

Mental Health Services and Weight Loss Surgery

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Abstract

The purpose of this study was to assess the viability of various mental health services and delivery systems in aiding weight loss surgery patients. Participants included 40 post- bariatric surgery patients from two medical centers who were currently attending a post-surgical support group. Participants were surveyed regarding perceptions of pre- and post-surgical counseling, therapies, and treatments. Support groups led by a registered nurse and/or dietitian were found to be the most helpful both pre-and post-surgically.

According to the World Health Organization (WHO, 2013), “worldwide obesity has nearly doubled since 1980” (para. 1) with approximately 1.4 billion adults classified as overweight with one third being classified as obese. As a result of this rapid growth in obesity, 65% of people across the world live in places where being overweight or obese leads to more deaths than malnutrition. In the United States, more than 78 million adults and 12.5 million children are considered clinically obese (Ogden, Carroll, Kit, & Flegal, 2012, p. 3).

Body mass index (BMI), body “weight in kilograms divided by the square of the height in meters” (para. 1), is commonly used as a predictor of a person’s weight status. BMI classifications include the following: (a) less than 19 is *underweight*, (b) between 19 and 25 is *acceptable*, (c) over 25 is *overweight*, (d) over 30 is *obese*, and (e) over 40 is *morbidly obese* or *obesity class III* (WHO, 2014, para. 1). Individuals who are classified as obese or morbidly obese are more likely to be discriminated against and suffer from psychological and economic issues (Sutin & Terracciano, 2013). Obesity is also the leading risk factor of death due to cancer, coronary heart disease (CHD), hypertension, osteoarthritis, stroke, and Type 2 diabetes (Centers for Disease Control [CDC], 2012; WHO, 2013). Sturm (2007, p. 494) reported that from 2000 to 2005 the prevalence of the morbidly obese increased by 50% and the *severely obese* (BMI > 50) by 75%. WHO (2013) classified obesity as an epidemic in 2005 and called on world leaders to address the growing threat. These leaders created global diet and physical activity strategies in a

2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases (WHO, 2008). The action plan updated in 2013 warned of the continuing rise in noncommunicable diseases and stated that the threat posed a major challenge going into the twenty-first century (WHO, 2013).

Due to the increasing number of obese individuals, a NIH Consensus Development Panel (1991) convened and recommended the following:

- patients seeking therapy for severe obesity for the first time should be considered for treatment in a nonsurgical program that integrates a dietary regimen, appropriate exercise, behavior modification, and psychological support;
- that gastric restrictive or bypass procedures could be considered for well-informed and motivated patients in whom the operative risks were acceptable;
- that patients who are candidates for surgical procedures should be selected carefully after evaluation by a multidisciplinary team with medical, surgical, psychiatric, and nutritional expertise;
- that surgery be done by a surgeon who has substantial experience in the particular procedure and who works in a clinical setting with adequate support for all aspects of management and assessment; and
- that patients undergo lifelong medical surveillance after surgery. (p. 956)

Only 5% to 15% of obese individuals have been able to lose weight through conventional lifestyle changes such as diet and exercise with the typical dieter regaining “about 30% to 50% of their lost weight during the next year, and most [returning] back to baseline within 3 to 5 years” (Legenbauer, Petrak, Zwaan, & Herpertz, 2011, p. 301). As a result, many obese individuals have turned to weight loss surgery for relief with more than 220,000 persons undergoing some form of surgery in 2008 (Barbee, 2010, p. 289). On average, weight loss surgery patients lose 47% to 80% of their excess weight. Additionally, the surgery has been associated with aiding in the decline of “diabetes, sleep apnea, hypercholesterolemia, and hypertension” (p. 289), but the surgery is not a guarantee to permanent weight loss. After two years, 20% of patients reported a substantial weight gain two years after surgery, with some researchers estimating the number to be as high as 50% (Budak & Thomas, 2009, p. 116; Livhits et al., 2011). Underlying causes of the regained weight are numerous, but behavioral and sociocultural factors are thought to contribute (Barbee, 2010).

Weight Loss Surgery and Behavioral Health

Members of the NIH and the American Society for Metabolic and Bariatric Surgery (ASMB) have stated they believe it is important for “behavioral health providers to have specialty knowledge” (West-Smith & Sogg, 2010, p. 695) regarding preoperative psychosocial evaluations. Psychological evaluations also may be crucial to bariatric surgery (BS) patients’ coping skills and lifestyle adjustments associated with the changes that accompany weight loss surgery (Snyder, 2009). Herpertz, Kielmann, Wolf, Hebebrand, and Senf’s (2004) review of “psychological and psychosocial predictors of weight loss and bariatric surgery” (p. 1554) suggested an emphasis on behavioral models with less consideration being placed on the psychiatric aspects of postoperative treatment. Dornelas (2008) suggested that clinicians develop

better psychotherapy treatments to address cognitive, emotional, and interpersonal concerns affecting the morbidly obese and surgical patients. In a study of the benefits of CBT groups, McVay and Friedman (2012) found that although most practitioners recognized the need for CBT, physicians had questions regarding the specific method of delivery, frequency, and timing of the CBT. “Currently, there is no standard protocol for cognitive behavioral intervention pre- or post-weight loss surgery” (p. 24).

This study examined the availability of mental health services and delivery systems offered to weight loss surgery patients, how these services have affected weight loss, and the perceived effectiveness of different forms of therapy. Ultimately, the goal of this study was to provide patients who have undergone weight loss surgery, and those considering weight loss surgery, with resources and support that may aid them in with their weight loss goals.

Methodology

The self-reported Preoperative/Postoperative Quality of Care Assessment (PPQCA) was created by the researchers and used to quantitatively examine pre-surgical and post-surgical behavioral models and psychological treatments administered to bariatric surgery (BS) patients. Treatments received by BS patients before and after surgery were evaluated. A determination was made concerning which mental health services aided patients in achieving weight loss and what type of delivery systems were perceived to be most effective.

Participants

Six BS medical facilities in Northeast Texas were invited to participate in the study. Administrators at two medical centers returned signed site letters granting permission for the researchers to offer the PPQCA to their weight loss surgery support groups. Support group coordinators were requested to inform support group members of the pending online survey by posting flyers and distributing informational survey postcards. Flyers and postcards included information about the dates the survey would be active, purpose of the study, web link to the online survey, and researchers’ contact information. Both the flyer and the postcard also included IRB approval information with contact information for the IRB chair.

Data Collection

The PPQCA was administered electronically through Survey Monkey via a web-link. The PPQCA is a 32-item, original self-report survey designed to elicit information about the perceptions of BS patients regarding their preoperative and postoperative therapy experiences. Questions were posed concerning specific types of care received and perceived effectiveness of therapy in attaining weight loss goals. The PPQCA also encompassed questions regarding the timing of treatments. The PPQCA survey was used to acquire demographic information including age, BMI, and race. All questions in the PPQCA were either in multiple-choice or Likert scale formats. Preoperative assessments were also evaluated with pre-surgical evaluations being limited to the preoperative screening offered before BS.

Treatment of Data

Statistical analyses were performed using SPSS for Windows Version 20 (2011). A descriptive summative analysis was performed of participants' BMI, goal weight, weight lost, and therapy demographics. Mental health service preferences were also analyzed. The Pearson product-moment correlation coefficient (Pearson's r) was used to identify and evaluate the magnitude of the relationships among selected variables. Total weight lost was compared to the following three groups who received mental health services: (1) pre-surgically only; (2) post-surgically only; and (3) both pre-surgically and post-surgically. Total weight lost was also compared to the following types of therapy: (1) group therapy/support group (led by a counselor and/or therapist); (2) group therapy/support group (led by registered nurse and/or dietitian); (3) one-on-one with a therapist, internet based therapy (led or sponsored by a counselor and/or therapist); (4) internet based therapy (led by registered nurse and/or dietitian); (5) internet based support group (peer based - organized by fellow weight loss patients); and (6) support group (peer based - organized by fellow weight loss patients). Participants were asked which types of therapy they had received and which they perceived to be most helpful.

Results

Participants

Volunteer participants included 40 obese ($BMI \geq 30 \text{ kg/m}^2$) men and women currently attending a postoperative weight loss support group in northeast Texas who had undergone some form of BS. The participants' ages ranged between 18 to 70 years. Some patients may have undergone a preoperative evaluation process. Participants' additional demographic information, current BMI, and type of surgery were also included. The majority of the participants (70%) were married with 25% of the participants reported as single and 2.5% divorced. Only 10% of the participants were male with 87.5% being female. Six participants were between the ages of 25-39 years; seven participants were between the ages of 40-49 years; 16 participants were between the ages of 50-59 years; nine participants were between the ages of 60-69; and one participant was 70 years old. Ten percent of the participants were Hispanic; 15% were Black or African American; 2.5% were Asian; and 70% were White. A majority of the participants lived in an urban area.

The types of weight loss surgery undergone by survey participants included gastric bypass, lap band, and sleeve gastrectomy with the most common being gastric bypass surgery. Five of the participants had undergone more than one weight loss surgery procedure.

Participants' weight before surgery is depicted in Table 1. The majority of the participants fell within the 200 to 300 lbs. weight ranges with only one participant in the 400 lbs. and over weight range.

Table 1

Participants' Weight before Surgery (N=40)

Weight Range	Number of Participants	Before Weight %
200 to 250 lbs	10	25.0
251 to 300 lbs	14	35.0
301 to 350 lbs	9	22.5
351 to 400 lbs	6	15.0
400 lbs +	1	2.5

The participants' weight range varied with most weighing between 251 to 300 lbs. The 200 to 250 lbs. weight range was closely aligned with the 301 to 350 lbs. weight range with only a difference of one. The fourth highest weight range with six participants fell in the 351 to 400 lbs. weight range. Participants also reported their current BMI. One participant's current BMI was between 15 and 19; five participants' current BMI was between 20 and 25; nine participants' current BMI was between 26 and 30; five participants' current BMI was between 31 and 35; 10 participants' current BMI was between 36 and 40; five participants' current BMI was between 41 and 45; and five participants' current BMI was between 46 and 50.

Table 2 contains participants' goal weight and weight lost since surgery. The majority of participants' actual *weight lost* fell below their *goal weight*.

Table 2

*Goal Weight and Actual Weight Lost by Participants (n=38)**

Weight Range	Goal		Weight Lost	
	Frequency	%	Frequency	%
25 to 50 lbs	0	0	8	20.0
51 to 75 lbs	1	2.5	9	22.5
76 to 100 lbs	11	27.5	7	17.5
101 to 150 lbs	16	40.0	12	30.0
151 to 200 lbs	2	17.5	3	7.5
200+ lbs	3	7.5	1	2.5

*Two individuals did not answer this question.

The majority of the participants' (40%) goal weight was between 101 and 150 pounds (lbs.). This weight range also had the highest percentage of weight lost (30%). Although 22.5% of participant's weight lost was below 75 lbs., very few participants (2.5%) reported this as goal weight.

The time frames since the participants had surgery (at the time of the survey) are reported in Table 3. The majority (55%) had surgery over two years ago.

Table 3

Time Frames since Participants' Surgeries (N=40)

Time Frame	Number of Participants	% of Total Participants
Less than 1 month	1	2.5
1 to 3 months ago	7	17.5
3 to 6 months ago	3	7.5
6 months to 1 year ago	3	7.5
1 year to 1 ½ years ago	2	5.0
1 ½ years to 2 years ago	2	5.0
2 years +	22	55.0

Pre- and Post-Surgical Therapy and Weight Lost

Fifty percent of the participants received therapy before surgery. Correlation of how much weight was lost by participants who received pre-surgical therapy, post-surgical therapy, and both pre- and post- surgical therapy are shown in Table 4.

Table 4

Pearson Product-moment Correlation Coefficients for Weight Lost for Participants Receiving Both Pre- and Post-Surgical Therapy (n=20)

Weight Measures	Weight Lost	Pre-Surgical	Post-Surgical	Both Pre- and Post- Surgical
Weight Lost	_____	.313*	-.028	-.169

* p < .05 .

Of the participants who received pre-surgical therapy, 35% received pre-surgical therapy less than three months before surgery; 7.5% received pre-surgical therapy four to six months before surgery, 2.5% received pre-surgical therapy seven months to one year before surgery; 2.5% received pre-surgical therapy one to one and a half years before surgery; none received pre-surgical therapy one and a half to two years before surgery; and 5% received pre-surgical therapy over two years before surgery. The participants who received pre-surgical therapy showed moderate success in losing weight compared to the participants who received post-surgical and both pre- and post-surgical therapy.

A report of what types of mental health services were received by those participants who received therapy before surgery along with which pre-surgical therapies were rated as being helpful to most are shown in in Table 5.

Table 5

Pre-Surgical Psychological and Behavioral Therapies Received and Rated as Helpful to Most Helpful (n=20)

Type of Therapy	Received %	Helpful to Most Helpful %
One-on-one with a therapist	42.5*	25.0
Group therapy/support group (led by a counselor and/or therapist)	20.0	17.5
Group therapy/support group (led by a registered nurse and/or dietitian)	27.5	30.0*
Support group (peer based-organized by fellow weight loss patients)	15.0	12.5
Internet based therapy (led by a counselor and/or therapist)	0	0
Internet based therapy (led by registered nurse and/or dietitian)	0	0
Internet based therapy (peer based-organized by fellow weight loss patients)	7.5	5.0

*denotes highest percentage.

The majority of the participants received one-on-one therapy with a therapist (42.5%) before surgery. Pre-surgical, one-on-one therapy was also reported to be the second *helpful to most helpful* by participants. A majority of the participants also felt they would have benefited from additional pre-surgical, one-on-one therapy. A support group led by a registered nurse (RN) and/or dietitian was the second most attended pre-surgical therapy but was the highest rated in aiding weight loss. Participants also judged registered nurse and/or dietitian led support groups as their second choice for additional pre-surgical therapy they would have chosen before surgery. Counselor-led support groups were third in pre-surgical attendance, but were found to be only *marginally helpful*. Counselor-led support groups were scored higher by participants when

selecting desired additional pre-surgical therapies. The only pre-surgical internet based therapy received was peer-based. The peer-based internet therapy received only *moderately helpful* scores, and few thought they would have benefited from additional sessions. Although no participants attended an internet therapy led by a counselor or registered nurse and/or dietitian, both therapies had a few participants that felt they would have benefited from receiving the therapy before surgery.

Table 6 shows types of therapy received by participants who only received post-surgery mental health services. It also includes which post-surgical therapies received were *helpful to most helpful*.

Table 6

Post-Surgical Psychological and Behavioral Therapies Received and Rated as Helpful to Most Helpful (n=16).

Therapy	Received %	Helpful to Most Helpful %
One-on-one with a therapist	2.5	10.0
Group therapy/support group (led by a counselor and/or therapist)	17.5	15.0
Group therapy/support group (led by a registered nurse and/or dietitian)	30.0*	27.5*
Support group (peer based-organized by fellow weight loss patients)	12.5	17.5
Internet based therapy (led by a counselor and/or therapist)	0	2.5
Internet based therapy (led by registered nurse and/or dietitian)	0	2.5
Internet based therapy (peer based-organized by fellow weight loss patients)	10.0	10.0

*denotes highest percentage.

The majority of the participants who reported receiving post-surgical therapy attended a support group led by a registered nurse and/or dietitian. This form of therapy was reported as being the *most helpful* of all listed. The second most attended support group was led by a counselor and was also deemed to be *helpful* by participants. The third most attended was peer-based support groups and was also found to be *helpful* by participants. Only a few participants received peer-based internet therapy but did report the therapy had been *helpful*. Only one participant received one-on-one therapy with a therapist after surgery, and it was also reported as being *helpful* in aiding weight loss. Participants did not participate in internet counselor or registered nurse and/or dietitian led therapies.

Discussion

The purpose of this study was to examine the availability of mental health services and delivery systems offered to weight loss surgery patients. Also determinations were made concerning how these services have affected weight loss; if treatment should be administered pre-surgical, post-surgical, or both; and what type of services and delivery systems were perceived to be most beneficial. According to the participants, mental health services and treatments do moderately aid bariatric patients in achieving weight loss; although, the expectation was that the connection between therapy and weight loss would be greater. A significant number of the participants did report that they planned to continue post-surgical therapy and a majority recommended both pre- and post-surgery therapy to future weight loss surgery patients.

The expectation was that participants who received both pre- and post-surgical therapy would yield the most weight loss, but participants who attended pre-surgical therapy yielded the most weight loss after surgery. The pre-surgical weight loss was moderate but enough to confirm that pre-surgical therapy did aid in patients weight loss after surgery. The participants who received post-surgical therapy only achieved marginal weight loss. The participants who received both pre- and post-surgical therapy also displayed marginal weight loss. Although the expectation was that the correlations would be higher, the post-surgical and pre-/post-surgical results do suggest that therapy could possibly aid in weight loss. This result was somewhat diminished by the small sample size.

The participants' beliefs regarding the benefits of therapy in aiding weight loss was also unexpected. Initially, a significant amount of participants believed that therapy could not aid them in achieving their weight loss goals, but an overwhelming majority of the participants who attended pre-surgical therapy reported that the therapy aided them in achieving weight loss. A large majority of the post-therapy participants also reported the therapy they received as being beneficial in aiding weight loss. A significant number of the participants also reported that they intended to continue to receive post-surgical therapy. Only one participant felt that pre- and/or post-surgical therapy would not aid future weight loss patients in helping them attain their weight loss goals.

The expectation was that one-on-one therapy with a therapist would be judged the most helpful in aiding in weight loss due to the psychological training of the therapist, but participants found support groups led by a registered nurse and/or dietitian to be the most beneficial both pre- and post-surgically. One reason for this selection might be the expertise registered nurses and/or

dietitians bring to the therapy in relation to medical questions directly related to weight loss surgery. One-on-one therapy with a therapist was found to be the second most desirable choice for pre-surgical therapy but substantially less desirable for post-surgical therapy. The popularity of registered nurse/dietitian led support groups could be related to the fact that most are free or cost substantially less than other forms of mental health services.

Interestingly, very few participants engaged in pre- or post-surgical internet based therapies. Because a majority of the participants' ages were over 40, many medical personnel might presume that participants were not comfortable using technology; but this assumption was rebutted by recent study findings that older students felt more comfortable using new technology in pursuing their education than their younger counterparts (Yau & Cheng, 2012). Another explanation might be the loss of intimacy that can only be provided by face-to-face therapies.

One-on-one therapy with a therapist and/or counselor was the most utilized pre-surgical therapy, but was only received by one participant post-surgically. One explanation could be that many insurances require a pre-surgical psychological examine before surgery. The majority of the participants who received therapy before surgery reported having received sessions less than three months before surgery. A majority of the participants also reported that their insurance only covered therapy before surgery and not after. This lack of insurance coverage could also explain why few received one-on-one therapy post-surgically. One-on-one therapy could be more beneficial because the pre-surgical therapy patients lost more weight.

Many participants reported marginally positive scores when reflecting upon whether pre- and post-therapy were beneficial in helping them achieve weight loss; but when asked whether they would recommend pre-surgical therapy, post-surgical therapy, or both to future weight loss patients, over half of the participants recommended receiving both pre- and post-surgical therapy. The researchers also did not consider the BS counseling training of support group leaders, but assumed that registered nurse/dietitian support group leaders had completed some form of specialty support group training. Another assumption was that all of the support groups followed similar therapy parameters.

Conclusions and Recommendations

In this study, a heavy reliance on the accuracy of participants' self-reported answers existed. Participants' weight, BMI, and surgery type and timing were all reported by participants and not compared to any other patient records or data. For a more accurate account, researchers would need to recruit participants before their surgeries in order to collect more reliable data. A longer study consisting of a three-month to one-year (or longer) study of a patient's weight loss and therapy habits would also yield more reliable results. A larger sample size consisting of more medical centers could possibly yield different results, although researchers would have to take into account the various modes of therapy offered and research the parameters of each program. The current sample was also predominately older white women living in a mostly urban area of Dallas/Fort Worth.

Since the NIH recommendation, bariatric surgery has grown to be the leading remedy for morbid obesity; but due to rising obesity rates, healthcare professionals have struggled to keep up with the demand for surgery, new technologies, and the development of new procedures (Sarwer, 2008). Sarwer, Dilks, and West-Smith (2011) studied bariatric behavioral strategies and found that behavioral issues represented "perhaps the greatest threat to successful long-term

weight maintenance after bariatric surgery” (p. 648). Kalarchian et al. (2007) found that patients that suffered setbacks faced limited treatment options and stressed the need for research in order to “inform the management of this subgroup of patients” (p. 710). Unfortunately, the psychological and behavioral needs that come with weight loss surgery have been tenuous at best with the criteria for psychological testing varying greatly with no apparent uniform guidelines existing (Bauchowitz et al., 2005). As a result, many facilities offer a limited variety of behavioral programs to weight loss surgery patients (McVay & Friedman, 2012).

This study has implications for mental health professionals. Bariatric patients need *both* pre- and post-surgical mental health services. Patients have also shown a preference for additional aid from support groups. Mental health professionals should have knowledge of various weight loss surgeries along with training and experience in working with overweight and obese individuals in order to be effective.

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