated with greater satisfaction with the
outcome of the operation. Interestingly, the more close friends and relatives patients reportedly had, the less satisfied they were with the outcome of the operation. It is impossible to interpret these seemingly contradictory findings into any coherent theory. It does, however, highlight the potentially complex functions of supportive, social relationships and emphasizes, as the authors conclude, a need for further investigation in this area.

Family of Origin

As previously mentioned, obesity has been conceptualized as part of a larger family system that contributes to the etiology and maintenance of obesity and, in turn, is maintained by the obesity (Ganley, 1986; Harkaway, 1983; Meissner, 1966; Minuchin et al., 1978). In their seminal work on psychosomatic families with specific emphasis on anorexia nervosa, Minuchin et al. (1978) argued for a systems perspective, rather than a linear perspective, of psychosomatic illness. This transactional model is theoretically unique and diverges from any medical, psychodynamic, and behavioral models of psychosomatic illnesses. Minuchin et al. (1978) have proposed that a circular movement exists among family members in which the symptoms that maintain the behavior are triggered by other family members and that the continual emphasis placed on the psychosomatic symptom often promotes an endless pattern of deflecting conflict resolution within the family context. Based on an extensive literature review and Minuchin et al.'s work, Ganley (1986) has suggested that certain family patterns characteristic of psychosomatic families, such as enmeshment, rigidity, conflict avoidance, and overprotectiveness (Minuchin et al., 1978), may be related to obesity as
well as to the characteristics common to obese individuals (e.g., inhibition of autonomy, passivity, emotional eating, self-blame). This systemic perspective, similar to the aforementioned Minuchin et al. (1978) theory, suggests that such factors in obese individuals may be a cohesive factor and serve to maintain a "pseudoharmony" within the family system (Ganley, 1986).

This theory is also supported by the finding of Bocchieri (2001) that many family members of the patients were described as being opposed to the patient having surgery, and oftentimes were unsupportive. Patient explanations for family members' lack of support often involved a resistance to or fear of change within the family dynamics. These patients retrospectively described being the "caretaker" or the "scapegoat" in the family and that their position within the family was rigidly defined. Many patients in the Glinski et al., (2001) study described their role in their family of origin in a similar manner. Based on semi-structured interview data, these authors also reported that obese individuals with a history of familial abuse were likely to internalize feelings of self-hatred and blame and may have turned to food as an attempt to self-soothe. Even among those without a history of physical or sexual abuse, verbal abuse or intense ridicule on the part of family members was not uncommon for patients in either the Bocchieri study (2001) or the Glinski et al. study (2001). Patients in both samples described being compared to more slender siblings, being called derogatory weight-related names, and constantly being reminded of their weight problem by family members both in childhood and in their adult life.

While certain family interaction styles have been implicated in the etiology and maintenance of childhood obesity (for reviews see Hertzler, 1981; Johnson, Brownell, St.
Jeor, Brunner, & Worby, 1997), familial risk factors for adult obesity have yet to be investigated directly in a longitudinal, prospective design. Johnson et al. (1997) did attempt to find a relationship between certain family of origin variables and adult eating attitudes and behavior. Using the Family Adaptability and Cohesion Evaluation Scale (FACES) a community sample of adult males (242) and females (237) were instructed to rate their family interaction styles as they perceived them to be when they were 15 years old. The results indicated that for males, higher adaptability (poor leadership and changing rules) was related to self-reported earlier onset of obesity and poorer eating habits, whereas high family cohesion (closeness, togetherness, cooperativeness) was related to better perceived control over eating and healthier eating habits. For females, neither the body weight nor eating variables were related to scores on family cohesion or adaptability. The authors proposed a possible explanation for these results, suggesting that family factors may exert a greater influence on males than they do on females. They argue that societal factors, such as cultural ideals of thinness, are likely to exert a greater influence on females than they do on males, and that these societal factors are so profound that they may wash out any influence of the family of origin. For males, the societal pressures to be thin are far less pervasive and thus the impact of the family of origin may be more profoundly felt.

It is interesting to note, however, that high family cohesion scores in the Johnson et al. (1997) study were related to improved eating habits and control in males. The family systems theorists suggest that obesity itself may be a cohesive factor for psychosomatic families (Meissner, 1966). Perhaps in the absence of a functional cohesive family structure, the symptom of obesity may serve to fill this void by becoming a primary focus.
within the family and possibly permitting improved function in other parts of the family system (Meissner, 1966).

If obesity plays a role in the dynamics within one’s family of origin, then the removal of obesity should result in some disturbance of the family structural unit. For some patients in the Bocchieri (2001) study, this was the case. Some described their position within the family as changed following weight loss. They described no longer being willing to bury emotions with food, to be blamed for family problems, or to be taken for granted. These patients described feeling good enough about themselves that pleasing family members was no longer their primary concern. Castelnuovo-Tedesco and Scheibel (1976) reported similar findings in that increased assertiveness strained relationships with parents, especially in cases when patients became more independent from parents. Based on patient responses to unspecified questionnaires, Kalucy and Crisp (1974) also reported a reappraisal of the relationships by the family members and by the patient occurred following surgery. This reappraisal initially caused some friction with the eventual result being increased mature, positive interdependence between the family members and the patient.

Both the Castelnuovo-Tedesco and Scheibel study (1976) and the Bocchieri et al. study (2002a) reported patient accounts of family members (mothers and siblings, specifically) becoming envious of the patients postoperative weight loss and associated life changes. Unsupportive comments, avoidance, subtle attempts to sabotage diet, and hypervigilance of the patients’ dietary regimen were all cited as indicators of family member resistance and envy. Several patients in the Bocchieri (2001) study who reportedly never felt accepted by family members because of their weight, finally felt
accepted after weight loss. These patients spoke of tremendous fear of regaining weight because they had finally become worthy of family members’ affection and pride.

While there were numerous accounts of unequivocal improvements among families following weight loss, there is considerable data to suggest that dramatic change does upset a preexisting dynamic within the family. Dramatic weight loss and its associated changes, such as patients’ greater willingness to speak their mind, set new boundaries, and pursue their individual desires, often creates conflict and challenges the rigid roles that have been prescribed to family members. Family conflict, when it does occur, is particularly more likely in the initial period after weight loss as family members resist patient changes. This ensuing tug of war for power and control within the family system is often eventually resolved as patients and family members renegotiate the position they will maintain with each other.

Work Relationships

The extent to which morbid obesity impacts occupational relations is currently unclear. However, one can speculate that the physical restrictions, ill health, low self-concept, and societal discrimination and stigmatization associated with morbid obesity may all have a negative effect on workplace relationships with coworkers, employees, and superiors and consequently, career advancement. A study by Miller, Rothblum, Brand and Felicio (1995) explored whether or not obese women have poorer workplace relationships compared to non-obese women. Seventy-seven obese and 78 non-obese women were compared on various measures of social relationships. Results of this study indicated that obese and non-obese women did not differ on any of the social relationship
measures designed to assess social avoidance, social distress, social self-esteem, social performance and social involvement. The authors concluded that obese women may be able to compensate for workplace discrimination in their relationships with coworkers.

As part of a larger exploration of psychosocial variables, Bocchieri et al. (2002a) investigated the ways in which obesity surgery had impacted patients’ work relationships after surgery. Thirty-three patients were asked to retrospectively describe the ways in which their situation at work had changed since surgery. Patient responses’ typically consisted of presurgical references as a comparison for post-surgical change, thereby providing some insight into the presurgical occupational environment of these patients and the extent to which morbid obesity was thought to impact work relationships. Based on patients’ retrospective self-report, the extent to which morbid obesity was thought to impact work relationships varied considerably – ranging from reports of obesity having no impact on work relationships to obesity affecting these relationships in a profound manner.

A recurring theme in patients’ descriptions of workplace relationships prior to surgery was passivity in their work relationships to the extent that they felt they routinely placed other peoples’ needs ahead of their own. At the extreme, patients recalled feeling “invisible” and “not heard” in the workplace; as if their presence was hardly acknowledged and that they, in turn, made a considerable effort to detract any attention away from themselves. These patients spoke of the irony of being so large, yet so invisible. Some patients described making an active attempt to compensate for their obesity by taking on extra tasks, putting in extra hours, and taking up the slack of others. The presurgical fear that coworkers may attribute any lack of productivity or success to
the fact that they were obese was frequently reported. Another related finding was that patients felt they had to work harder than their leaner coworkers to receive equal recognition and occupational opportunities. This latter finding was particularly salient for some patients who, prior to surgery, sought new employment or a promotion. Several patients felt as if they were stigmatized and discriminated against based on their weight. Such recollections are difficult to interpret as they are based on patient perceptions and may be biased by patients' feelings of low self-worth. However, it is clear that the stigma of obesity is widespread and has even been referred to the “last safe prejudice” in US society (Stunkard & Sorenson, 1993). The complex picture of stigmatization and discrimination among workplace relationships for obese individuals is difficult to navigate, but, based on the Bocchieri et al. (2002a) study, morbid obesity and its accompanying physical and psychosocial correlates are considered by the morbidly obese to impact relationship dynamics in the work environment.

Numerous studies have found occupational gains among obesity surgery patients (Bocchieri et al., 2002a; Crisp, et al., 1977; Hall Horne, & O’Brien, 1983; Hawke et al., 1990; Rabner & Greenstein, 1991; Solow, 1977) which suggests that weight loss and/or its accompanying changes impacts the occupational world of these patients. Many patients in the Bocchieri et al. (2002) study remarked about how, prior to surgery, they were never fully conscious of being discriminated against because of their weight. It was only after losing weight and experiencing how differently they were treated by coworkers, employees, superiors, and potential employers that they began to believe in retrospect that they had been discriminated against prior to surgery. Most people regarded the changes as positive, with some even using the newfound attention and better
treatment to their advantage in business situations. Other patients described reacting with resentment toward people who they felt had dismissed or mistreated them prior to surgery and were now saying hello in the elevator, offering them a promotion, or inquiring about their weight loss.

Perhaps the most noted change in interpersonal relations at work for patients in the Bocchieri et al. (2002) sample, was an increased assertiveness and an unwillingness to remain passive. As patients felt more confident, they became more willing to speak their mind and say no to the requests of others in the workplace. Patients described reactions of others to their own personal changes as varied. In some cases, coworkers were supportive of patients' newfound assertiveness, whereas in other cases, such changes created conflict and tension. Several patients described strained work relationships as patients' typically increased their productivity – a change perceived as threatening by some. Patients described breaking out of old habits and roles at work, which was often difficult. Some felt as if they were still, and would always be, pigeonholed as the fat person, despite dramatic weight loss. On the other hand, there were a couple of individuals who felt they were much more pleasant to work with following surgery, which they attributed to no longer feeling miserable and thus no longer projecting their own personal hostility and disappointment onto others.

Survey data provided by Stuart and Jacobson (1989) also provide some insight as to the impact of weight loss in general on women in the workplace. The authors note how some women reportedly realized that while certain stigmas apply when overweight, certain other stigmas apply to being thin. These respondents were unprepared for some of the changes they experienced in their workplace relationships. Perhaps most surprising
was that some coworkers attributed participants post-weight loss work advances to their slender, attractive new bodies. Some female respondents also felt as if they were taken less seriously when they lost weight, particularly by male coworkers.

Occupational relationships play an integral role in the quality of one’s work environment. Morbid obesity may impact the attainment, quality, and dynamics of such relationships. Rapid, surgical weight loss is perceived to alter the pre-existing dynamics of these relationships to varying extents. Based on the limited information available regarding occupational change after weight loss, the majority of workplace relationship changes were perceived as positive, although conflict and tension were not uncommon. The potential impact of obesity surgery on work relationships is a largely unexplored area that warrants further research attention.

Parenting Relationships

With the societal rates of obesity and morbid obesity growing exponentially, an important variable worthy of research attention is the extent to which this psychosocially debilitating disease impacts one’s ability to parent in an optimal manner. How is the parent-child relationship affected by morbid obesity and its common correlates, such as low self-esteem, physical disability, and social stigmatization? One early study reported that the morbidly obese parents in their sample were “pathologically” attached to their children (Fink et al., 1962). Based on unspecified psychiatric interviews, the authors found 12 of the 15 women with children to be overly dependent, clinging, and have difficulty differentiating their children from themselves.
Bocchieri et al., (2002a) did not find this to be the case. Although many of the parents in their study described their children's welfare as a chief motivator for their decision to have surgery, the authors did not encounter evidence that indicated this devotion to be "pathological." Patients with children retrospectively lamented on numerous obesity-related circumstances that interfered with their parental role, ultimately driving them to seek the most drastic means of weight reduction, obesity surgery. Common complaints centered on the physical limitations associated with their obesity and the impact these limitations had on activities with their children. In the most extreme situations, teaching their children seemingly simple tasks, such as household chores, or taking care of their physical hygiene, became complicated by the patients' physical restrictions. Recreational activities, such as walking for any length of distance, running in the playground, or going to an amusement park and trying to fit in the seats of a ride were all made difficult, if not impossible, by the physical constraints of obesity. Lethargy and depression associated with morbid obesity were also cited as impairing patients' ability to attend to their children in the way they desired. Patients feared life-threatening circumstances in which they might not be able to protect the livelihood of their child. One mom described a critical experience in which her small child ran straight toward a dangerous ditch. This was a significant motivating moment as she could barely move her morbidly obese body fast enough to protect her toddler from being seriously injured.

Guilt was also a common emotion experienced by morbidly obese parents in the Bocchieri et al. (2002a) sample. This was particularly striking in situations where patients blamed themselves for their children also developing a weight problem. Patients also spoke of being ashamed to go places with their child because they felt as if they were an
embarrassment, which in some cases was confirmed by their children’s comments or ridicule by other children. Combined with physical restriction, this limited the amount of social interaction the parent and child participated in outside of the home. Within the home, parents also spoke of having given up a lot of the parental responsibility to the more physically capable spouse. Several spoke of being short-tempered with their children because of the frustration they felt regarding their own weight and associated limitations. There was, however, no absence of love and devotion among the obese parents in this sample. In fact, it was quite the opposite. These parents seemed to experience great distress over the parental limitations caused by their obesity, particularly in the case of young children.

Following surgery, patients in the Bocchieri et al. (2002a) study who were mothers or fathers described numerous changes in their relationships with their children. With the exception of one case in which the patient did not feel that her morbid obesity had impacted her role as a parent, all other patients agreed that the reduction of physical limitations broadened the range and frequency of activities spent with children. As patients felt more confident and less restricted, recreational outings with children became more feasible and frequent. The majority of patients also spoke of an enormous sense of relief in knowing that their physical health would no longer jeopardize or shorten the duration of their relationship with their children. An interesting finding was that the patients’ decision to prioritize their health seemed to permeate throughout family members, including children. There were several accounts of overweight children losing weight after mom or dad had surgery. More physical activity, healthier food choices for the family, and increased nutritional knowledge and awareness were all cited as reasons
for weight loss among children. Parents provided tearful descriptions of seemingly small changes, such as being able to walk in the park with their children without gasping for air or being able to fit on the bleachers at their child’s ball game. The near consensus was that weight loss had a tremendous impact on their relationships with their children and their view of themselves as parents.

Despite overwhelming benefits, there were some instances in which obesity surgery disrupted the stability of parent-child relationships. Some patients spoke of dramatic changes in their own assertiveness having created increased tension in relationships with children, particularly older children. These patients retrospectively described having difficulty saying no to children’s demands. Patients described difficulty finding a balance between taking care of their children’s needs and taking care of their own after surgery.

Patient relationships with their children seem to be affected by morbid obesity and its psychosocial correlates to varying degrees, although mostly negative. Given the unique opportunity to experience their parental role prior to and after being morbidly obese, patients described striking contrasts between pre and postsurgical parent-child relationships (Bocchieri et al., 2002a). These changes seem to be primarily attributed to a decrease in the physical limitations and depressive symptoms associated with morbid obesity. Future research is indicated to further determine the extent to which morbid obesity impacts patient relationships with their children and the degree to which obesity surgery alters this existing relationship.
The very limited data available seem to indicate that both morbid obesity and the dramatic weight loss consequent to its surgical treatment have some impact on relationship dynamics. However, with the exception of a handful of studies that focused exclusively on marital relationships, the findings seem almost accidental, with patients interrupting other research agendas to volunteer stories of how their relationships have changed. There are no systematic, prospective studies exclusively focusing on changes in the relational world of morbidly obese people who undergo obesity surgery. And this is the case despite the fact that distress about relationships (current or future) ranks only second to health concerns as a reason given for having the surgery (Bocchieri et al, 2002). The theoretical grounds on which to hypothesize that relational change might ensue dramatic weight loss seem solid, even if one is not a committed systems theorist. Morbid obesity is hard to ignore, by the morbidly obese themselves and by the people with whom they interact. What happens when the weight starts to disappear?

We don't know the answer to that question but we think it is an important one. First, it is related to patient expectations. With relational change being one of the primary reasons for having the surgery, it seems crucial to explore the extent to which expectations are met. Change may be almost certain, but less certain is the extent to which the actual change aligns itself to the fantasies the patient had when he or she envisioned their lives as a thin person. Second, the extent to which patient expectations are met post-surgically may be an important determinant of outcome. A significant number of obesity surgery patients re-gain weight two years after surgery. One of the reasons for this may lie in disappointment over the psychosocial outcomes of their
surgery. If your life is not better without the weight, why continue to struggle with difficult dietary restrictions?

Aims of the Study and Hypotheses

By utilizing both standardized measures and pilot measures designed for the purpose of the study, we aimed to provide valuable information pertaining to various types of relationships and sexual functioning among morbidly obese persons prior to weight loss surgery and at two post-operative intervals. In addition to the assessment of relationship and sexual functioning, several psychological variables were assessed at each time interval in an attempt to understand the factors may be related to relationship changes. The purpose was to gain knowledge that can be communicated to patients to help them navigate the psychological and relational challenges that await many of them post-surgically. With this knowledge, health professionals working in the field of obesity surgery would be better equipped to help patients prepare for post-surgical changes and, ideally, impact both their quality of life and, consequently, their surgical outcomes.

The present study will explore the psychometric properties of the newly designed Weight-Related Relationship Adjustment Questionnaires for parenting, work, dating, family of origin, and friend relationships. The psychometric data will be presented for each questionnaire and used to determine the appropriateness of utilizing these measures for subsequent statistical analyses exploring these five relationship domains across time.

Weight loss and psychological well-being

Hypothesis 1: Patients will experience a significant reduction in body weight across time.
Hypothesis 2: Patients will experience significant improvements in psychological well-being (self-esteem, body-image, psychological symptomatology, and assertiveness) across time.

Sexual functioning

Hypothesis 3: Patients will experience significant improvements in Global Sexual Functioning across time.

Hypothesis 4: The relationship between percent of excess BMI lost and Global Sexual Functioning will be mediated by improvements in body image.

Marital functioning

Hypothesis 5: There will be no mean change in dyadic adjustment over time.

Hypothesis 6: Patients determined to be in low-functioning marriages based on presurgical scores of dyadic adjustment will experience a reduction in marital adjustment after surgery. Patients determined to be in high-functioning marriages based on presurgical scores of dyadic adjustment will experience improvements in marital adjustment across time.

Hypothesis 7: The relationship between weight loss and changes in dyadic adjustment (both improvements and losses) will be mediated by improvements in psychological well-being (self-esteem, body image, psychological symptomatology, and assertiveness).

Parenting relationships

Hypothesis 8: Patients will experience significant improvements in parenting relationships across time.
**Exploratory analyses**

Exploratory analyses will investigate the direction and magnitude of change in work, dating, family of origin and friend relationships across time and determine whether improvements in psychological well-being mediated these changes. Patients' presurgical expectations of relationship improvement, as well as the importance of improvement, will also be explored and compared to objective measures of relationship change at follow-up.
CHAPTER 3

METHODOLOGY

Participants

Participants consisted of patients who had elected to undergo weight loss surgery for morbid obesity at a local clinic from February to August of 2003. Participants met all approval guidelines set forth by the surgeon as well as, in some cases, further restrictions imposed by their insurance companies. In order to be selected as a candidate for surgery at this particular clinic, a patient typically must have a BMI equal to or greater than 39, substantial weight-related medical comorbidities, a history of at least one substantial weight loss attempt, and no previous or current gross psychopathology that would preclude them from being a fit surgical candidate. At the time of the study, assessment of the latter exclusion criterion was conducted through either an interview with the surgeon, or, when required by the insurance company, a general psychological examination. While presurgical psychological examinations are steadily becoming standard practice, there is no consensus on whether there are any psychosocial predictors of weight loss surgery outcome. And so, typically, these assessments serve to identify patients with severe mental conditions such as psychosis or suicidal behavior, as well as any other overwhelming indication that the patient is currently psychologically unfit to undergo major surgery.
One hundred and thirty four consecutive patients were approached to participate in the present study. Two patients chose not to participate for unspecified reasons, one patient could not participate due to a language barrier, and one patient completed only one-fourth of the protocol and therefore was not included in the study. Of the remaining 130 participants who completed the preoperative assessment battery, 18% \((n = 20)\) were male. Due to the disproportionate representation of females compared to males, between-group comparisons were compromised and it seemed preferable to exclude men from the present analyses and forgo investigation of potential gender differences. Thus, only the female data will be presented.

**Completers versus Non-Completers**

Out of the 110 women who participated in the study preoperatively, sixty-two percent \((n = 68)\) completed the assessment battery at three- and six-months following surgery. Of the patients who dropped out (non-completers) several reasons were cited for not continuing in the study. The most common reason cited was response burden as patients felt they could not take the time to complete the questionnaires. Two patients declined further participation because they felt that some of the content of the questionnaires - specifically that which related to sexuality - was too personal. Two patients who participated preoperatively died of obesity-related (not surgery-related) health problems during the follow-up period.

Participants who did not complete the battery at all three assessment times \((n = 42)\) were significantly younger \((M = 36.55 \text{ years}, SD = 8.74)\) than the completers \((n = 68, M = 40.60, SD = 10.67)\), \(F(1, 108) = 4.29, p < .05\). They were also more likely to be non-Caucasian, \(\chi^2(1, N = 110) = 15.98, p < .01\). There were no other significant baseline
differences between the completers and non-completers on any demographic or standardized dependent measures (i.e., relationship status, education level, weight, BMI, surgery type, sex abuse history, dyadic adjustment, global sexual functioning, self-esteem, assertiveness, body image, or psychological symptomatology).

Characteristics of Completed Participants

The majority of participants were middle-aged, overwhelmingly Caucasian, had some college education, were employed full-time and lived with their romantic partner or spouse. A summary of the demographic characteristics of the completed participants is presented in Table 1.

Procedure

The present study met all guidelines set forth by the Office for the Protection of Research Subjects, Institutional Review Board at the University of Nevada, Las Vegas. The investigator approached patients in the waiting area of a local bariatric surgery clinic on the day of their final pre-operative appointment. A description of the study and content of the assessment measures was provided. Patients were informed that their participation would involve a preoperative, as well as two postoperative assessments. The investigator then explained that each assessment period would require approximately one hour of the patients' time. The patients were also informed of their confidentiality, reassured of their right to withdraw at any time, and provided with relevant contact information. Patients who wished to be a part of the study were then provided an informed consent to sign. The participants then proceeded to complete the battery of questionnaires in the waiting room while the investigator called each patient individually.
into an exam room to complete the structured interview and expectation questions. Following surgery, patients were then contacted by the primary investigator to arrange for three- and six-month assessment times that corresponded with the dates and times of their follow-up visits at the clinic. It was often the case that patients would not schedule, not show, or reschedule their clinic appointments. In these instances, their assessment packets were mailed directly to their homes with their permission, in a postage-paid, return envelope.

Structured Interview and Measures

After signing the informed consent forms (Appendix I), patients participated in a brief 24-item structured interview (Appendix II) designed to assess basic demographic information such as age, body mass index (BMI), and marital status.

Several psychological variables (i.e., self-esteem, assertiveness, psychological symptomatology, and body image) were hypothesized to improve as patients lost weight after surgery. The following widely used measures were completed at each time interval to assess what will be referred to, collectively, as psychological well-being (Appendix III):

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965; Rosenberg, 1979): The RSE is a widely used, 10-item self-report measure of global self-esteem. Patients rate the degree to which they agree or disagree with each statement reflecting a feeling about the self on a four point scale. A sample item is “I wish I could have more respect for myself.” In young adult women, the Rosenberg Self-Esteem Scale has been shown to have good internal consistency with a reliability alpha coefficient of .91 and test-retest reliability.
ranging from .80 - .85 (Rosenberg, 1979). Scores range from 10-40 with higher scores indicating more self-esteem impairment.

Body Image subscale of the Derogatis Sexual Functioning Inventory (DSFI; Derogatis, 1993; Derogatis & Melisaratos, 1979): The Body Image (BI) subscale of the DSFI is designed to assess patients’ feelings about physical aspects of their self. The subscale is comprised of 20 total items, out of which 15 are completed depending on the gender of the participant. Participants rate each item on a five-point Likert-type scale ranging from not at all (1) to extremely (5). A sample item is “I am embarrassed to be seen by a lover.” Coefficient alphas have been reported as .82 for males and .81 for females (Meston, Heiman, Trapnell & Paulhus, 1998). Scores range from 15 to 75 with higher scores indicating greater body image disturbance.

Brief Symptom Inventory (BSI; Derogatis, 1993; Derogatis & Melisaratos, 1979): The BSI is comprised of 53-items that assess nine dimensions of psychopathology (somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, paranoid ideation, psychoticism, phobia, hostility). A Global Severity Index (GSI) can be computed and represents an overall level of psychological distress. Patients are asked to rate how much they were distressed or bothered by each symptom in the last two weeks on a 5-point Likert-type scale ranging from 1 (not at all) to 5 (extremely). A sample item is “Feeling lonely even though you are with people.” Each scale of the Global Severity Index (GSI) has been shown to have good internal consistency with Cronbach’s alpha reliability coefficients ranging from .71 (for psychoticism) to .85 (for depression) (Derogatis, 1993). Alpha for the GSI has not been reported. Test-retest reliability for the
GSI has been reported as .90 (Derogatis, 1993). GSI scores range from 0 to 4 with higher scores indicating greater symptom severity and psychological distress.

Rathus Assertiveness Schedule (RAS; Rathus, 1973): The RAS is a 30-item questionnaire used to assess general assertiveness. Patients are asked to rate how characteristic or descriptive each item is of them on a scale ranging from -3 (very uncharacteristic of me/extremely non-descriptive) to +3 (very characteristic of me/extremely descriptive). A sample item is “To be honest, people often take advantage of me.” The measure is shown to have high test-retest reliability ($r = .78; p < .01$) and split-half reliability ($r = .77; p < .01$) (Rathus, 1973). Scores range from negative 90 to positive 90 with higher scores indicating greater assertiveness.

The following widely used and well-validated measures of sexual and marital relationships were included in the battery (Appendix IV):

Sexual History Form (SHF: Nowinski & LoPiccolo, 1979): Based on patient responses to the 46-item Sexual History Form, a Global Sexual Functioning Score will be calculated. The Global Sexual Functioning Score (Creti, et al., 1998) is based on 12 gender specific items that measure sexual desire, arousal, orgasm, frequency of sexual activities, and overall sexual satisfaction and has demonstrated good reliability and validity. The Global Sexual Functioning scores has shown adequate reliability in males (Cronbach’s $[\alpha] = .65$). For the female Global Sexual Functioning score, good internal consistency has been reported as indicated by item-total correlation coefficients ranging from .18 to .85, with the majority of values between .50 and .70 (Creti, et al., 1998). In a sample of 27 married women, the Global Sexual Functioning score has been shown to have excellent temporal stability, as indicated by a two week test-retest...
reliability of .92 (Creti et al., 1988). Construct validity indicates that the Global Sexual Functioning score discriminates between women diagnosed with sexual dysfunction and women functioning well (Creti et al., 1988). Global Sexual Functioning scores range from greater than 0 to less than 1. Higher scores indicate greater sexual dysfunction.

Dyadic Adjustment Scale (DAS; Spanier, 1976): The DAS is a 32-item self report measure of the marital quality (or similar dyads). The measure contains thirty-two items that pertain to four subscales: dyadic consensus, dyadic satisfaction, dyadic cohesion, and affectual expression. Responses are rated along a series of 5- and 6-point Likert-type scales, two yes/no questions, and one question in which patients are asked to endorse the statement which best reflects their expectations of their relationship (six response alternatives provided). The DAS has shown excellent reliability (Cronbach's alpha = 0.96) (Spanier, 1976). Over an 11 week interval, test-retest reliability of responses has been reported as r = .96 suggesting excellent construct stability (Stuart, 1992). The measure has also been shown to reliably discriminate between divorced and currently married samples (Spanier, 1976). A sample item is “In general, how often do you think that things between you and your partner are going well?” Scale scores over 99 suggest relationship stability and overall satisfaction (Stuart, 1992). Scores on the DAS range from 0 to 151 with higher scores indicative of better marital quality.

In addition to the well-validated measures of sexual and marital functioning this study included newly developed measures to assess the remaining five relationship domains (Appendix V):

Weight-Related Relationship Adjustment Questionnaires (Bocchieri-Ricciardi, Meana, & Fisher, 2004): The Weight-Related Relationship Adjustment Questionnaires
(WRRAQ) are a set of newly developed instruments designed for the purpose of the present study. These measures are designed to serve as pilot data for potentially constructing a multiple-scale, psychometrically sound measure of relationship change following weight loss. This was the first time these questionnaires were utilized and the first time the psychometric properties of the questionnaires were examined. There are five questionnaires that assess dating, parenting, work, family of origin and friend relationships. Each questionnaire has ten-items designed to assess relational adjustment before and after weight loss surgery. Each item of each questionnaire was derived directly from the results of a previous qualitative study (Bocchieri et al., 2002a), in which patients were asked to describe, at length, perceived relationship changes after weight-loss surgery. A sample item taken from the WRRAQ-Parenting reads as follows: “I felt that my children were embarrassed to bring friends home.” On a scale from 1-10, with 1 being “Not at all true” and 10 being “Very true,” patients were asked to rate the extent to which each item accurately reflected their experience over the course of the previous three months. Each measure ranges from 10 to 100 with higher scores indicating greater relationship adjustment.

In order to assess the extent to which the pilot measures correlate with other standardized instruments of relationship satisfaction, the following well-validated relationship measure was included at six month follow up (Appendix IV):

Relationship Assessment Scale (RAS; Hendrick, 1988): The RAS is a 7-item, psychometrically sound, generic measure of relationship satisfaction. Psychometric analyses indicate a unifactoral scale structure, substantial factor loadings, and moderate intercorrelations among the items. The RAS has a reliability alpha coefficient of .86
(Hendrick, 1988). The measure has been found to correlate substantially with other indices of relationship functioning, such as the Dyadic Adjustment Scale, and it has been found to reliably discriminate between couples who stay together from couples who broke up (Hendrick, 1988). Five versions of the RAS were adapted in order to assess each of the five WRRAQ domains. For friendships, for example, rather than the generic RAS item, “How good is your relationship compared to most?” the item was adapted to read, “How good are your relationships with your friends compared to other people’s friendships?” Scores on the RAS range from 7 to 35 with higher scores indicating higher relationship satisfaction.

Patients also completed the following pilot measure designed to assess their expectations of relationship improvement (Appendix VI):

Expectation of Relationship Improvement Index (Appendix III): For each of the seven relationship domains, two items were included to explore patient’s presurgical expectations of improvement and the importance of improvement in each domain. Patients were asked to rate, on a scale from 1-7, in which 1 was “not at all” and 7 was “completely,” the extent to which they expected each particular relationship domain to improve following weight-loss surgery. Then, on a separate 7-point scale using the same anchors, patients were asked to rate the extent to which improvements in that domain was important to them. Responses to the two items for each domain were multiplied. This value, referred to as the Expectation of Relationship Improvement Index (ERII) yields a number that ranges from 1 to 49, with higher scores reflecting higher expectations and importance of relationship improvement.
Data Analysis

In 1999, The American Psychological Association (Wilkinson, L. and Task Force on Statistical Inference, APA Board of Scientific Affairs, 1999) published a report advising researchers to consider statistical power when designing their research, preferably prior to collecting the data. Power is the probability of detecting a meaningful difference if one was to occur. It is calculated based on the significance criterion chosen (i.e., alpha level), power level desired, and an anticipated effect size, and can determine the sample size necessary to meet these specifications (Cohen, 1988).

For several reasons, power analyses were not conducted prior to the onset of the present study. A priori calculations of power require an estimate of the magnitude of a given effect. The APA states that these estimates of effect size should be derived based on previous research and theory (Wilkinson, L. and Task Force on Statistical Inference, APA Board of Scientific Affairs, 1999). Only a few of studies to date have specifically explored the psychosocial outcomes of surgery (see Bocchieri et al., 2001, for review) and as the review of the literature for the present study suggests, only a handful of these studies have investigated relational constructs. Of the limited number of studies that have explored relationship variables in obesity surgery patients, the methods utilized to collect and analyze data have varied considerably and effect sizes have typically not been reported. Thus, informed decisions regarding the precise effects of surgical weight loss on relationship variables was not available prior to the study.

A second issue that precluded the inclusion of a priori power analyses was the limited access of the sample being studied. This investigation was based on a very specific and difficult to access clinical population. To illustrate this point, there was only one
practicing bariatric surgeon in the state at the time this study was conducted. Based on the average rate of operations being practiced in this particular clinic each week, it was anticipated that data from approximately 100 patients could be gathered in the maximum time available for patient recruitment, while still allowing for six months follow-up assessments on each participant. The goal, essentially, was to obtain the largest sample size possible within the available time frame.

A final, and related, issue that prevented a priori calculations of power was that there was no reliable method by which to calculate the number of patients that would fit each particular relationship domain (e.g., married, sexually active, dating, parenting, etc.). For longitudinal analyses, there was also no way of knowing the attrition rate over time as this number has varied substantially from one study to the next and are generally quite large. Consequently, manipulations of sample size in attempt to boost statistical power, although ideal, were simply not feasible.

SPSS provides the option of reporting the after-the-fact, or “observed power.” when a priori calculations have not been conducted. However, with results that are not statistically significant, the power to detect the effect is, by definition, very low, and as a result there seems to be a consensus that power analyses conducted after the fact add no meaningful information (Levine & Ensom, 2001). When a priori power analyses are not possible, APA does not recommend reporting the observed power (Wilkinson, L. and Task Force on Statistical Inference, APA Board of Scientific Affairs, 1999).

APA does recommend that effect sizes be reported after an analysis has been conducted (Wilkinson, L. and Task Force on Statistical Inference, APA Board of Scientific Affairs, 1999). Where applicable, partial eta squared ($\eta_p^2$) will be reported as
the measure of effect size. This value is computed by SPSS and is a measure of both the
effect and the error variance that can be attributable to an effect. Partial eta squared
represents an estimate of association between the independent and dependent variables
and is the preferred alternative to eta squared for estimating effect sizes in a sample
(Tabachnik & Fidell, 2001). The value of partial eta squared will typically range from 0.0
to 1.0 but can exceed 1.0 (Tabachnik & Fidell, 2001).

The present protocol contained over fifteen distinct measures and was administered at
three occasions. As expected, participants occasionally made errors or missed items when
completing the protocol. According to Tabachnik and Fidell (2001), missing data is one
of the most pervasive problems that researchers face. Tabachnik and Fidell (2001)
suggest that the seriousness of missing data depends on the pattern, quantity, and
potential reasons for the missing data. One method of addressing the issue of missing
data is to delete cases or variables; however, this method can result in a substantial loss of
participant data. Another option is to only remove data from the affected measure while
keeping the remaining, completed measures for that case. A guideline of less than 5% of
the data missing was used to determine whether or not the entire measure should be
excluded from the analysis. In cases when missing data accounted for less than 5% of the
total measure (e.g., 1 missing item out of 20 total items) a mean substitution, as outlined
by (Tabachnik & Fidell, 2001), was utilized. This method is a widely-utilized,
conservative approach to handling missing data.

Investigation of Psychometric Properties of the WRRAQ’s

To explore the psychometric properties of the pilot relationship measures, internal
consistency and convergent validity of each WRRAQ were investigated by computing
Cronbach’s coefficient alpha and correlating each pilot measure with the Relationship Assessment Scale. Additionally, principal-component analyses (PCA) were applied in an attempt to explore and potentially reduce the dimensionality of the measure by removing items that do not appear meaningful to the measurement of the construct being assessed. 

**Hypothesis 1: Patients will experience a significant reduction in body weight across time.**

To explore the extent to which patients experience a significant reduction in body weight across time, body weight in pounds, BMI, and percent of excess BMI lost will be calculated at each assessment time. Body Mass Index, or BMI, is an index of body weight relative to one’s height and, while not without its limitations, it is the most widely accepted method of determining whether a person’s weight is healthy for an individual at their height. Percent excess BMI lost is calculated based on the degree to which an individual differs from an ideal BMI of 25. Weight in pound, BMI, and percent excess BMI will each be subjected to a repeated measures ANOVA’s to explore changes in body weight across time.

**Hypothesis 2: Patients will experience significant improvements in psychological well-being** (self-esteem, body-image, psychological symptomatology, and assertiveness) **across time.**

Presurgical means of each of the psychological well-being variables will be correlated to ensure the appropriateness of including these measures in a MANOVA. Once deemed appropriate, repeated measures MANOVA, with time as the within-subjects variable, will be conducted on all psychological well-being measures for each time interval to explore significant changes in psychological well-being across time.
Hypothesis 3: Patients will experience significant improvements in Global Sexual Functioning across time.

For patients who completed the sexual functioning measure at each assessment time, global scores of sexual functioning will be subjected to repeated measures ANOVA to explore significant changes across time.

Hypothesis 4: The relationship between percentage change in excess BMI and Global Sexual Functioning will be mediated by improvements in body image.

Hypothesis 4 rests on the assumption that there will be significant improvements in Global Sexual Functioning across time. If this hypothesis is supported, mediational analyses, as outlined by Barron and Kenney (1986), will be conducted to determine the extent to which sexual functioning improvements are mediated by body image improvements.

Hypothesis 5: There will be no mean change in dyadic adjustment across time.

For patients who completed the Dyadic Adjustment measure at each time interval, their dyadic adjustment scores will be subjected to repeated measures ANOVA to explore significant changes across time.

Hypothesis 6: Patients determined to be in low-functioning marriages based on presurgical scores of dyadic adjustment will experience a reduction in dyadic adjustment after surgery. Patients determined to be in high-functioning marriages based on presurgical scores of dyadic adjustment will experience improvements in dyadic adjustment across time.

Patients who completed the Dyadic Adjustment Scale (DAS) at each time interval will be divided into low- and high-adjustment groups based on their presurgical scores of
Dyadic Adjustment. Changes in Dyadic Adjustment will be computed into a ratio score consisting of Time 3 DAS score divided by Time 1 DAS score. This will yield a score that, if higher than 1.0 would indicate an improvement from presurgical functioning and, if lower than 1.0, would indicate a decline from presurgical functioning. For example, a ratio score of 2.0 would indicate a doubling of the DAS score from preoperatively to six months follow-up. A repeated measures ANOVA will then be conducted with DAS group (low versus high-adjusted) as the between subjects variable, time as the within subjects variable, and DAS ratio score as the dependent variable to determine the extent, if any, to which the low-adjustment group deteriorates and the high-adjustment marriages improve.

Hypothesis 7: The relationship between weight loss and changes in dyadic adjustment (both improvements and losses) will be mediated by improvements in psychological well-being.

Hypothesis 7 rests on the hypothesis that there is a differential impact of weight loss surgery on low-functioning, compared to high-functioning, marriages (Hypotheses 6). If this hypothesis is supported, mediational analyses, as outlined by Barron and Kenney (1986), will be conducted to determine the extent to which improvements in psychological well-being mediate the relationship between changes dyadic adjustment (both improvements and declines) and weight loss.

Hypothesis 8: Patients will experience significant improvements in parenting relationships across time.

Repeated measures ANOVA will be conducted on the WRRAQ-Parenting to explore whether significant changes occur in parenting relationships across time.
**Exploratory Analysis I**

We will investigate the direction and magnitude of change in work, dating, family of origin, and friend relationships across time and determine whether improvements in psychological well-being mediate these relationship changes.

To explore changes across time, data for each specific relationship domain will be subjected to repeated measures ANOVA's. Separate ANOVA's will be performed rather than a MANOVA because, while these relationship domains may be related, a MANOVA would only include those subjects who completed all four measures across each time, thus limiting the sample size and power dramatically.

Regression analyses will then be performed for each separate relationship domain to determine the extent to which improvements in psychological well-being predicts relationship change.

**Exploratory Analyses II**

For each of the relationship domains, the correlation between patient expectations of relationship improvement and importance of relationship improvement will be investigated. The two values for each domain will be multiplied together to yield an Expectations of Relationship Improvement Index (ERII). The EERI for each domain will be compared to actual relationship change in the respective domain. These exploratory statistics will be conducted using bivariate correlations with Bonferroni corrections for multiple comparisons.
The following section consists of the exploratory psychometric analyses of the Weight-Related Relationship Adjustment Questionnaires (WRRAQ's). As reliability and principal component analysis (PCA) were conducted on the presurgical administration of the WRRAQ's, they were not limited to participants who completed the entire protocol. Thus, sample sizes for these analyses range from 65 to 104. Convergent validity analyses consisted of comparisons to the Relationship Assessment Scale (RAS; Hendrick, 1988) which was administered at Time 3. Thus, validity analyses were indeed limited to women who completed the entire protocol. Due to the fact that only a handful of participants completed the WRRAQ-Dating, psychometric properties of this measure were not investigated in the present study. Reliability, validity, and PCA data will be provided for the remaining pilot measures with the recognition that ongoing data collection will be necessary to determine the psychometric properties of each measure with greater confidence. For each of the four pilot measures, alpha will be presented, followed by correlational data of the WRRAQ and Hendrick's RAS. This will be followed by the results of PCA, which, in addition to the reliability analyses, will be used to determine
revisions made to the item structure of the measure. Results of a second reliability and validity analysis on the revised version of each WRRAQ will be provided. A summary of the reliability and validity analysis is presented in Table 2.

Sixty-five mothers completed the WRRAQ-Parenting prior to surgery. Cronbach’s alpha coefficient for the initial ten-item measure was .73, which is considered acceptable inter-item reliability. Reliability analyses indicated that if two of the items were removed, the alpha level would increase. The 10-item WRRAQ-Parenting was shown to correlate significantly with Hendrick’s RAS (adapted for parent-child relationships) at time 3, \( r(24) = .47, p < .05 \) (Table 2), indicating good convergent validity. Results of the initial PCA using Oblimin with Kaiser Normalization rotation indicated four components with Eigenvalues equal to or greater than 1.00 accounting for 67% of the total variance (see Table 3). The largest component (Eigenvalue = 3.07) accounted for nearly half of that variance (31%). Closer inspection revealed that the three smaller components lacked a sufficient number of items with substantial loadings to comprise an actual component (at least three), there was a high degree of cross-loading among the items, and there appeared to be no interpretable theoretical link among the limited items of the three smaller components. Therefore, a forced one-component solution was applied to the ten items and component loadings were reexamined (Table 4). The two items with the least substantial loadings (items 2 and 8) were discarded. These were the same items that, if removed, were indicated to increase the coefficient alpha. Preliminary component analysis results of the revised WRRAQ-Parenting \((N = 65)\) suggest an eight-item, one-component solution with each item loading greater than .42 and an Eigenvalue of 2.9 accounting for 37% of the total variance (see Table 5). A second reliability analysis of the
8-Item WRRAQ-Parenting indicated an increase in coefficient alpha from .73 to .74 (see Table 2), suggesting acceptable inter-item reliability and providing further support for the changes made to the original measure.

Eighty-five participants completed the original WRRAQ-Work prior to surgery. The inter-item reliability of the 10-item measure was good, as indicated by a Cronbach’s alpha coefficient of .81. Reliability analyses indicated that the alpha level would increase if 1 item was removed. The 10-item WRRAQ-Work was shown to correlate significantly with Hendrick’s RAS (adapted for work relationships) at time 3, \( r(35) = .47, p < .01 \), indicating good convergent validity (see Table 2). Rotated PCA using Oblimin with Kaiser Normalization revealed two components with Eigenvalues greater than 1 (see Table 6). These two components accounted for 59% of the variance, with the first component (Eigenvalue = 4.34) accounting for the substantial majority of that variance (43%). Closer inspection of the two components revealed that all items loading on the second component cross-loaded substantially (at least .26) with the items on component one. Additionally, the items loading on the second component loaded in both positive and negative directions and the pattern of the loadings among these items did not allow for any meaningful theoretical interpretation. Thus, a forced one component solution was applied to the 10-item WRRAQ-Work (see Table 7). This component yielded an Eigenvalue of 4.34 accounting for 43% of the variance. With the forced one-component solution, all items, except item 5, loaded at least .55 in the positive direction. Item 5, which loaded -.05 on the component, was also the item that, if deleted, was indicated to increase the alpha coefficient. Therefore, item 5 was removed and a forced one-component solution was applied to the 9-item WRRAQ-Work (Table 8). Preliminary
component analysis results of the revised 9-item WRRAQ-Work suggests a one-component solution, with all items loading greater than .55, and an Eigenvalue of 4.34 accounting for 48% of the variance. A second reliability analysis on the revised 9-item WRRAQ-Work indicated an increase in alpha from .81 to .85 (see Table 2), suggesting good reliability and providing support for changes made to the original measure.

One-hundred and three women completed the WRRAQ-Family of Origin prior to surgery. The coefficient alpha of the initial 10-item measure was .87, demonstrating good inter-item reliability. If items 8 and 9 were deleted, the reliability coefficient would increase. There was a strong, significant correlation between the WRRAQ-Family of Origin and Hendrick's RAS (adapted for family of origin relationships) at time three, \( r(50) = .65, p < .01 \) (see Table 2), suggesting excellent convergent validity. Rotated PCA using Oblimin with Kaiser Normalization indicated two components with Eigenvalues greater than 1 (see Table 9). These two components accounted for 62% of the variance, with the first component (Eigenvalue = 4.99) accounting for the substantial majority of that variance (50%). Inspection of component two revealed that only two items (8 and 9) had substantial loadings. A forced one-component solution was applied to the WRRAQ-Family of Origin. The results are displayed in Table 10. Items 8 and 9 clearly loaded the least on the one component extracted and these items were also indicated in the reliability analysis to increase the alpha coefficient if deleted. Therefore, they were removed and a forced one-component solution was applied to the 8-Item WRRAQ-Family of Origin (see Table 11). Preliminary component analysis results of the WRRAQ-Family of Origin suggest an 8-item, one-component solution, with all loadings greater than .60, and an Eigenvalue of 4.34 accounting for 59% of the variance. A second reliability analysis on
the revised 9-item WRRAQ-Family of Origin indicated an increase in coefficient alpha from .87 to .89 (see Table 2), suggesting excellent inter-item reliability and providing support for changes made to the original measure.

One-hundred and four women completed the WRRAQ-Friendship preoperatively. The coefficient alpha of the initial 10-item measure was .82, demonstrating good inter-item reliability. If items 8 and 9 were deleted this would increase the reliability coefficient. The WRRAQ-Friendship correlated significantly with Hendrick’s RAS (adapted for friendships) at time three, $r(53) = .57, p < .001$ (see Table 2), suggesting excellent convergent validity. Rotated PCA using Oblimin with Kaiser Normalization indicated two components with Eigenvalues greater than 1 (see Table 12) that accounted for 57% of the variance. The first component (Eigenvalue = 4.19) accounted for the bulk of that variance. Examination of the components revealed that the majority of the 5 items with substantial loadings on the second component cross-loaded considerably with the items on component one. The pattern of the loadings among these items did not allow for any meaningful theoretical interpretation. Consequently, a forced one component solution was applied to the 10-item WRRAQ-Friendship (Table 13). Based on both the results of the reliability analyses and the finding that items 8 and 9 had the lowest component loadings (.36 and .40, respectively), these items were removed. A forced one-component solution was applied to the eight remaining items. The results of the 8-item forced one-component analysis are presented in Table 14. Preliminary component analysis results of the revised WRRAQ-Friendship suggest an 8-item, one-component solution, with all loadings greater than .53 or, and an Eigenvalue of 3.99 accounting for 50% of the variance. A reliability analysis on the 8-item WRRAQ-Friendship indicated an increase
in coefficient alpha from .82 to .84 (see Table 2), suggesting good interitem reliability and providing support for the changes made to the original measure.
CHAPTER 5

FINDINGS OF THE STUDY

Overview of Findings

The order of the analyses will be as follows: First, results of analyses exploring the relationship between participant demographics and dependent measures will be presented. This will be followed by a description of all of the findings presented in the order of the hypotheses. Descriptive statistics and tests of significance will be provided for weight loss indices and standardized measures of psychological well-being, dyadic adjustment and sexual functioning across time. Additionally, this section will include descriptive statistics and tests of significance for the pilot relationship measures exploring changes across time. Lastly, data pertaining to the relationship between patient expectations relationship improvement and actual change will be presented.

Relationship Between Sample Characteristics and Dependent Measures

There was no significant association found between any of the sociodemographic variables and change across time on any of the standardized dependent measures. The only patient characteristic that was associated with change in a dependent variable across time was surgery type. There was a statistically significant impact of surgery type (Gastric Bypass compared to Lap-Band) on percentage of excess BMI lost (PEBMIL) across time, $F(2, 132) = 493.05, p < .001, \eta_p^2 = .88$. There was also a statistically
significant Time X Surgery Type interaction, $F(2, 132) = 19.52, p < .001, \eta^2_p = .23$. These two significant results reflect the fact that participants who underwent gastric bypass surgery were heavier than Lap Band patients presurgery and lost a greater percentage of their excess BMI at three and six months. For the purpose of this study, the following analyses do not control for surgery type, as there were no significant differences between the two surgery groups on any of the standardized dependent measures other than percent of excess BMI lost.

An examination of the relationship between ethnicity and outcome variables was not possible due to the small number of African-American ($n = 2$), Hispanic-American ($n = 3$), and participants of other unspecified ethnicities ($n = 5$).

**Hypothesis 1: Weight Loss**

To determine the extent to which patients experienced a significant reduction in body weight, three indices of body weight were analyzed for the present study (pounds, BMI, and percent of excess BMI lost). Table 15 displays the means and standard deviations for each of the following measures of body weight across time: weight in pounds, BMI, and percent excess BMI lost. Data for each index of body weight was subjected to a repeated measures ANOVA (Table 16). Greenhouse-Geiser adjustment was applied to compensate for violations of homogeneity of covariances. Overall, patients experienced significant reductions in weight in pounds, BMI, and percent of excess BMI. Pairwise comparisons with Bonferroni corrections revealed significant differences ($p < .001$) across all assessment times for each weight loss index (See Table 15).
Hypothesis 2: Psychological Well-Being

Hypothesis 2 stated that psychological well-being would improve across time. Fifty-eight participants successfully completed all measures of psychological well-being (self-esteem, body image, psychological symptomatology and assertiveness) at all three assessment times. The means and standard deviations of the psychological well-being variables at each assessment time are presented in Table 17. The means of these measures at Time 1 were correlated to support combining these variables in a MANOVA. Pearson product-moment correlations between these measures revealed significant relationships between all measures (see Table 18). Results from the repeated measures MANOVA on the psychological well-being variables indicated a significant overall main effect for time (see Table 19) on the dependent variables. Univariate analyses revealed significant improvements in self-esteem, body image, psychological symptomatology, and assertiveness across time (see Table 19). Pairwise comparisons with Bonferroni correction revealed the following: for self-esteem, body image, and psychological symptomatology there were significant improvements from Time 1 to Time 2, Time 2 to Time 3, and Time 1 to Time 3; for assertiveness, there were significant improvements from Time 1 to Time 3 and from Time 2 to Time 3 (see Table 17).

Hypothesis 3 and 4: Sexual Functioning

Hypotheses 3 stated that Global Sexual Functioning would improve across time. Thirty-six participants successfully completed the Sexual History Form at each of the three assessment times. The means and standard deviations of the Global Sexual Functioning scores are reported in Table 20 and indicate that there was no change in Global Sexual Functioning across time. The fact that there was no change in Global
Sexual Functioning across time was further supported by insignificant results of the repeated measures ANOVA (see Table 21) as well as a high correlation between Time 1 and Time 3 Global Sexual Functioning scores ($r(40) = .81, p < .001$). Hypothesis 4 was intended to test for a mediation effect of body image on sexual functioning improvements. As there were no significant improvements in Global Sexual Functioning, the analyses of Hypothesis 4 were not conducted.

**Hypotheses 5, 6 and 7: Dyadic Adjustment Scale**

Hypothesis 5 stated that there would be no change in dyadic adjustment across time. Thirty-three participants successfully completed the Dyadic Adjustment Scale at all three assessment times. The means and standard deviations for the DAS are displayed in Table 20. ANOVA results indicated that there was no significant main effect for assessment time on DAS scores (see Table 21). The lack of change in DAS scores was further supported by a high correlation between Time 1 and Time 3 scores ($r(38) = .65, p < .001$). To further explore the relationship between presurgical dyadic adjustment and change across time, low-functioning and high-functioning groups were created based on presurgical scores of dyadic adjustment. The creation of these groups was based on the findings of Stuart (1992) that suggest scores above 99 are indicative of relationship stability and overall satisfaction. Scores ranging between 64 and 99 (N = 10) were classified as low-functioning while scores ranging from 100-132 were classified as high-functioning (N = 23). The preoperative means of each group were 92.10 (SD = 10.34) and 115.52 (SD = 9.63), respectively, and these means were significantly different ($F(1, 69) = 122.79, p < .001$). To explore potential differences in relationship change across time between these groups, a repeated measures ANOVA was conducted with dyadic
group (low versus high) as the between-subjects factor and DAS change ratio scores as the dependent variable. The results of this analysis are presented in Tables 22. There were no significant main or interaction effects.

**Hypotheses 8 and Exploratory Analyses I: Weight-Related Relationship Adjustment Questionnaires**

Hypothesis 8 stated that parenting relationships would improve across time. The means and standard deviations of the revised 8-item WRRAQ-Parenting at each assessment time are presented in Table 23. Results of the repeated measures ANOVA are reported in Table 24. The effect of time on WRRAQ-Parenting scores was significant and pairwise comparisons with Bonferroni correction revealed significant improvements in parent-child relationships across all assessment time comparisons (see Table 23).

The present study made no predictions regarding direction of change in the remaining 3 pilot measures, so this aspect of the analysis was exploratory. Means and standard deviations of the revised Work, Family of Origin, and Friendship pilot measures are presented in Table 23. Repeated measures ANOVA’s revealed that the effect of time on WRRAQ scores was highly significant for all three pilot measures (Table 24). Pairwise comparisons with Bonferroni correction are reported in Table 23. WRRAQ-Work and WRRAQ-Friendship scores improved significantly from Time 1 to Time 2 and from Time 1 to Time 3, while WRRAQ-Family of Origin scores indicated significant improvements across all time comparisons (see Table 23).

Although there were no hypotheses made regarding the direction of change in work, family of origin and friend relationships across time, it was proposed that changes in these measures across time would be predicted by improvements in psychological well-
being. To test the extent to which improvements in these three relationship domains were mediated by improvements in psychological well-being, self-esteem, psychological symptomatology, and body image were first reverse coded for better interpretability. Therefore, a positive increase in scores on any of the measures corresponded to an improvement of the construct being assessed. Ratio scores were then computed for all psychological well-being variables and WRRAQ’s using the same method described for the Dyadic Adjustment Scale (Time 3 scores divided by Time 1 scores). This resulted in ratio scores for psychological well-being and WRRAQ’s that, if higher than 1 indicate the percent increase on the measure and if lower than 1 indicate the percent decrease on the measure. Due to varying samples for each WRRAQ, the means, standard deviations, and intercorrelations between each WRRAQ and psychological well-being ratio scores are presented separately in Table 25 for WRRAQ-Work, Table 26 for WRRAQ-Family of Origin, and Table 27 for WRRAQ-Friendship. Three separate regression analyses were performed to determine the extent to which improvements on each WRRAQ could be predicted by improvements in psychological well-being. Results of regression analyses with psychological well-being ratio scores as the independent variables are presented in Table 28 for the WRRAQ-Work, Table 29 for the WRRAQ-Family of Origin, and Table 30 for the WRRAQ-Friendship. For improvements on the WRRAQ-Work and WRRAQ-Family, psychological well-being ratio scores as regressors were not good predictors of relationship improvement as indicated by the values of the adjusted $R^2_{adj}$ (4%, 6%). For the WRRAQ-Friendship, the regression was also a rather poor fit ($R^2_{adj} = 18\%$), but the overall relationship was significant $F(4, 53) = 4.12, p < 0.01$, suggesting that overall
improvements in psychological well-being accounted for a rather small, albeit significant, percentage of the variance in friendship improvement.

*Exploratory Analyses II: Expectations*

For the six relationship domains, patient ratings of their expectations of relationship improvement were correlated with patient ratings of importance one placed on improvement in that particular relationship domain. The correlations ranged from .68 to .94 and were all highly significant at the $p < .001$ alpha level. For each relationship domain, the two values (expectation and importance) were multiplied. The means and standard deviations of the Expectations of Relationship Improvement Index (ERII) for each of the six relationship domains (sexual, marital, parenting, work, family of origin, and friendships) are presented in Table 31. Possible scores ranged from 1 to 49 with higher scores indicating greater expectations and importance of relationship improvement. Relationship change, represented by the dependent variable ratio score in each particular domain, was correlated with the respective ERII scores. Ratio scores for all measures, if higher than 1 indicated an improvement in that domain and, if lower than 1, indicated a decline (Global Sexual Functioning scores were reverse coded for this purpose). Only two of the six comparisons revealed a significant correlation between ERII and actual relationship change. There was a significant negative correlation between the ERII and the DAS ratio scores, $r(35) = -.34, p < .05$, and there was a significant positive correlation between ERII-Friendships and WRRAQ-Friendship ratio scores, $r(71) = .35, p < .01$ (see Table 32). Thus, the higher the expectation for marital improvement, the less likely improvement actually occurred, whereas the higher the expectation for improvement in friendships, the more likely it occurred.
CHAPTER 6

DISCUSSION

Women who underwent surgery for morbid obesity in this study experienced a dramatic reduction in BMI during the six-month period following their operation. As predicted, weight loss was accompanied by impressive gains in various aspects of patients' psychological well-being, including self-esteem, body image, psychological symptomatology, and assertiveness. Consistent with one of our hypotheses, marital adjustment scores remained unchanged across all time comparisons. However, the hypothesis that lack of change in mean marital adjustment scores might be accounted for by improvements in high functioning marriages and deterioration in low functioning marriages was not supported. Neither low- nor high-functioning marriages had changed at three or six months after surgery. Also unsupported was the hypothesis that sexual functioning would improve over time as patients' BMI decreased and their body image improved. Global Sexual Functioning scores remained unchanged. As anticipated, parenting relationships improved substantially across all time comparisons, as indicated by mothers' scores on the pilot Weight-Related Relationship Adjustment Questionnaires-Parenting (WRRAQ-Parenting). Exploratory analyses utilizing the pilot WRRAQ's revealed impressive, overall improvements in work, family, and friend relationships. In terms of expectations, exploratory analyses indicated that presurgical expectations of
marital improvement were inversely related to actual gains in marital functioning at six months, while expectations of friendship improvement were positively correlated with improvements in friendships at six months. Psychometric analyses of the WRRAQ’s determined their internal consistency and convergent validity to be acceptable to good although ongoing validation with larger samples is indicated. In summary, obesity surgery seemed to have positive effects after six months on psychological well-being, and on a number of relationships, with the exception of marriage and sex.

Within the first few months following weight loss surgery, patients underwent an extraordinary physical transformation. In merely three months, patients had achieved a loss of over 40% of their excess BMI. At six months follow-up, their excess BMI lost was 55%; a total reduction of over 73 pounds. These findings are impressive, although not unique, as previous weight-loss surgery studies report similarly dramatic outcomes within the first six-months following surgery (Dymek, Le Grange, Neven, & Alverdy, 2002). The fact that participants in the present study underwent one of two different types of weight-loss surgery operations (either laparoscopic adjustable banding (Lap-Band) or Roux-n-Y gastric bypass) also allowed for some comparisons.

Compared to Lap-Band patients, patients who underwent gastric bypass surgery started heavier and lost a greater percentage of their excess BMI by six months. This finding is not surprising as studies have consistently indicated that during the first year following surgery, weight loss tends to be greater with gastric bypass, a combined restrictive and malabsorptive procedure, compared to the Lap-Band, which relies solely on restriction of intake (Ren, Weiner, & Allen, 2004; Schauer, Ikramuddin, Gourash, Ramanathan, & Luketick, 2000). The benefits of Lap-Band surgery, however, are lower
morbidity and mortality rates and that the Lap-Band can, if indicated, be removed (Ren et al., 2004). Therefore, Lap-Band surgery, considered the less risky but potentially less effective operation (at least at one year), is typically not recommended for patients whose obesity and obesity-related health conditions are most severe.

Interestingly, despite the finding that gastric bypass patients started heavier and lost more of their excess weight, they did not differ from Lap-Band patients on any of the demographic variables or baseline standardized measures of psychological well-being, sexual function, or marital adjustment. There were also no differences between the two surgery groups in the extent to which weight loss impacted any of the standardized dependent variables across time. This suggests that, from a psychosocial perspective, once an individual has reached the point at which they can be classified as morbidly obese, variations in degree of adiposity, although statistically significant, may be of little clinical relevance. Morbid obesity appears to have a profound, detrimental impact on psychosocial well-being, regardless of the exact number of excess pounds. Similarly, removing a substantial portion of the obesity burden, regardless of differences in the actual percentage of body mass lost, appears to result in a similarly positive effect on an individual’s psychosocial universe, at least in the six months following weight loss surgery.

While improvements in psychological well-being after surgery are well-established (Bocchieri, et al., 2001), the findings of the present study highlight just how quickly after surgery psychological changes tend to occur. In the present study, improvements in three of the psychological well-being constructs (self-esteem, body image, and psychological symptomatology) were evident by three months after surgery, although they are likely to
have occurred much sooner. Rapid improvements in psychological well-being are supported by findings of another recent study by Dymek et al. (2002). After only two weeks, the authors found postoperative improvements in depression, self-esteem, and several health-related quality of life (HRQL) subscales (including improvements in physical functioning and energy). What is particularly interesting is that in this HRQL study, and in the present study, rapid, dramatic improvements in psychological well-being occurred despite the fact that patients were still well within the weight range classified as morbidly obese. While such immediate improvements in psychological well-being may reflect patients’ newfound optimism and hope regarding their future, Dymek et al. (2002) suggest that early changes were likely to represent “real” differences in the quality of their lives. If postoperative improvements in psychological well-being were solely the result of patients’ newfound hope, we would expect to see inflations across all dependent variables. However that was not the case in Dymek et al.’s (2002) study, in which some of the of the HRQL subscales remained unchanged, nor in this study which found no changes in assertiveness at three months.

The immediate changes in psychological well-being found in this study corroborate patient narratives describing positive changes in physical and psychosocial functioning as well as in the ways others are responding to them within weeks of their surgery (Bocchieri et al., 2002b). For example, patients may boast that they are able to walk further than they were able to prior to surgery without losing their breath. Many begin to reduce their medication dosage or discontinue it altogether because obesity-related comorbidities have improved. And many begin to fit more comfortably in their clothing, jewelry, and even their shoes.
Significant improvements in body image were evident across all time comparisons in this study. This is despite consistent reports in the literature of weight-loss related, physical changes, such as sagging skin, that have a negative impact on body image (Bocchieri, 2001; Bocchieri et al., 2001; Stuart & Jacobson, 1989). Like most standardized measures of body image, the instrument utilized in the present study did not address such body image complaints specific to obesity surgery patients. Large folds of excess skin, sagging breasts, incision scars, temporary hair loss, and feeling ‘older’ due to increased facial wrinkles are some of the body-image-related complaints that have been cited by patients after surgery (Bocchieri et al., 2002). While the findings of the present study suggest that these issues may not negate overall body image improvement following weight-loss surgery (at least at six months), the utilization of instruments that address these more negative changes may shed light on the relative impact of weight-loss related body-image. Body image, albeit improved, may never quite normalize to that of same-size counterparts who have not experienced a previous, dramatic weight loss. One study found significant differences in body image between two groups of normal-weight women in which members of one group had been overweight (Cash, Counts, and Huffine 1990). Women with a history of overweight regarded their bodies as fatter and less affectively satisfying than their same size counterparts who had never had a weight problem. The participants in the latter study were college age women who had not undergone weight loss surgery and so perhaps the residual effects of obesity on body image may be much greater in weight loss surgery patients. Obesity-surgery-specific facets of body image are of particular importance when one considers that some of the negative changes tend to be the reasons cited by female patients for actually feeling “less
"sexy" after surgery – a postoperative development that has a detrimental impact on sexuality (Bocchieri, et al., 2002b). Many of the changes, such as sagging skin and breasts and increased facial wrinkles, become more apparent as patients approach their ideal weight. Therefore, longer follow-up periods with measures that address weight-loss-surgery sensitive aspects of body image, are indicated.

The only psychological well-being variable that did not improve by three months was assertiveness. Of the four psychological well-being variables assessed in this study, assertiveness is the construct that has received the least research attention in the context of this population. This is interesting considering that being able to effectively assert oneself (e.g., politely refuse social invitations to eat, navigate increased social attention from others, negotiate time off at work for meals) may play a substantial role in postoperative weight loss and psychosocial adjustment. While assertiveness improvements did occur by six months after surgery, the lag found in these changes, as compared to the other psychological well-being variables, suggests that assertiveness may be a practiced skill that develops more gradually as patients “try out” their new self-image and adjust to subsequent changes in the reactions of others.

Despite the finding that surgical weight loss resulted in overall improvement in most areas of a patient’s life (self-esteem, body image, psychological symptomatology, assertiveness, parenting, work, family and friend relationships), mean scores of marital and sexual functioning remained unchanged. It is difficult to make theoretical sense of these findings given consistent reports of numerous and varied positive and tension-generating changes in these relationship domains (Bocchieri et al., 2002b). Of the available literature pertaining to marital adjustment following surgery, approximately half
of the available previous studies have reported overall improvements (Dubovsky et al., 1985; Isaacson et al., 1997; Rand et al., 1982), while the other half have reported increased marital conflict (Castelnuovo-Tedesco & Shiebel, 1976; Hafner, 1991; Marshall & Neill, 1977; Neill, Marshall & Yale, 1978; Solow, 1977). The only common ground found by all of these studies is that they all cite patients’ psychological gains in self-concept as the source of marital change, for better or for worse. Longer follow-up periods that extend beyond six-months may clearly help to elucidate our understanding of the impact of weight loss surgery on marital functioning. However, one year after surgery, Porter and Wampler (2000) also reported findings similar to the present study - that marital functioning, as measured by the Marital Adjustment Test (MAT), remained unchanged.

One interpretation of the lack of findings in marriage is that perhaps some underlying variable is determining the direction of change in marriages, resulting in a “wash out” effect. However, our prediction that “good” marriages would improve while “poor” marriages would deteriorate was not supported, at least not in the six months after surgery. Although presurgical levels of DAS did not appear to determine change in dyadic adjustment across time, presurgical expectations of marital improvement were related to improvements in marital adjustment – albeit in the opposite direction. Perhaps, as Marshall and Neill (1977) have suggested, weight loss surgery may not necessarily introduce conflict in marriages, but, at least for some patients, it may be an attempt to solve marital conflict for those in the most conflictual relationships.

Another possibility is that perhaps a combination of positive and tension-generating changes occurred within patients’ marital and sexual relationships and that the overall valence of these changes essentially balanced out. Hypothetically speaking, a patient who
experiences renewed energy and enthusiasm to engage in social activities with their spouse (a potential marital gain) may simultaneously experience a rise in their spouse’s level of jealousy (a potential marital decline). While the dynamics within the relationship are likely to be altered, the combined effect of such changes may result in the appearance of no quantitative change in the marriage. Similarly, within the domain of sexual functioning, a patient may experience improved sexual stamina and agility (a potential sexual functioning improvement), but simultaneously report feeling “less sexy” due to the aforementioned weight-loss related negative changes in appearance (a sexual functioning decline).

Another related interpretation for the lack of findings in marriage and sex is that the measures utilized may not have addressed weight-sensitive issues specific to obesity surgery patients. There are numerous marital and sexual issues that have been described by postoperative weight-loss surgery patients that are specifically related to morbid obesity and dramatic weight loss (Bocchieri et al., 2002b). One recurrent issue reported by postoperative married patients is a heightened sense of insecurity and jealousy on the part of the non-patient spouse (Bocchieri et al., 2002b; Marshall & Neill, 1977; Neill, Marshall & Yale, 1978). When this change occurs, it tends to be attributed to the patient becoming more confident and capable of asserting herself, and simultaneously engaging in more social activities, investing more time and energy into primping, and adorning herself with new, attractive and flattering attire. Such changes often result in an increased amount of positive attention from others. Adding to the spouse’s increased feelings of insecurity after surgery may be that the patient is no longer dependent on the spouse physically, emotionally, and financially. Issues such as being less dependent on one’s
partner, placing less importance on obtaining the approval of others, as well as the potential surfacing of feelings that one has “settled” for their partner, may all be relevant, weight-sensitive areas to include in weight-loss related marital adjustment measures targeted for this population (Bocchieri, 2001). Additionally, the aforementioned body image concerns specific to obesity surgery may be important to include in a measure of sexual functioning, as they are likely to impact sexual self-esteem in this population.

It is important to note that while changes were not found in sexual functioning across time, presurgical scores of Global Sexual Functioning (GSF) were surprisingly well within “normal” limits. In light of consistent reports of morbid-obesity having a negative impact on, at the very least, the mechanical aspect of sexual functioning (Bocchieri et al., 2002b; Rand et al., 1982), GSF scores for our sample of 36 morbidly obese women were actually slightly better (.45) than Creti et al.’s (1998) published norms for “women who were functioning well” (.49) and far below GSF scores of women with diagnosed sexual dysfunction (.68). “Normal” scores of sexual functioning for morbidly obese women in this study are consistent with the findings of Kinzl, et al. (2001) who reported lower rates of hyposexual desire within their sample of morbidly obese women than that reported in the general population of women. Such findings may represent a self-selection bias, as perhaps only those patients most comfortable with the topic of sexuality completed the Sexual History Form. It may also be that weight-sensitive aspects of sexuality, such as physical restrictions resulting in a limited sexual repertoire, are not included or elaborated in these measures. Similarly, mean DAS scores were well above the cutoff used to determine relationship stability and overall satisfaction (Stuart, 1992). So it appears that
the marital and sexual relationships for this sample of morbidly obese women were, for
the most part, functioning fairly well.

While relational changes were not detected using a standardized measure of marriage,
significant improvements were found, as assessed by the WRRAQ’s, in other important
relationships, such as those with children, friends, family and colleagues. Whether or not
this discrepancy can be attributed to actual differences in these different relationship
domains or to methodological confounds attributable to the different instruments utilized,
is unclear. Disorder-specific instruments have been shown to be more sensitive to issues
germane to weight-loss surgery patients compared to more generic measures that assess
similar constructs. Dymek et al. (2002) found that when two HRQL measures were
administered simultaneously, some HRQL changes were detected using the obesity-
specific Impact of Weight on Quality of Life questionnaire (Kolotkin, Head, Hamilton, &
Tse, 1995) that were not detected using a more broad HRQL instrument, the SF-36 (Ware

In any case, it was surprising to evidence such overwhelming improvements in the
areas of work, family, and friendships given the reports in the literature of the mix of
both positive and tension generating changes in these domains (Bocchieri, 2001). It was
also surprising to find that, contrary to our hypotheses, improvements in parenting, work,
family and friend relationships could not be explained by improvements in psychological
well-being. It may be that relationship gains are explained primarily by changes in
physical functioning and dramatic improvements in the ways in which the world responds
to the “new” person. The fact that improvements in psychological well-being did not
mediate improvements in these relationships emphasizes the power of the weight itself in
determining the interpersonal life of obese individuals.

Another potentially confounding methodological issue to consider that may help
explain the discrepancy between the marriage and other relationship findings is that the
pilot measures in the latter relationship domains assessed “groups” of relationships (e.g.,
“my friends…”) while the marriage questionnaire pertained to an individual relationship
(“my partner…”). In relationship domains that assess groups of individuals, perhaps
patients become more confident and assertive in their ability to “weed out” unhealthy or
dissatisfying relationships. At the same time, they may have renewed energy and
confidence to invest in more fulfilling relationships (or create new ones). This process
creates a fundamental difference in the assessment of the individual versus group
relationship domains. Specifically, this “weeding out” process is not feasible in one’s
marriage without resulting in separation or divorce. Perhaps the results would have
looked quite different had the pilot measures pertained more specifically to a particular
individual within the group relationship domains, such as “best friend” or “mother.”

Presurgical expectations of improvement in family, parenting, and work relationships
were not found to be related to relationship change. However, expectations of friendship
improvement corresponded to change in friendships in a positive, linear fashion. The
relationship domain of “friendships” is perhaps the most malleable and conducive to the
“weeding out” process described earlier. To the author’s knowledge, there are no studies
that have addressed patient expectations of relationship change following weight loss
surgery. However, presurgical expectations may play an integral role in the decision to
have surgery, as well as in patients’ postoperative satisfaction, psychosocial adjustment,
and weight-loss success. Postoperative motivation is important to maintain required behaviors (diet and exercise) consistent with continued weight-loss. If anticipated improvements do not materialize, patients’ motivation to adhere to the regimen and to lose weight may dissipate. The present findings suggest a need for future research efforts that explore patients’ presurgical expectations and their relationship to outcome. One limitation of our investigation of expectations was that only expectations of relational improvement were assessed, which may have biased responses. Future research may benefit from the inclusion of items designed to assess presurgical expectations of relational deterioration, as well as relational improvement.

There are numerous clinical applications of the findings in the present study. First, these findings may help clinicians to better prepare patients for surgery by assessing their expectations and educating patients about likely outcomes. Currently, the author and colleagues are in the process of validating a new instrument designed to assess various components of patient motivation for undergoing weight-loss surgery. Patients are asked to rate the extent to which 22 different goals are important to them on a scale from 0-5 ranging from “not at all important to me” and “extremely important to me.” The list of motivating factors was generated based on patient narratives from a previous qualitative study (Bocchieri et al, 2002b). Preliminary analyses of data from 50 preoperative weight loss surgery patients indicated that nearly three quarters cited “improve my romantic life” as “very important to me” or “extremely important to me.” Additionally, over half of the patients rated “improve my sexual functioning” as a goal that was “very important to me” or “extremely important to me.” Although this study is still in its early stages and findings have yet to be published, they suggest that marital and sexual gains, while not
necessarily the primary goal cited for pursuing surgery, are, at the very least, areas of concern for the majority of patients. These preliminary findings of presurgical expectations of marital and sexual gains are consistent with the authors’ clinical experience conducting psychosocial assessments and facilitating patient support groups. They are also consistent with some previous studies. Fifty-eight percent of patients in a study by Rand et al. (1984) and 17% of participants in a study by Kinzl et al. (2001) reported presurgical expectations of sexual improvement. The findings of the present study suggest that clinicians should caution those who anticipate surgical weight loss to be a panacea for marital and sexual problems, at least in the short term.

On a more positive note, these findings suggest that patients are likely to experience overall improvements in various aspects of psychological well-being, as well as improvements in friendships, parenting, work, and family relationships. A recent article encouraging the application of the Transtheoretical Theory of Change for use with obesity surgery patients, suggests that highlighting areas of potential improvement and emphasizing a “new lease on life” concept may play a beneficial role in motivating weight-loss surgery patients to change their behavior (Bond, Evans, DeMaria, Meador, Warren, et al., 2004). Although continued replication of our findings is warranted, the current suggestion is that clinicians may use the concept of potential of improvements in parenting, work, friend and family relationships as encouragement for behavioral change.

The findings from the present study may help clinicians to design appropriate supports and interventions for patients as they try to negotiate the barrage of personal and relational changes that occur following surgery. That patients experienced significant changes in parenting, work, family and friend relationships after surgery supports the
notion of systems theorists who posit that the symptom of morbid obesity maintains the system (and stability) of relationships (Fischmann-Havstad & Marston, 1984; Ganley, 1986; Hamilton & Zimmerman, 1985; Harkaway, 1983; Marshall & Neill, 1977; Sobal, Rauschenbach, & Frongillo, 1995). Conversely, it is not unreasonable to intuit that relationship dynamics prior to surgery contribute to the etiology and maintenance of morbid obesity. Low self-concept, poor assertiveness skills, and fear of rejection are all related to the common patient experience of putting others' needs before theirs, commonly referred to as the "caretaker" role. Successful weight loss requires that patients place greater emphasis on taking care of themselves. Drawing from the systems perspective, interventions and supports designed for morbidly obese patients who undergo surgery may benefit from a consideration of the patient and his/her weight loss in the greater context of their social world. This may include helping patients to identify, confront, and potentially correct maladaptive relationship patterns. Additionally, it is important that patients surround themselves with individuals who are supportive, encouraging, and have a genuine desire for the patient to lose weight and become more physically and psychological healthy. This may require terminating maladaptive relationships, particularly those that are not conducive to postoperative success. This fundamental paradigm shift from taking care of others to taking care of the self can be difficult for loved ones to adjust to. Clinicians should provide education, guidance, and support for patients' spouses, family members, and friends.

There are several limitations of the present study. First of all, of the 134 initial participants recruited, only 18 were male. Thus, males were excluded from the analyses. The present findings can only be generalized to women. It is entirely possible that the
experience of men is different, as obesity likely carries different consequences for men than it does for women in a culture with widely gender-differentiated contingencies regarding physical attractiveness. Second, the attrition rate was quite high. Of the 110 women who completed the preoperative protocol, only 62% (N = 68) completed the packet at the two subsequent follow-up periods. In addition to well-established challenges in follow-up within this particular population (Bocchieri et al., 2001), several additional factors contributed to this decline in participants. These factors include that, a) the study took place in a city with a highly transient population, b) the national reputation of the surgeon attracted a large number of patients who were not local, c) the follow-up time frames were situated within the overscheduled period of the Christmas and New Year’s holidays, d) the protocol was lengthy, and e) several of the measures were highly sensitive and personal in nature. Researchers in the area are cautioned to consider such factors likely to impact attrition when designing future studies. Participants who did not complete the battery at subsequent assessment times were younger and more likely to be non-Caucasian than those who participated at each of the assessment times. Other than age and ethnicity, there were no other differences found between the completers and non-completers on any demographic or standardized dependent measures. This leads to the third limitation of our study, which is that the sample includes a very small ethnic minority representation and thus caution is warranted in the application of these findings to non-Caucasian individuals. Additionally, the results of our investigation of sexual functioning cannot be generalized to homosexual patients as our analyses were limited to heterosexual women. Lastly, the findings of the present study should only be generalized to the immediate postoperative period of six months. Studies investigating longer term
outcomes of the impact of obesity surgery on relationships are definitely needed and may tell a different story.

Today, it is estimated that more than 5 percent of Americans are morbidly obese (Flegal, Carol, Ogden & Johnson, 2002) and this figure is mounting at an unprecedented rate. Currently, the only effective, long-term treatment for this debilitating disease is weight-loss surgery (National Institute of Health, 1991). The number of surgeries performed in the United States has nearly quadrupled in the past five years (Steinbrook, 2004). The findings of the current study help to elucidate the complex array of changes that occur in relationships, as weight-loss surgery patients attempt to navigate their way through this incomparable, life-altering process. As the number of individuals who undergo this drastic treatment approach continues to rise, it becomes increasingly critical that we come to recognize and appreciate the ways in which weight loss surgery impacts various aspects of individuals’ lives. Understanding the psychosocial outcomes associated with obesity surgery is critical to our understanding of surgical outcomes; for it may be that the culmination of psychosocial changes ultimately determines long-term patient success.
Table 1

Demographic Characteristics of Completed Participants (N = 68)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at preoperative assessment (M = 40.6 years, SD = 10.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>9</td>
<td>13.20</td>
</tr>
<tr>
<td>30-39</td>
<td>28</td>
<td>41.20</td>
</tr>
<tr>
<td>40-49</td>
<td>15</td>
<td>22.10</td>
</tr>
<tr>
<td>50-59</td>
<td>13</td>
<td>19.10</td>
</tr>
<tr>
<td>60-69</td>
<td>3</td>
<td>4.40</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
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<td>85.30</td>
</tr>
<tr>
<td>African-American</td>
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<td>2.90</td>
</tr>
<tr>
<td>Hispanic-American</td>
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<td>4.40</td>
</tr>
<tr>
<td>Other</td>
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<td>7.40</td>
</tr>
<tr>
<td>Highest Education Level Completed</td>
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<td></td>
</tr>
<tr>
<td>High school or less</td>
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<td>25.00</td>
</tr>
<tr>
<td>Some undergraduate college/vocational/technical school</td>
<td>35</td>
<td>51.50</td>
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<tr>
<td>Undergraduate</td>
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<td>13.20</td>
</tr>
<tr>
<td>Graduate</td>
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<td>10.30</td>
</tr>
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</table>

(continued)
Table 1 (continued)

*Demographic Characteristics of Completed Participants (N = 68)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>Unemployed and actively seeking</td>
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<td>1.50</td>
</tr>
<tr>
<td>Disabled or leave of absence</td>
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<td>2.90</td>
</tr>
<tr>
<td>Homemaker</td>
<td>5</td>
<td>7.40</td>
</tr>
<tr>
<td>Part-Time Employment</td>
<td>5</td>
<td>7.40</td>
</tr>
<tr>
<td>Full-Time Employment</td>
<td>43</td>
<td>63.20</td>
</tr>
<tr>
<td>Self-Employed/Other</td>
<td>12</td>
<td>17.60</td>
</tr>
<tr>
<td><strong>Relationship Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No partner/not dating</td>
<td>20</td>
<td>29.40</td>
</tr>
<tr>
<td>No partner/casual dating</td>
<td>5</td>
<td>7.40</td>
</tr>
<tr>
<td>Steady partner not cohabiting</td>
<td>2</td>
<td>2.90</td>
</tr>
<tr>
<td>Cohabiting with partner/spouse</td>
<td>41</td>
<td>60.30</td>
</tr>
<tr>
<td><strong>Surgery Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roux-n-Y Gastric Bypass</td>
<td>44</td>
<td>64.70</td>
</tr>
<tr>
<td>Lap-Band</td>
<td>24</td>
<td>35.30</td>
</tr>
</tbody>
</table>
Table 2

*Internal Consistency and Convergent Validity of Administered and Revised WRRAQ's*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Coefficient Alpha</th>
<th>Correlation with RAS</th>
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</thead>
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<tr>
<td></td>
<td></td>
<td>Administered</td>
<td>Revised</td>
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<td>.74</td>
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<tr>
<td>WRRAQ-Work</td>
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<td>.81</td>
<td>.85</td>
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<tr>
<td>WRRAQ-Family</td>
<td>103</td>
<td>.87</td>
<td>.89</td>
</tr>
<tr>
<td>WRRAQ-Friendship</td>
<td>104</td>
<td>.82</td>
<td>.84</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01

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Table 3

WRRAQ-Parenting: Summary of Item Loadings for Non-Orthogonally Rotated PCA  
(n=65)

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>.56</td>
<td>.07</td>
</tr>
<tr>
<td>2</td>
<td>-.04</td>
<td>.28</td>
</tr>
<tr>
<td>3</td>
<td>.09</td>
<td>.95</td>
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<td>-.06</td>
<td>-.02</td>
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<td>.06</td>
<td>.85</td>
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<td>6</td>
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<td>7</td>
<td>.55</td>
<td>.16</td>
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<td>8</td>
<td>.78</td>
<td>-.19</td>
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<tr>
<td>9</td>
<td>-.09</td>
<td>.21</td>
</tr>
<tr>
<td>10</td>
<td>.02</td>
<td>-.17</td>
</tr>
<tr>
<td>Eigenvalues</td>
<td>3.07</td>
<td>1.49</td>
</tr>
<tr>
<td>% of variance</td>
<td>30.72</td>
<td>14.92</td>
</tr>
</tbody>
</table>
Table 4

WRRAQ-Parenting: 10-Item PCA with One-Component Solution (n = 65)

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
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<td>4</td>
<td>.57</td>
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<tr>
<td>5</td>
<td>.61</td>
<td>.37</td>
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<tr>
<td>6</td>
<td>.71</td>
<td>.50</td>
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<td>7</td>
<td>.71</td>
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<td>8</td>
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<tr>
<td>9</td>
<td>.51</td>
<td>.26</td>
</tr>
<tr>
<td>10</td>
<td>.67</td>
<td>.45</td>
</tr>
</tbody>
</table>

Eigenvalue 3.07
% of variance 30.72
Table 5

*Revised WRRAQ-Parenting: 8-Item PCA with One-Component Solution (n = 65)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<td>3</td>
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<td>.30</td>
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<tr>
<td>4</td>
<td>.57</td>
<td>.33</td>
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<tr>
<td>5</td>
<td>.61</td>
<td>.37</td>
</tr>
<tr>
<td>6</td>
<td>.70</td>
<td>.49</td>
</tr>
<tr>
<td>7</td>
<td>.70</td>
<td>.49</td>
</tr>
<tr>
<td>9</td>
<td>.57</td>
<td>.33</td>
</tr>
<tr>
<td>10</td>
<td>.66</td>
<td>.44</td>
</tr>
</tbody>
</table>

Eigenvalue 2.9  

% of variance 36.47
Table 6

WRRAQ-Work: Summary of Item Loadings for Non-Orthogonally Rotated PCA (n=85)

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading 1</th>
<th>Component Loading 2</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.82</td>
<td>-.09</td>
<td>.71</td>
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<td>2</td>
<td>.74</td>
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<td>.56</td>
</tr>
<tr>
<td>3</td>
<td>.71</td>
<td>.02</td>
<td>.51</td>
</tr>
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<td>.47</td>
<td>-.44</td>
<td>.49</td>
</tr>
<tr>
<td>5</td>
<td>.26</td>
<td>.80</td>
<td>.64</td>
</tr>
<tr>
<td>6</td>
<td>.53</td>
<td>-.50</td>
<td>.62</td>
</tr>
<tr>
<td>7</td>
<td>.65</td>
<td>-.11</td>
<td>.46</td>
</tr>
<tr>
<td>8</td>
<td>.31</td>
<td>-.66</td>
<td>.61</td>
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<td>9</td>
<td>.71</td>
<td>.36</td>
<td>.54</td>
</tr>
<tr>
<td>10</td>
<td>.86</td>
<td>-.09</td>
<td>.72</td>
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</tbody>
</table>

Eigenvalues 4.34 1.51

% of variance 43.44 15.05
Table 7

WRRAQ-Work: 10-Item PCA with One-Component Solution (n=85)

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.84</td>
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<tr>
<td>2</td>
<td>.74</td>
<td>.54</td>
</tr>
<tr>
<td>3</td>
<td>.69</td>
<td>.48</td>
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<tr>
<td>4</td>
<td>.63</td>
<td>.39</td>
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<td>5</td>
<td>-.05</td>
<td>.03</td>
</tr>
<tr>
<td>6</td>
<td>.71</td>
<td>.50</td>
</tr>
<tr>
<td>7</td>
<td>.68</td>
<td>.46</td>
</tr>
<tr>
<td>8</td>
<td>.55</td>
<td>.31</td>
</tr>
<tr>
<td>9</td>
<td>.56</td>
<td>.31</td>
</tr>
<tr>
<td>10</td>
<td>.81</td>
<td>.65</td>
</tr>
</tbody>
</table>

Eigenvalue 4.34

% of variance 43.44
Table 8

Revised WRRAQ-Work: 9-Item PCA with One-Component Solution (n=85)

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.84</td>
<td>.70</td>
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<tr>
<td>2</td>
<td>.74</td>
<td>.55</td>
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<td>4</td>
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<td>6</td>
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<td>7</td>
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<td>9</td>
<td>.56</td>
<td>.31</td>
</tr>
<tr>
<td>10</td>
<td>.81</td>
<td>.65</td>
</tr>
</tbody>
</table>

Eigenvalue 4.34

% of variance 48.25
Table 9

**WWRAQ-Family of Origin: Summary of Item Loadings for Non-Orthogonally Rotated**

*PCA (n=103)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading 1</th>
<th>Component Loading 2</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.80</td>
<td>-.07</td>
<td>.64</td>
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<tr>
<td>2</td>
<td>.54</td>
<td>.35</td>
<td>.54</td>
</tr>
<tr>
<td>3</td>
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<tr>
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<td>.74</td>
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</table>

**Eigenvalues** 4.99 1.16

**% of variance** 49.88 11.58
Table 10

*WWRAQ-Family of Origin: 10-Item PCA with One-Component Solution (n=103)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
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<tr>
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<td>.73</td>
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</table>

**Eigenvalue** 4.98  
**% of variance** 49.88
Table 11

*Revised WWRAQ-Family of Origin: 8-Item PCA with One-Component Solution (n=103)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
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</thead>
<tbody>
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<td>.70</td>
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<tr>
<td>10</td>
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</tr>
</tbody>
</table>

Eigenvalue  4.72  
% of variance 59.04
Table 12

**WWRAQ-Friendship: Summary of Item Loadings for Non-Orthogonally Rotated PCA**

*(n=104)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>.83</td>
<td>-.07</td>
</tr>
<tr>
<td>2</td>
<td>.45</td>
<td>.49</td>
</tr>
<tr>
<td>3</td>
<td>.72</td>
<td>.16</td>
</tr>
<tr>
<td>4</td>
<td>.49</td>
<td>.13</td>
</tr>
<tr>
<td>5</td>
<td>.79</td>
<td>-.06</td>
</tr>
<tr>
<td>6</td>
<td>.60</td>
<td>.45</td>
</tr>
<tr>
<td>7</td>
<td>.73</td>
<td>-.28</td>
</tr>
<tr>
<td>8</td>
<td>-.06</td>
<td>.68</td>
</tr>
<tr>
<td>9</td>
<td>-.10</td>
<td>.79</td>
</tr>
<tr>
<td>10</td>
<td>.46</td>
<td>.62</td>
</tr>
</tbody>
</table>

Eigenvalues 4.19 1.48

% of variance 41.92 14.84
Table 13

**WWRAQ-Friendship: 10-Item PCA with One-Component Solution (n=104)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.72</td>
<td>.52</td>
</tr>
<tr>
<td>2</td>
<td>.71</td>
<td>.51</td>
</tr>
<tr>
<td>3</td>
<td>.76</td>
<td>.57</td>
</tr>
<tr>
<td>4</td>
<td>.53</td>
<td>.28</td>
</tr>
<tr>
<td>5</td>
<td>.68</td>
<td>.47</td>
</tr>
<tr>
<td>6</td>
<td>.82</td>
<td>.68</td>
</tr>
<tr>
<td>7</td>
<td>.50</td>
<td>.25</td>
</tr>
<tr>
<td>8</td>
<td>.36</td>
<td>.13</td>
</tr>
<tr>
<td>9</td>
<td>.40</td>
<td>.16</td>
</tr>
<tr>
<td>10</td>
<td>.80</td>
<td>.65</td>
</tr>
</tbody>
</table>

**Eigenvalue**: 4.19

**% of variance**: 41.92
<table>
<thead>
<tr>
<th>Item</th>
<th>Component Loading</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.75</td>
<td>.56</td>
</tr>
<tr>
<td>2</td>
<td>.70</td>
<td>.49</td>
</tr>
<tr>
<td>3</td>
<td>.77</td>
<td>.59</td>
</tr>
<tr>
<td>4</td>
<td>.54</td>
<td>.29</td>
</tr>
<tr>
<td>5</td>
<td>.71</td>
<td>.51</td>
</tr>
<tr>
<td>6</td>
<td>.82</td>
<td>.67</td>
</tr>
<tr>
<td>7</td>
<td>.54</td>
<td>.29</td>
</tr>
<tr>
<td>10</td>
<td>.77</td>
<td>.59</td>
</tr>
</tbody>
</table>

Eigenvalue: 3.99

% of variance: 49.83
Table 15

*Mean Scores and Standard Deviations for Weight in Pounds, BMI, and Percent Excess BMI Lost (PEBMIL) at Each Assessment Time (n = 68)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Weight</td>
<td>284.15&lt;sup&gt;a&lt;/sup&gt;</td>
<td>46.98</td>
<td>233.94&lt;sup&gt;a&lt;/sup&gt;</td>
<td>41.02</td>
<td>211.34&lt;sup&gt;a&lt;/sup&gt;</td>
<td>40.77</td>
</tr>
<tr>
<td>BMI</td>
<td>47.34&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6.32</td>
<td>38.57&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.89</td>
<td>35.54&lt;sup&gt;a&lt;/sup&gt;</td>
<td>6.13</td>
</tr>
<tr>
<td>PEBMIL</td>
<td>0.00&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.00</td>
<td>40.19&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14.22</td>
<td>54.89&lt;sup&gt;a&lt;/sup&gt;</td>
<td>18.22</td>
</tr>
</tbody>
</table>

*Note.* Means in a row sharing subscripts are significantly different.
Table 16

One-Way Repeated Measures Analysis of Variance for Weight in Pounds, BMI, and Percent Excess BMI Lost (n = 68)

<table>
<thead>
<tr>
<th>Variable and Source</th>
<th>SS</th>
<th>MS</th>
<th>F(2, 134)</th>
<th>(\eta_p^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Weight in Pounds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>188873.36</td>
<td>160092.29</td>
<td>506.28***</td>
<td>.91</td>
</tr>
<tr>
<td>Within groups</td>
<td>24995.30</td>
<td>316.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BMI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>5102.24</td>
<td>2787.88</td>
<td>347.26***</td>
<td>.90</td>
</tr>
<tr>
<td>Within groups</td>
<td>984.43</td>
<td>8.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Percent Excess BMI Lost</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>10.98</td>
<td>6.55</td>
<td>472.90***</td>
<td>.91</td>
</tr>
<tr>
<td>Within groups</td>
<td>1.56</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***\(p < .001\)
Table 17

Mean Scores and Standard Deviations for Measures of Psychological Well-Being at each Assessment Time (n = 58)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>RSE</td>
<td>21.67a</td>
<td>5.04</td>
<td>17.66a</td>
<td>4.85</td>
<td>16.33a</td>
<td>4.96</td>
</tr>
<tr>
<td>(Range = 10 - 40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>35.85a</td>
<td>6.26</td>
<td>31.09a</td>
<td>6.95</td>
<td>28.95a</td>
<td>6.97</td>
</tr>
<tr>
<td>(Range = 15 - 75)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSI</td>
<td>0.74a</td>
<td>0.47</td>
<td>0.47a</td>
<td>0.38</td>
<td>0.35a</td>
<td>0.32</td>
</tr>
<tr>
<td>(Range = 0-4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAS</td>
<td>4.26a</td>
<td>28.32</td>
<td>8.62b</td>
<td>26.65</td>
<td>16.40ab</td>
<td>23.37</td>
</tr>
<tr>
<td>(Range = -90 - 90)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Means in a row sharing subscripts are significantly different. For RSE, BI and GSI higher scores indicate higher impairment. RSE = Rosenberg Self-Esteem Scale, BI = Body Image subscale, GSI = Global Severity Index of the Brief Symptom Inventory, RAS = Rathus Assertiveness Scale.
Table 18

*Intercorrelations between Measures of Psychological Well-Being at Time 1*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Self-Esteem Impairment (RSE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Assertiveness (RAS)</td>
<td>-.53**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n = 67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Psychological Symptomatology (GSI)</td>
<td>.47**</td>
<td>-.29*</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 65)</td>
<td>(n = 65)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Body Image Impairment (BI)</td>
<td>.52**</td>
<td>-.44**</td>
<td>.26*</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(n = 63)</td>
<td>(n = 63)</td>
<td>(n = 62)</td>
<td></td>
</tr>
</tbody>
</table>

**p < .01. *p < .05.**
Table 19

*Multivariate Repeated Measures Analyses of Variance, Univariate Analyses and Effect Sizes for Effects of Assessment Time on Psychological Well-Being (n = 58)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>MANOVA $F (8, 224)$</th>
<th>RSE $F (2, 114)$</th>
<th>RAS $F (2, 114)$</th>
<th>GSI $F (2, 114)$</th>
<th>BI $F (2, 114)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>15.80***</td>
<td>44.21***</td>
<td>13.91***</td>
<td>41.80***</td>
<td>38.78***</td>
</tr>
<tr>
<td>MSE</td>
<td>11.50</td>
<td>175.12</td>
<td>0.07</td>
<td>18.64</td>
<td></td>
</tr>
<tr>
<td>$\eta^2_p$</td>
<td>0.72</td>
<td>0.44</td>
<td>0.20</td>
<td>0.42</td>
<td>0.41</td>
</tr>
</tbody>
</table>

*Note.* Multivariate $F$ ratios were generated from Pillai’s statistic. RSE = Rosenberg Self-Esteem Scale, RAS = Rathus Assertiveness Scale, GSI = Global Severity Index of the Brief Symptom Inventory, BI = Body Image subscale.

***$p < .001$.**
Table 20

*Mean Scores and Standard Deviations for Global Sexual Functioning and Dyadic Adjustment Scores at each Assessment Time*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>GSF(^a)</td>
<td>0.45</td>
<td>0.11</td>
<td>0.44</td>
<td>0.11</td>
<td>0.45</td>
<td>0.11</td>
</tr>
<tr>
<td>(Range = 0-1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAS(^b)</td>
<td>108.42</td>
<td>14.61</td>
<td>111.06</td>
<td>10.89</td>
<td>109.61</td>
<td>16.96</td>
</tr>
<tr>
<td>(Range = 0 – 151)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a n = 36. \(^b n = 33.\)
Table 21

*One-Way Repeated Measures Analysis of Variance Summary for Effects of Assessment Time on Global Sexual Functioning (GSF) and Dyadic Adjustment Scale (DAS)*

<table>
<thead>
<tr>
<th>Variable and Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GSF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.53</td>
<td>0.04</td>
</tr>
<tr>
<td>Within Groups</td>
<td>70</td>
<td>0.13</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DAS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>115.09</td>
<td>57.55</td>
<td>0.79</td>
<td>0.04</td>
</tr>
<tr>
<td>Within Groups</td>
<td>64</td>
<td>4668.91</td>
<td>72.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Table 22

Two-Way Repeated Measures Analysis of Variance Summary and Effect Sizes for Effects of Assessment Time and Dyadic Adjustment Group (Low/High) on Dyadic Adjustment Change at Time 3 (N = 33)

<table>
<thead>
<tr>
<th>Variable and Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Time</td>
<td>2</td>
<td>0.057</td>
<td>0.037</td>
<td>2.76$^a$</td>
<td>0.08</td>
</tr>
<tr>
<td>DAS Group</td>
<td>1</td>
<td>0.041</td>
<td>0.041</td>
<td>1.30$^b$</td>
<td>0.04</td>
</tr>
<tr>
<td>Time x Dyadic Group</td>
<td>2</td>
<td>0.058</td>
<td>0.037</td>
<td>2.79$^c$</td>
<td>0.08</td>
</tr>
<tr>
<td>Within Cells</td>
<td>62</td>
<td>0.643</td>
<td>0.013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>67</td>
<td>0.799</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. The small values for SS and MS are a result of using ratio scores.

$^a p = .09$, $^b p = .26$, $^c p = .08$. 

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Table 23

Mean Scores and Standard Deviations of Revised WRRAQ’s at each Assessment Time

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>WRRAQ-Parenting</td>
<td>31</td>
<td>43.61&lt;sup&gt;a&lt;/sup&gt;</td>
<td>12.08</td>
<td>55.16&lt;sup&gt;a&lt;/sup&gt;</td>
<td>10.49</td>
<td>64.10&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Range = (10-80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRAQ-Work</td>
<td>40</td>
<td>61.28&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>15.83</td>
<td>70.65&lt;sup&gt;a&lt;/sup&gt;</td>
<td>11.12</td>
<td>71.80&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Range = (10-90)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRAQ-Family</td>
<td>63</td>
<td>58.73&lt;sup&gt;a&lt;/sup&gt;</td>
<td>15.79</td>
<td>65.83&lt;sup&gt;a&lt;/sup&gt;</td>
<td>11.82</td>
<td>68.98&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Range = (10-80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRRAQ-Friendship</td>
<td>64</td>
<td>59.27&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>13.83</td>
<td>63.94&lt;sup&gt;a&lt;/sup&gt;</td>
<td>10.94</td>
<td>66.36&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Range = (10-80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>Note.</sup> Means in a row sharing subscripts are significantly different. For all measures, higher scores indicate greater relationship adjustment.
Table 24

*One-Way Repeated Measures Analyses of Variance Summary and Effect Sizes for Effects of Assessment Time on WWRAQ’s*

<table>
<thead>
<tr>
<th>Variable and Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>( \eta_p^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenting-WRRAQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>6538.90</td>
<td>3269.45</td>
<td>48.32***</td>
<td>.62</td>
</tr>
<tr>
<td>Within groups</td>
<td>60</td>
<td>4059.76</td>
<td>67.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-WRRAQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>2666.52</td>
<td>1785.46</td>
<td>14.72***</td>
<td>.27</td>
</tr>
<tr>
<td>Within groups</td>
<td>78</td>
<td>7062.82</td>
<td>121.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family-WRRAQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>3474.74</td>
<td>2029.01</td>
<td>23.74***</td>
<td>.28</td>
</tr>
<tr>
<td>Within groups</td>
<td>124</td>
<td>9074.59</td>
<td>85.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendship-WRRAQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>1664.28</td>
<td>832.14</td>
<td>15.39***</td>
<td>.20</td>
</tr>
<tr>
<td>Within groups</td>
<td>126</td>
<td>6811.05</td>
<td>54.06</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***\( p < .001 \).
Table 25

Means, Standard Deviations, and Intercorrelations of Ratio Scores for Revised WRRAQ-Work and Psychological Well-Being (n = 39)

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 WRRAQ-Work</td>
<td>1.26</td>
<td>.43</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 RSE</td>
<td>1.24</td>
<td>.22</td>
<td>.32*</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 BI</td>
<td>1.14</td>
<td>.13</td>
<td>.16</td>
<td>.33*</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>4 GSI</td>
<td>1.04</td>
<td>.07</td>
<td>.07</td>
<td>-.01</td>
<td>-.08</td>
<td>--</td>
</tr>
<tr>
<td>5 RAS</td>
<td>1.28</td>
<td>.53</td>
<td>.04</td>
<td>.50**</td>
<td>.15</td>
<td>-.02</td>
</tr>
</tbody>
</table>

Note. Means and standard deviations reflect ratio score. Ratio scores reflect the percentage of change from Time 3 to Time 1. A ratio score greater than 1 indicates an improvement, while a ratio score less than 1 indicates a decline.

*p < .05. **p < .01.
Table 26

Means, Standard Deviations, and Intercorrelations of Ratio Scores for Revised WRRAQ-Family of Origin and Psychological Well-Being (n = 58)

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRRAQ-Family of Origin</td>
<td>1.32</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RSE</td>
<td>1.22</td>
<td>.22</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>1.14</td>
<td>.14</td>
<td>.21</td>
<td>.33*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSI</td>
<td>1.04</td>
<td>.07</td>
<td>-.10</td>
<td>.07</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>RAS</td>
<td>1.25</td>
<td>.48</td>
<td>.28*</td>
<td>.47***</td>
<td>.25*</td>
<td>-.04</td>
</tr>
</tbody>
</table>

Note. Means and standard deviations reflect ratio score. Ratio scores reflect the percentage of change from Time 3 to Time 1. A ratio score greater than 1 indicates an improvement, while a ratio score less than 1 indicates a decline.

*p < .05. **p < .01. ***p < .001.
Table 27

Means, Standard Deviations, and Intercorrelations of Ratio Scores for Revised WRRAQ-Friendship and Psychological Well-Being (n = 58)

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 WRRAQ-Friendship</td>
<td>1.17</td>
<td>.29</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 RSE</td>
<td>1.21</td>
<td>.22</td>
<td>.36**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 BI</td>
<td>1.13</td>
<td>.14</td>
<td>.27*</td>
<td>.32*</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>4 GSI</td>
<td>1.04</td>
<td>.08</td>
<td>.13</td>
<td>.08</td>
<td>.10</td>
<td>--</td>
</tr>
<tr>
<td>5 RAS</td>
<td>1.24</td>
<td>.48</td>
<td>.41**</td>
<td>.47***</td>
<td>.25*</td>
<td>-.03</td>
</tr>
</tbody>
</table>

Note. Means and standard deviations reflect ratio score. Ratio scores reflect the percentage of change from Time 3 to Time 1. A ratio score greater than 1 indicates an improvement, while a ratio score less than 1 indicates a decline.

*p < .05. **p < .01. ***p < .001.
Table 28

*Regression Analysis Summary for Psychological Well-Being Predicting Change in Revised WRRAQ-Work*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSE</td>
<td>.73</td>
<td>.38</td>
<td>.38</td>
</tr>
<tr>
<td>BI</td>
<td>.23</td>
<td>.58</td>
<td>.07</td>
</tr>
<tr>
<td>GSI</td>
<td>.43</td>
<td>.96</td>
<td>.07</td>
</tr>
<tr>
<td>RAS</td>
<td>-.13</td>
<td>.15</td>
<td>-.16</td>
</tr>
</tbody>
</table>

*Note. Adjusted $R^2 = .04$ (n = 39), $p = .30$.***
Table 29

*Regression Analysis Summary for Psychological Well-Being Predicting Change in Revised WRRAQ-Family of Origin*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SEB$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$RSE$</td>
<td>.12</td>
<td>.50</td>
<td>.04</td>
</tr>
<tr>
<td>$BI$</td>
<td>.79</td>
<td>.74</td>
<td>.15</td>
</tr>
<tr>
<td>$GSI$</td>
<td>-.99</td>
<td>1.27</td>
<td>-.10</td>
</tr>
<tr>
<td>$RAS$</td>
<td>.33</td>
<td>.22</td>
<td>.22</td>
</tr>
</tbody>
</table>

*Note. Adjusted $R^2 = .04$ (n = 58), $p = .19$.***
Table 30

*Regression Analysis Summary for Psychological Well-Being Predicting Change in Revised WRRAQ- Friendship*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSE</td>
<td>.22</td>
<td>.55</td>
<td>.17</td>
</tr>
<tr>
<td>BI</td>
<td>.29</td>
<td>.19</td>
<td>.13</td>
</tr>
<tr>
<td>GSI</td>
<td>.43</td>
<td>.47</td>
<td>.11</td>
</tr>
<tr>
<td>RAS</td>
<td>.19</td>
<td>.08</td>
<td>.31*</td>
</tr>
</tbody>
</table>

*Note. Adjusted R² = .18 (n = 58), p < .01*

*p < .01.*
Table 31

Means and Standard Deviations of Expectation of Relationship Improvement Index at Time 1

<table>
<thead>
<tr>
<th>Expectation of Relationship Improvement Index</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Relationships</td>
<td>73</td>
<td>18.77</td>
<td>15.99</td>
</tr>
<tr>
<td>Sexual Relationships</td>
<td>104</td>
<td>28.26</td>
<td>16.85</td>
</tr>
<tr>
<td>Parent-Child Relationships</td>
<td>81</td>
<td>30.93</td>
<td>19.86</td>
</tr>
<tr>
<td>Coworkers</td>
<td>94</td>
<td>13.72</td>
<td>15.87</td>
</tr>
<tr>
<td>Family of Origin Relationships</td>
<td>107</td>
<td>13.11</td>
<td>14.77</td>
</tr>
<tr>
<td>Friendship</td>
<td>107</td>
<td>13.11</td>
<td>16.08</td>
</tr>
</tbody>
</table>
Table 32

*Correlations between Expectation of Relationship Improvement Index at Time 1 and Relationship Change*

<table>
<thead>
<tr>
<th>Relationship Type</th>
<th>N</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Relationships</td>
<td>35</td>
<td>-.34*</td>
</tr>
<tr>
<td>Sexual Relationships</td>
<td>39</td>
<td>.07</td>
</tr>
<tr>
<td>Parent-Child Relationships</td>
<td>35</td>
<td>.26</td>
</tr>
<tr>
<td>Coworkers</td>
<td>49</td>
<td>.13</td>
</tr>
<tr>
<td>Family of Origin Relationships</td>
<td>70</td>
<td>.09</td>
</tr>
<tr>
<td>Friendship</td>
<td>71</td>
<td>.35**</td>
</tr>
</tbody>
</table>

*Note.* The correlation column represents the correlation between the Expectation of Relationship Improvement Index and the ratio score for the associated dependent variable. (Dyadic Adjustment Scale, Global Sexual Functioning Score of Sexual History Form, and the WWRAQ’s for Parenting, Coworkers, Family of Origin, and Friendships). Ratio scores represent Time 3 scores divided by Time 1 scores.

*p < .05, **p < .01.*
APPENDIX I

INFORMED CONSENT

General Information

I am Lindsey Bocchieri, a doctoral student at the University of Nevada, Las Vegas in the department of Clinical Psychology working under the supervision of Dr. Marta Meana. You are invited to participate in a research study investigating the ways, if any, in which relationships change following obesity surgery. The study will continue for three-years.

Procedure

If you volunteer to participate in this study, you will be asked to do the following: Prior to surgery, you will first be asked to provide valuable contact information. This first step is crucial to ensuring that we remain in contact with you throughout the duration of this study. You will then be asked, to participate in a short interview with the primary researcher to obtain pertinent demographic information. Lastly, you will be asked to complete a packet of questionnaires concerning various aspects of your relationships with others, sexuality, mood, feelings about yourself, and overall quality of life. It will take approximately one hour to complete the interview and questionnaires. By signing this consent you are agreeing to volunteer your continued participation for the duration of this study, which will span three years. You will be contacted by the researcher via telephone to schedule follow-up assessments at five additional time periods following surgery: three months, six months, one year, two years, and three years. Total participation time over the three-year span will be approximately six hours. The primary researcher will make every effort to accommodate your schedule by arranging the research appointments so that they coordinate with follow-up doctor visits.

Benefits of Participation

There are no direct benefits to you for participating in this study. However, the information that you provide will help obesity surgery professionals to understand the complex ways in which obesity surgery impacts patient relationships. This information may help to better prepare patients to cope effectively with potential life changes and maximize the likelihood of patient success and adjustment.
Risks of Participation

There are unlikely to be any risks associated with your participation in this study. However, you may experience some discomfort while answering certain questions due to the personal nature of the subject matter. In the event that something in the questionnaires causes you concern, you are encouraged to discuss this with the primary researcher who will explain the question in further detail, or simply move on to the next question if you choose to do so. You are also encouraged to contact Dr. Marta Meana (895-0184) who will be available to discuss such matters with you confidentially. Dr. Meana is a licensed clinical psychologist specializing in health and sexuality.

Contact Information

If you have any questions about the study or if you experience harmful effects as a result of participation in this study, you may contact Dr. Marta Meana at 895-0184.

For questions regarding the rights of research subjects, you may contact the UNLV Office for the Protection of Research Subjects at 895-2794.

Voluntary Participation

Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study at any time during the duration of the study. You may withdraw at any time without prejudice to your relations with UNLV or UMC. You are encouraged to ask questions about this study at prior to and during the research study.

Confidentiality

All information gathered in this study will remain completely confidential. Your completed interview and questionnaires will be identified by code numbers only. No reference will be made in written or oral materials that could link you or your identifying information to this study. All records will be stored in a locked facility for at least three years after completion of the study at which point they will be destroyed. In any scientific publication that may arise out of this study, your anonymity is guaranteed. Your continued treatment with Dr. Fisher will in no way be affected by your decision as to whether or not to participate in this study.

Participant Consent

I have read the above information and agree to volunteer my continued participation in this study. I am at least 18 years of age. A copy of this form has been given to me.

____________________________  ____________________
Signature of Participant        Date

Participant Name (Please Print Clearly)
APPENDIX II

STRUCTURED INTERVIEW

1. Gender  Female ___  Male ___

2. What racial/ethnic group do you most identify with?
   ___ Caucasian  ___ Asian American
   ___ African American  ___ Native American
   ___ Hispanic American  ___ Other ___

3. What is your highest year of education completed? ________________

4. What is your date of surgery? __________

5. Which surgical procedure will you undergo?
   ___ Gastric bypass  ___ Lap-Band

6. What stage are you at in your surgical process?
   ___ Pre-op  ___ One-year
   ___ Three months  ___ Two years
   ___ Six months  ___ Three years

7. If you already had surgery, did you experience any major post-surgical complications?
   ___ No  ___ Yes (please explain)

8. How old are you? ___

9. What is/was your preoperative weight? ___

10. What is/was your preoperative height? ___

11. What is/was your preoperative BMI? ___

12. What is your current weight? ___

13. What is your current height? ___
14. What is your current BMI? _____

15. At what age do you consider yourself to have become obese? _____

16. Which of the following best describes your current situation with regards to romantic relationships?
   ___ I do not have a steady partner and I am not casually dating right now
   ___ I do not have a steady partner and I am casually dating right now
   ___ I have a steady partner that I do not live with
   ___ I currently live with my partner/spouse

17. How long have you been in the situation described above? _____

18. How many children, if any, do you have? _____

19. If single (not married, cohabitating, or in a committed relationship), how many dates have you gone on in the last month? _____

20. Please indicate your current employment situation:
   ___ unemployed
   a) actively seeking employment
   b) disabled or on leave of absence because of physical restrictions
   c) homemaker
   ___ employed
   a) part-time
   b) full-time
   c) self-employed
   ___ other

21. If employed, please indicate your current job position/title______________________.

22. How long have you been in your current employment situation? _______________.

23. Taking into consideration all relationships (work, family, etc.) how many friendships do you have that you would consider to be “close” friendships? ____________________.

24. Do you consider yourself to have ever been sexually abused or assaulted? _______.

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APPENDIX III

STANDARDIZED MEASURES OF
PSYCHOLOGICAL WELL-BEING

Rosenberg Self-Esteem Scale
Below is a list of statements dealing with your general feelings about yourself. If you **STRONGLY AGREE**, circle **SA**. If you **AGREE** with the statement, circle **A**. If you **DISAGREE**, circle **D**. If you **STRONGLY DISAGREE** circle **SD**.

<table>
<thead>
<tr>
<th></th>
<th>1 STRONGLY AGREE</th>
<th>2 AGREE</th>
<th>3 DISAGREE</th>
<th>4 STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I feel that I'm a person of worth, at least on an equal plane with others.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>2</td>
<td>I feel that I have a number of good qualities.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>3</td>
<td>All in all, I am inclined to feel that I am a failure.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>4</td>
<td>I am able to do things as well as most other people.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>5</td>
<td>I feel I do not have much to be proud of.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>6</td>
<td>I take a positive attitude toward myself.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>7</td>
<td>On the whole, I am satisfied with myself.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------</td>
<td>----</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8</td>
<td>I wish I could have more respect for myself.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>9</td>
<td>I certainly feel useless at times.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
<tr>
<td>10</td>
<td>At times I think I am no good at all.</td>
<td>SA</td>
<td>A</td>
<td>D</td>
</tr>
</tbody>
</table>
# Body Image Subscale of the DSFI

Below are some statements concerning how you view your body. Please indicate to what degree each of the following statements is true of you by circling the number that best describes your experience. Note that Part A is for both sexes, Part B is for men only, and Part C is for women only.

<table>
<thead>
<tr>
<th>PART A (BOTH SEXES)</th>
<th>NOT AT ALL</th>
<th>SLIGHTLY</th>
<th>MODERATELY</th>
<th>QUITE A BIT</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am less attractive than I would like to be.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I am too fat.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I enjoy being seen in a bathing suit.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I am too thin.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I would be embarrassed to be seen nude by a lover.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I am too short.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. There are parts of my body I don't like at all.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I am too tall.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I have too much body hair.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. My face is attractive.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART B (MEN ONLY)</th>
<th>NOT AT ALL</th>
<th>SLIGHTLY</th>
<th>MODERATELY</th>
<th>QUITE A BIT</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. I have a well-proportioned body.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I am satisfied with the size of my penis.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Women would find my body attractive.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I am well-coordinated and athletic.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I am pleased with the physical condition of my body.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART C (WOMEN ONLY)</th>
<th>NOT AT ALL</th>
<th>SLIGHTLY</th>
<th>MODERATELY</th>
<th>QUITE A BIT</th>
<th>EXTREMELY</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. I have a shapely and well-proportioned body.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I have attractive breasts.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Men would find my body attractive.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. I have attractive legs.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I am pleased with the way my vagina looks.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

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**Brief Symptom Inventory (BSI)**

Below is a list of problems and complaints that people sometimes have. Please read each one carefully and circle the number to the right that best describes *how much that problem has distressed or bothered you in the past two weeks including today*. **Circle only one number for each problem and do not skip any items.**

<table>
<thead>
<tr>
<th>HOW MUCH WERE YOU BOTHERED BY:</th>
<th>not at all</th>
<th>slightly</th>
<th>moderately</th>
<th>quite a bit</th>
<th>extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. NERVOUSNESS OR SHAKINESS INSIDE</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>2. FAINTNESS OR DIZZINESS</td>
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Rathus Assertiveness Scale

Directions: Indicate how characteristic or descriptive each of the following statements is of you by using the code given below.

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<th>Rather uncharacteristic of me, quite nondescriptive</th>
<th>Somewhat uncharacteristic of me, slightly nondescriptive</th>
<th>Somewhat characteristic of me, slightly descriptive</th>
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</table>

1. Most people seem to be more aggressive and assertive than I am.  
2. I have hesitated to make or accept dates because of “shyness.”  
3. When the food served at a restaurant is not done to my satisfaction, I complain about it to the waiter or waitress.  
4. I am careful to avoid hurting other people’s feelings, even when I feel that I have been injured.  
5. If a salesman has gone to considerable trouble to show me merchandise which is not quite suitable, I have a difficult time in saying “No.”  
6. When I am asked to do something, I insist upon knowing why.  
7. There are times when I look for a good, vigorous argument.  
8. I strive to get ahead as well as most people in my position.  
9. To be honest, people often take advantage of me.  
10. I enjoy starting conversations with new acquaintances and strangers.  
11. I often don’t know what to say to attractive persons of the opposite sex.  
12. I will hesitate to make phone calls to business establishments and institutions.  
13. I would rather apply for a job or for admission to a college by writing letters than by going through with personal interviews.  
14. I find it embarrassing to return merchandise.
APPENDIX IV

STANDARDIZED MEASURES OF SEXUAL
AND RELATIONSHIP ADJUSTMENT

Sexual History Form

Please circle the most appropriate response to each question.

1. How frequently do you and your mate have sexual intercourse or activity?
   1) More than once a day  
   2) Once a day  
   3) 3 or 4 times a week  
   4) Twice a week  
   5) Once a week  
   6) Once every 2 weeks  
   7) Once a month  
   8) Less than once a month  
   9) Not at all

2. How frequently would you like to have sexual intercourse or activity?
   1) More than once a day  
   2) Once a day  
   3) 3 or 4 times a week  
   4) Twice a week  
   5) Once a week  
   6) Once every 2 weeks  
   7) Once a month  
   8) Less than once a month  
   9) Not at all

3. Who usually initiates sexual intercourse or activity?
   1) I always do  
   2) I usually do  
   3) My mate and I initiate about equally often  
   4) My mate usually does  
   5) My mate always does

4. Who would you ideally like to initiate sexual intercourse or activity?
   1) Myself, always  
   2) Myself, usually  
   3) My mate and I equally often  
   4) My mate, usually  
   5) My mate always

5. When your mate makes sexual advances, how do you usually respond?
   1) I usually accept with pleasure  
   2) Accept reluctantly  
   3) Often refuse  
   4) Usually refuse

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6. How often do you experience sexual desire (this may include wanting to have sex, planning to have sex, feeling frustrated due to lack of sex, etc.)?
   1) More than once a day  
   2) Once a day  
   3) 3 or 4 times a week  
   4) Twice a week  
   5) Once a week  
   6) Once every two weeks  
   7) Once a month  
   8) Less than once a month  
   9) Not at all

7. How often do you masturbate (bring yourself to orgasm in private)?
   1) More than once a day  
   2) Once a day  
   3) 3 or 4 times a week  
   4) Twice a week  
   5) Once a week  
   6) Once every 2 weeks  
   7) Once a month  
   8) Less than once a month  
   9) Not at all

8. For how long do you and your mate usually engage in sexual foreplay (kissing, petting, etc.) before having intercourse?
   1) Less than 1 minute  
   2) 1 to 3 minutes  
   3) 4 to 6 minutes  
   4) 7 to 10 minutes  
   5) 11 to 15 minutes  
   6) 16 to 30 minutes  
   7) 30 minutes to one hour

9. How long does intercourse usually last, from entry of the penis to the male’s orgasm climax?
   1) Less than 1 minute  
   2) 1 to 2 minutes  
   3) 2 to 4 minutes  
   4) 4 to 7 minutes  
   5) 7 to 10 minutes  
   6) 11 to 15 minutes  
   7) 15 to 20 minutes  
   8) 20 to 30 minutes  
   9) More than 30 minutes

10. Does the male ever reach orgasm while he is trying to enter the vagina with his penis?
    1) Never  
    2) Rarely (less than 10% of the time)  
    3) Seldom (less than 25% of the time)  
    4) Sometimes (50% of the time)  
    5) Usually (75% of the time)  
    6) Nearly always (over 90% of the time)

11. Do you feel that premature ejaculation (rapid climax) is a problem in your sexual relationship?
    1) Yes  
    2) No

12. How satisfied are you with the variety of sexual activities in your current sex life?  
    (This includes the different types of kissing and caressing with a partner, different positions for intercourse, etc.)
    1) Extremely satisfied  
    2) Moderately satisfied  
    3) Slightly satisfied  
    4) Slightly unsatisfied  
    5) Moderately unsatisfied  
    6) Extremely unsatisfied
13. Would you like your lovemaking to include more:
   - Breast Caressing 1) Yes 2) No
   - Hand caressing of your genital area 1) Yes 2) No
   - Oral caressing (kissing) of your genital area 1) Yes 2) No
   - Different positions for intercourse 1) Yes 2) No

14. If you would like a certain kind of sexual caress or activity, which way do you typically let your partner know?
   1) I wait to see if my partner will do what I like without my asking
   2) I show my partner what I would like by moving their hand or changing my own position
   3) I tell my partner exactly what I would like

15. How have you typically learned about your partner’s sexual likes and dislikes?
   1) From my partner telling me exactly what they want
   2) From my partner moving my hand or changing their position to signal what they would like me to do
   3) From watching my partner’s reactions during sex
   4) From intuition

16. When you have sex with your mate do you feel sexually aroused (e.g., feeling “turned on,” pleasure, excitement)?
   1) Nearly always (over 90% of the time) 4) Seldom (about 25% of the time)
   2) Usually (about 75% of the time) 5) Never
   3) Sometimes (about 50% of the time)

17. When you have sex with your mate, do you have negative emotional reactions (e.g., fear, disgust, shame, or guilt)?
   1) Never 4) Sometimes (50% of the time)
   2) Rarely (less than 10% of the time) 5) Usually (75% of the time)
   3) Seldom (less than 25% of the time) 6) Nearly always (over 90% of the time)

18. Does the male have any trouble getting an erection before intercourse begins?
   1) Never 4) Sometimes (50% of the time)
   2) Rarely (less than 10% of the time) 5) Usually (75% of the time)
   3) Seldom (less than 25% of the time) 6) Nearly always (over 90% of the time)

19. Does the male have any trouble keeping an erection once intercourse has begun?
   1) Never 4) Sometimes (50% of the time)
   2) Rarely (less than 10% of the time) 5) Usually (75% of the time)
   3) Seldom (less than 25% of the time) 6) Nearly always (over 90% of the time)
20. If the male loses an erection, when does that usually happen?
   1) Before penetrating to start intercourse
   2) While trying to penetrate
   3) After penetration, during the thrusting of intercourse
   4) Not applicable, losing erections is not a problem

21. What is the male's *typical* degree of erection during sexual activity?
   1) 0% to 20% of a full erection
   2) 20% to 40% of a full erection
   3) 40% to 60% of a full erection
   4) 60% to 80% of a full erection
   5) 80% to 100% of a full erection

22. Does the male ejaculate (climax) without having a full, hard erection?
   1) Never
   2) Rarely (less than 10% of the time)
   3) Seldom (less than 2.5% of the time)
   4) Sometimes (50% of the time)
   5) Usually (75% of the time)
   6) Nearly always (over 90% of the time)

23. If you try is it possible to reach orgasm (sensation of climax) through masturbation?
   1) Nearly always (over 90% of the time)
   2) Usually (about 75% of the time)
   3) Sometimes (about 50% of the time)
   4) Seldom (about 25% of the time)
   5) Never
   6) Have never tried to

24. If you try is it possible for you to reach orgasm (sensation of climax) through having your genitals caressed by your mate?
   1) Nearly always (over 90% of the time)
   2) Usually (about 75% of the time)
   3) Sometimes (about 50% of the time)
   4) Seldom (about 25% of the time)
   5) Never
   6) Have never tried to

25. If you try, is it possible for you to reach orgasm (sensation of climax) through sexual intercourse?
   1) Nearly always (over 90% of the time)
   2) Usually (about 75% of the time)
   3) Sometimes (about 50% of the time)
   4) Seldom (about 25% of the time)
   5) Never
   6) Have never tried to

26. Can you reach orgasm (sensation of climax) through stimulation of your genitals by an electric vibrator or any other means (i.e., running water, rubbing with some object, etc.)?
   1) Nearly always (over 90% of the time)
   2) Usually (about 75% of the time)
   3) Sometimes (about 50% of the time)
   4) Seldom (about 25% of the time)
   5) Never
   6) Have never tried to

27. (*Women only*) Can you reach orgasm during sexual intercourse if, at the same time, your genitals are being caressed (by yourself or your mate with a vibrator, etc.)?
   1) Nearly always (over 90% of the time)
   2) Usually (about 75% of the time)
   3) Sometimes (about 50% of the time)
   4) Seldom (about 25% of the time)
   5) Never
   6) Have never tried to
28. Have you noticed a change in the intensity and pleasure of your orgasm?
   1) Much more intense and pleasurable than in the past
   2) Somewhat more intense and pleasurable than in the past
   3) The same as in the past
   4) Somewhat less intense and pleasurable than in the past
   5) Much less intense and pleasurable than in the past

29. Is the female's vagina so "dry" or "tight" that intercourse cannot occur?
   1) Never
   2) Rarely (less than 10% of the time)
   3) Seldom (less than 25% of the time)
   4) Sometimes (50% of the time)
   5) Usually (75% of the time)
   6) Nearly always (over 90% of the time)

30. Do you feel pain in your genitals (sexual parts) during intercourse?
   1) Never
   2) Rarely (less than 10% of the time)
   3) Seldom (less than 25% of the time)
   4) Sometimes (50% of the time)
   5) Usually (75% of the time)
   6) Nearly always (over 90% of the time)

31. How often does pain (genital or nongenital) interfere with your ability to feel sexual pleasure?
   1) Never
   2) Rarely (less than 10% of the time)
   3) Seldom (less than 25% of the time)
   4) Sometimes (50% of the time)
   5) Usually (75% of the time)
   6) Nearly always (over 90% of the time)

32. Have you noticed a change in the sensitivity to touch of your genitals?
   1) Much more sensitive than in the past
   2) Somewhat more sensitive than in the past
   3) About as sensitive as in the past
   4) Somewhat less sensitive than in the past
   5) Much less sensitive than in the past

33. Overall, how satisfactory to you is your sexual relationship with your mate?
   1) Extremely unsatisfactory
   2) Moderately unsatisfactory
   3) Slightly unsatisfactory
   4) Slightly satisfactory
   5) Moderately satisfactory
   6) Extremely satisfactory

34. Overall, how satisfactory do you think your sexual relationship is to your mate?
   1) Extremely unsatisfactory
   2) Moderately unsatisfactory
   3) Slightly unsatisfactory
   4) Slightly satisfactory
   5) Moderately satisfactory
   6) Extremely satisfactory

35. Do you feel that your partner plays a part in causing a problem in your sex life?
   1) Yes
   2) No

36. If your lovemaking does not go well, how does your partner usually react?
   1) Accepting and understanding
   2) Frustrated or annoyed
   3) Anxious and blaming self
   4) Neutral or uncaring

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37. *(Women only, men go on to Question 38)* When you have sex with your mate (including foreplay and intercourse) do you notice some of these things happening: your breathing and pulse speed up, wetness in your vagina, pleasurable sensations in your breasts and genitals?
   1) Nearly always (over 90% of the time) 4) Seldom (about 25% of the time)
   2) Usually (about 75% of the time) 5) Never
   3) Sometimes (about 50% of the time) 6) Have never tied to

38. *(Men only)* How often do you wake from sleep with a firm erection (including times when you wake up needing to urinate)?
   1) Daily 5) Once a month
   2) 3-4 times a week 6) Less than once a month
   3) 1-2 times a week 7) Never
   4) Once every 2 weeks

39. *(Men only)* How often do you wake from sleep with a partial (semisoft) erection?
   1) Daily 5) Once a month
   2) 3-4 times a week 6) Less than once a month
   3) 1-2 times a week 7) Never
   4) Once every 2 weeks

40. *(Men only)* How often are you able to get and keep a firm erection in your own masturbation (self-touch in private)?
   1) Nearly always, over 90% of the time
   2) Usually, 75% of the time
   3) Sometimes, 50% of the time
   4) Seldom, less than 25% of the time
   5) Rarely, less than 10% of the time
   6) Never
   7) Have not tried masturbation in the past 6 months

41. *(Men only)* What is your typical degree of erection during masturbation (self-touch in private)?
   1) 0% to 20% of a full erection
   2) 20% to 40% of a full erection
   3) 40% to 60% of a full erection
   4) 60% to 80% of a full erection
   5) 80% to 100% of a full erection

42. *(Men only)* Do you feel your erect penis has an abnormal curve to it, or have you noticed a lump or “knot” on your penis?
   1) Yes 2) No

43. *(Men only)* Do you believe your penis is abnormally small?
   1) Yes 2) No
44. *(Men only)* How does the amount of ejaculate (liquid or semen) now compare to the amount you ejaculated in the past?

1) Much greater than in the past
2) Somewhat greater than in the past
3) About the same as in the past
4) Somewhat less than in the past
5) Much less than in the past
6) I do not know

45. *(Men only)* Do you ever have the sensation of orgasm (climax) without any ejaculation of fluid?

1) Never
2) Rarely, less than 10% of the time
3) Seldom, less than 25% of the time
4) Sometimes, about 50% of the time
5) Usually, about 75% of the time
6) Nearly always, over 90% of the time

46. *(Men only)* Do you ever have pain and/or burning during or after ejaculation?

1) Never
2) Rarely, less than 10% of the time
3) Seldom, less than 25% of the time
4) Sometimes, about 50% of the time
5) Usually, about 75% of the time
6) Nearly always, over 90% of the time
7) I do not ejaculate
Dyadic Adjustment Scale

Most persons have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

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<th>Frequently Disagree</th>
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<td>10. Aims, goals, or things believed important</td>
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<td>11. Amount of time spent together</td>
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<td>12. Making major decisions</td>
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<td>13. Household tasks</td>
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<td>14. Leisure time interests and activities</td>
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<td>15. Career decisions</td>
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<td>16. How often do you discuss or have considered divorce, separation, or termination of your relationship?</td>
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<td>17. How often do you or your mate leave the house after a fight?</td>
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<td>18. In general, how often do you think that things between you and your partner are going well?</td>
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<td>19. Do you confide in your mate?</td>
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<td>20. Do you ever regret that you married? (or lived together?)</td>
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<td>21. How often do you and your partner quarrel?</td>
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<tr>
<td>22. How often do you and your mate get on each other's nerves?</td>
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</tbody>
</table>
23. Do you kiss your mate

24. Do you and your mate engage in outside interests together?

How often would you say the following events occur between you and your mate?

<table>
<thead>
<tr>
<th>Never</th>
<th>Less than once a month</th>
<th>Once or twice a month</th>
<th>Once or twice a week</th>
<th>More often</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Have a stimulating exchange of ideas</td>
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<tr>
<td>26. Laugh together</td>
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<tr>
<td>27. Calmly discuss something</td>
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<td>28. Work together on a project</td>
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</table>

There are some things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship during the past few weeks. (check yes or no)

29. [ ] Yes  [ ] No  Being too tired for sex
30. [ ] Yes  [ ] No  Not showing love

31. The dots on the following line represent different degrees of freedom of happiness in your relationship. The middle point happy, represent the degree of happiness of most relationships. Please circle the dot which best describes the degree of happiness, all things considered of your relationship.

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<th>0</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely Unhappy</td>
<td>Fairly Unhappy</td>
<td>A little Happy</td>
<td>Happy</td>
<td>Very Happy</td>
<td>Extremely Happy</td>
<td>Perfect</td>
</tr>
</tbody>
</table>

32. Which of the following statements best describes how you feel about the future of your relationship?

[ ] I want desperately for my relationship to succeed and would go to almost any length to see that it does
[ ] I want very much for my relationship to succeed and will do all I can to see that it does
[ ] I want very much for my relationship to succeed and will go my fair share to see that it does
[ ] It would be nice if my relationship succeeded but I can't do much more than I am doing now to help it succeed
[ ] It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going
[ ] My relationship can never succeed and there is no more that I can do to keep the relationship going
Relationship Assessment Scale –

Adapted for Dating

1. How well does your dating partner meet your needs?
   A B C D E
   Poorly Average Extremely Well

2. In general, how satisfied are you with your relationship with your dating partner?
   A B C D E
   Unsatisfied Average Extremely Satisfied

3. How good is your relationship with your dating partner compared to most?
   A B C D E
   Poor Average Excellent

4. How often do you wish that you hadn't gotten into the relationship with your dating partner?
   A B C D E
   Never Average Very Often

5. To what extent has your relationship with your dating partner met your original expectations?
   A B C D E
   Hardly at all Average Completely

6. How much do you care for your dating partner?
   A B C D E
   Not much Average Very Much

7. How many problems are there in your relationships with your dating partner?
   A B C D E
   Very Few Average Very many
1. How well do your friendships meet your needs?

A  B  C  D  E
Poorly Average Extremely Well

2. In general, how satisfied are you with your relationships with your friends?

A  B  C  D  E
Unsatisfied Average Extremely Satisfied

3. How good are your relationships with your friends compared to other people’s friendships?

A  B  C  D  E
Poor Average Excellent

4. How often do you wish that you hadn’t gotten into relationships with your friends?

A  B  C  D  E
Never Average Very Often

5. To what extent have your friendships met your expectations about what friendships should be?

A  B  C  D  E
Hardly at all Average Completely

6. How much do you care for your friends?

A  B  C  D  E
Not much Average Very Much

7. How many problems are there in your relationships with your friends?

A  B  C  D  E
Very Few Average Very many
Relationship Assessment Scale –
Adapted for Family of Origin

1. How well do members of your family of origin meet your needs?

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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>Poorly</td>
<td>Average</td>
<td>Extremely Well</td>
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</table>

2. In general, how satisfied are you with your relationships with your family of origin?

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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>Unsatisfied</td>
<td>Average</td>
<td>Extremely Satisfied</td>
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</table>

3. How good are your relationships with your family of origin compared to most?

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>Poor</td>
<td>Average</td>
<td>Excellent</td>
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</table>

4. How often do you wish that you weren’t in relationships with members of your family of origin?

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<th>A</th>
<th>B</th>
<th>C</th>
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<tbody>
<tr>
<td>Never</td>
<td>Average</td>
<td>Very Often</td>
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5. To what extent have your relationships with members of your family of origin met your expectations of what these relationships should be?

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<th>A</th>
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<th>E</th>
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<tbody>
<tr>
<td>Hardly at all</td>
<td>Average</td>
<td>Completely</td>
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6. How much do you care for the members of your family of origin?

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<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>Not much</td>
<td>Average</td>
<td>Very Much</td>
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</table>

7. How many problems are there in your relationships with your family of origin?

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<th>B</th>
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<tbody>
<tr>
<td>Very Few</td>
<td>Average</td>
<td>Very many</td>
<td></td>
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</table>
Relationship Assessment Scale –
Adapted for Coworkers

1. How well do your relationships with your coworkers meet your needs?
   A B C D E
   Poorly Average Extremely Well

2. In general, how satisfied are you with your relationships with your coworkers?
   A B C D E
   Unsatisfied Average Extremely Satisfied

3. How good are your relationships with your coworkers compared to other people’s relationships with coworkers?
   A B C D E
   Poor Average Excellent

4. How often do you wish that you hadn’t gotten into relationships with your coworkers?
   A B C D E
   Never Average Very Often

5. To what extent have your relationships with your coworkers met your expectations about what work relationships should be?
   A B C D E
   Hardly at all Average Completely

6. How much do you care for your coworkers?
   A B C D E
   Not much Average Very Much

7. How many problems are there in your relationships with your coworkers?
   A B C D E
   Very Few Average Very many
Relationship Assessment Scale –

Adapted for Parents

1. How well does your relationship with your child (children) meet your needs?

A B C D E
Poorly Average Extremely Well

2. In general, how satisfied are you with your relationship with your child (children)?

A B C D E
Unsatisfied Average Extremely Satisfied

3. How good is your relationship with your child (children) compared to most?

A B C D E
Poor Average Excellent

4. To what extent has your relationship with your child (children) met your expectations of what these relationships should be?

A B C D E
Hardly at all Average Completely

5. How much do you care for your children?

A B C D E
Not much Average Very Much

6. How many problems are there in your relationship with your child (children)?

A B C D E
Very Few Average Very many
APPENDIX V

WEIGHT-RELATED RELATIONSHIP
ADJUSTMENT QUESTIONNAIRES

Weight-Related Relationship Adjustment

Questionnaire-Dating

Our past research indicates a number of dating issues that some patients have experienced. If you are married or in a committed relationship, move on to the next questionnaire. If not, please indicate the extent to which each of these items accurately reflect your experience over the past three months only.

1. I dated someone who I did not really like.

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<tbody>
<tr>
<td>Not true at all</td>
<td>Very true</td>
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2. I felt that anyone interested in me was interested for the right reasons.

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3. I felt other single people were not interested in me.

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4. I felt comfortable with my dating skills.

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5. I felt there must be something wrong with someone who wanted to date me.

Not true at all  1  2  3  4  5  6  7  8  9  10  Very true

6. I felt that my personality was good enough for people to want to date me on that basis alone.

Not true at all  1  2  3  4  5  6  7  8  9  10  Very true

7. I engaged in sexual activity without really wanting to.

Not true at all  1  2  3  4  5  6  7  8  9  10  Very true

8. I felt ready and open to dating people.

Not true at all  1  2  3  4  5  6  7  8  9  10  Very true

9. I felt scared about dating.

Not true at all  1  2  3  4  5  6  7  8  9  10  Very true

10. I felt satisfied with my dating life.

Not true at all  1  2  3  4  5  6  7  8  9  10  Very true
Weight-Related Relationship Adjustment

Questionnaire-Friendship

Our past research indicates a number of friendship issues that some patients have experienced. Please indicate the extent to which these each of these items accurately reflects your experience over the past three months only.

1. I felt that my friends took me for granted or took advantage or me.

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2. I felt that my friends included me in their activities.

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3. I felt that my friendships had suffered (lost friends or friendships deteriorated).

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4. I felt that I could confront my friends if I had to and tell them what I thought if they upset me.

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5. One or more friends said insulting or hurtful things to me.

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6. I felt that my friends enjoyed my company.

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7. I felt that my friends were jealous/envious of me.

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8. I felt that my friends were comfortable with me being around their romantic partners.

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<td>Not true at all</td>
<td>Very true</td>
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9. I made one or more new friends.

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<td></td>
<td>Not true at all</td>
<td>Very true</td>
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10. I felt satisfied with my friendships.

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<td></td>
<td></td>
<td>Not true at all</td>
<td>Very true</td>
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Weight-Related Relationship Adjustment

Questionnaire-Family of Origin

Our past research indicates a number of issues that some patients have experienced with their family of origin (i.e., parents and siblings). Please indicate the extent to which each of these items accurately reflects your experience over the past three months only.

1. I felt that my family of origin accepted me, as I am.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

2. I felt that my family of origin took advantage of me.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

3. I felt that my family of origin wanted me to do what was best for me.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

4. I felt that I was blamed for problems within my family of origin, more than I deserve.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

5. I felt that I could address problems with members of my family of origin.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

6. I felt that I was not of equal status with members of my family of origin.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

7. I felt that my family of origin was proud of me.

   1  2  3  4  5  6  7  8  9  10
   Not true at all Very true

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8. I felt that it was primarily up to me to keep the peace within my family of origin.

| Not true at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Very true |

9. I felt that members of my family of origin were jealous/envious of me.

| Not true at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Very true |

10. I felt satisfied with my relationship with members of my family of origin.

| Not true at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 Very true |
Weight-Related Relationship Adjustment

Questionnaire-Work

If you have been unemployed for at least three months, please continue to the next questionnaire.

Our past research indicates a number of work relationship issues that some patients have experienced. Co-workers is used in this questionnaire to include everyone employed by the same outfit, including your boss, people at your level and people who work under you. Please indicate the extent to which each of these items accurately reflects your experience over the past three months only.

1. I felt respected by my co-workers.

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2. I felt that my coworkers ignored me or left me out.

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3. I felt as if my co-workers truly wanted to see me succeed.

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4. I felt that I had to work harder than others to prove my value as an employee.

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5. I felt that my appearance worked to my advantage at work.

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6. I felt that my co-workers took advantage of me.

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7. I felt that I would be just as likely to receive a promotion as any other employee with the same credentials.

1  2  3  4  5  6  7  8  9  10
Not true at all  Very true

8. I felt I could not address problems with my coworkers.

1  2  3  4  5  6  7  8  9  10
Not true at all  Very true

9. My co-workers complimented me on my appearance.

1  2  3  4  5  6  7  8  9  10
Not true at all  Very true

10. I felt satisfied with my relationships with my co-workers.

1  2  3  4  5  6  7  8  9  10
Not true at all  Very true
Weight-Related Relationship Adjustment

Questionnaire-Parenting

If you do not have any children, please go to the next questionnaire.

Our past research indicates a number of parenting issues that some patients have experienced. Please indicate the extent to which each of these items accurately reflect your experience over the past three months only.

1. I could not fully participate in play activities with my children.

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2. I was able to take proper care of my children’s hygiene needs at home.

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3. I felt that my children were embarrassed to bring friends home.

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4. I was a good role model for my children.

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5. I felt my children did not want me to attend activities that involved their friends or their friends’ parents, such as extra-curricular activities.

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6. I feared that I may not be able to physically protect my children if an accident were to occur.

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7. I had the energy to attend to my children’s demands.

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8. I provided healthy, balanced nutrition for my children.

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9. I was irritable with my children.

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10. I felt satisfied with my parenting.

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APPENDIX VI

EXPECTATIONS OF RELATIONSHIP

IMPROVEMENT INDEX

1. To what extent, if any, do you expect your marriage to improve following surgery?

1__________2__________3_________4_________5___________6_________7

Not at All                     Completely

2. How important is it to you that your marriage improves following surgery?

1__________2__________3_________4_________5___________6_________7

Not at All                     Completely

3. To what extent, if any, do you expect your sexual relationship to improve following surgery?

1__________2__________3_________4_________5___________6_________7

Not at All                     Completely

4. How important is it to you that your sexual relationship improves following surgery?

1__________2__________3_________4_________5___________6_________7

Not at All                     Completely
5. To what extent, if any, do you expect your dating relationship(s) to improve following surgery?

1 2 3 4 5 6 7

Not at All Completely

6. How important is it to you that your dating relationship(s) improves following surgery?

1 2 3 4 5 6 7

Not at All Completely

7. To what extent, if any, do you expect your friendships to improve following surgery?

1 2 3 4 5 6 7

Not at All Completely

8. How important is it to you that your friendships improve following surgery?

1 2 3 4 5 6 7

Not at All Completely

9. To what extent, if any, do you expect your relationships with your family of origin to improve following surgery?

1 2 3 4 5 6 7

Not at All Completely

10. How important is it to you that your relationships with your family of origin improve following surgery?

1 2 3 4 5 6 7

Not at All Completely
11. To what extent, if any, do you expect your relationships with your *coworkers* to improve following surgery?

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ]

Not at All               Completely

12. How important is it to you that your relationships with your *coworkers* improve following surgery?

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ]

Not at All               Completely

13. To what extent, if any, do you expect your *relationship with your child/children* to improve following surgery?

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ]

Not at All               Completely

14. How important is it to you that your *relationship with your child/children* improves following surgery?

1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ]

Not at All               Completely
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GREAT Summer Scholarship, UNLV, 2001
Psi Chi
Alpha Kappa Delta

Publications:


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Committee Member, Dr. Christopher Heavey, Ph.D.
Committee Member, Dr. Dan Allen, Ph.D.
Graduate Faculty Representative, Dr. Kate Hausbeck, Ph.D.