

**Examining self-conscious emotions in post-bariatric surgery patients: Is shame
predictive of psychological morbidity, impaired quality of life, body image
disturbance and low self-esteem?**

A Cross Sectional Study

Thesis submitted to the University of Leicester
Faculty of Medicine & Biological Sciences,
School of Psychology, for the degree of
Doctorate in Clinical Psychology

By

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Declaration

I confirm that the literature review, research report, and the critical appraisal contained within this thesis is my own work and it has not been submitted for any other academic award or to any other institution.

Thesis Abstract

Examining self-conscious emotions in post-bariatric surgery patients: Is shame predictive of psychological morbidity, impaired quality of life, body image disturbance and low self-esteem?

By Taljinder Basra

Obesity has more than doubled over the past three decades, and due to its association with physical and psychological morbidities, it is now one of the fastest growing health problems. Consequently, bariatric surgery has become more popular when all other treatment options have failed. This thesis sought to better understand the presence and relationships of psychosocial factors after bariatric surgery patients.

Literature Review

Excess skin after massive weight loss is common in bariatric patients. The current review examined studies that quantitatively explored psychosocial outcomes after body contouring (reconstructive surgery). Ten studies were included and the findings were equivocal with some suggesting positive psychosocial outcomes and others implying a negative association.

Research Report

The empirical paper examined the role of shame in post bariatric surgery patients. Shame has been frequently explored in eating disorders but it has not been examined in a bariatric surgery sample. This study aimed to explore the extent to which shame was present and predicted psychological morbidity, low self-esteem, impaired quality of life and body image disturbance in this population.

Questionnaires were posted to 265 eligible participants, of which, 80 participants returned completed measures. The data were examined using descriptive, correlation and multiple regression analyses.

The findings suggest that post bariatric surgery patients experienced higher levels of shame, anxiety and depression, lower self-esteem, impaired quality of life and problematic body image disturbance compared to the normal population. Shame also predicted the variance in psychological morbidity, self-esteem, quality of life and body image disturbance.

Critical Appraisal

The critical appraisal is a reflective and personal account that discusses the research journey and some important issues relating to quantitative research.

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Literature Review

Wishful shrinking. A systematic review of literature examining the psychosocial impact of reconstructive surgery for individuals who have undergone massive weight loss surgery

By

Taljinder Basra

1. Abstract

1.1 Introduction

Although the number of individuals undergoing surgical weight loss (also known as bariatric surgery) for obesity is growing, it commonly leaves recipients with excess and overhanging skin. Consequently, body contouring (reconstructive surgery) has developed to help address this problem, however, little is known about the impact of body contouring on an individual's psychological state. The current review aimed to critically examine quantitative studies that investigated psychosocial outcomes in post-bariatric surgery patients who had undergone body contouring surgery.

1.2 Method

A systematic search of the following internet sites and databases was completed: SCOPUS, Medline, PubMed, SpringerLink, Ovid (Sp) PsychINFO, The Cochrane Library, Google Scholar and PsycArticles was conducted in September 2013 and again in March 2014.

1.3 Results

Ten articles were identified that examined psychosocial constructs in post-bariatric surgery patients. The current review found equivocal results, with some studies showing improvements in psychological wellbeing after body contouring, others showing no or minimal improvement and even some studies demonstrating a deterioration in an individual's psychological status. However, the findings of these studies must be viewed tentatively due to the methodological fragilities, especially because all ten studies used either unvalidated measures or measures that lacked robust psychometric properties and most of the studies used small sample sizes.

1.4 Conclusion

Due to the paucity of methodologically sound studies, consensus on psychological sequelae is elusive. Research of greater rigour is needed to develop specific valid and reliable measurement tools to, and to better assess, psychosocial impacts in this population.

2. Introduction

2.1 Clinical Context

To be obese is to have accumulated excess body fat to such an extent that health and wellbeing are significantly and adversely affected (Royal College of Physicians, 1998). A diagnosis of obesity is conferred if Body Mass Index (BMI = weight divided by height squared) exceeds 30kg/m^2 with comorbid medical conditions with morbid obesity indicated if BMI exceeds 40kg/m^2 (World Health Organization, 2000).

In developed countries, the prevalence of obesity has burgeoned over the last two decades. One in four adults is currently obese, with more than half the adult population overweight or obese (NICE, 2006). The UK is experiencing this unwelcome growth with an increase of 58% to 65% of men categorised as obese, and 49% to 58% of women, over the decade until 2011 (Health and Social Care Information Centre, 2013), a rate higher than almost all other developed countries (Obesity and the Economics of Prevention, 2010). If this trend continues, nine in ten adults are projected to be overweight or obese by 2050 (Department of Health, 2009).

Obesity appears responsible for more than 2.8 million global deaths annually due to the increased prevalence of related co-morbidities, such as Type 2 diabetes, hypertension, heart disease, stroke, and some cancers and depression (The International Association for the Study of Obesity, 2002). Given the now extensive data demonstrating morbid obesity's association with premature mortality (Engeland, Tretli, & Bjørge, 2004; Brown et al., 2009; Lavie, Milani, & Ventura, 2009) and these diverse co-morbidities, the cost to both patients and society is substantial (Brown et al., 2009; Muller-Riemenschneider et al., 2008). Estimates indicate that the cost of treating co-morbid conditions associated with obesity exceeded £4.2bn in 2007 and is anticipated to double by mid-century (The Department of Health, 2011). Such pressures require radical action and bariatric (surgical weight loss) surgery is now integral in addressing morbid/severe obesity in adults who have engaged fully in a structured weight loss programme and who have tried to sustain evidence-based, non-invasive measures without success (NICE, 2006).

2.2 Bariatric Surgery

Bariatric surgery encompasses surgical procedures explicitly tailored to effect weight loss, and include procedures that are ‘restrictive’ (reducing the size of the upper gastrointestinal tract, thus limiting food intake), ‘malabsorptive’ (bypassing some of the small intestine, thus limiting absorption of calories), or combination procedures (which combine restriction of the upper food pathway with intestinal bypass) (Dent et al., 2010). At present, bariatric surgery provides the best probability of achieving sustained weight loss (Padwal et al., 2011; Sjostrom et al., 2007) and it is directed to mitigate co-morbid medical problems (Kaly et al., 2008; Munoz et al., 2007) and enhance health-related quality of life (Karlsson et al., 2007; Helmio et al., 2011). It appears particularly effective in improving physical, psychological, and social concerns (Chang et al., 2010), with specific improvements in co-morbidities, such as diabetes, sleep apnoea and cardiovascular problems.

Whilst the biomedical sequelae of these procedures are extensively documented, the psychosocial impact of bariatric surgery and subsequent changes in patients’ quality of life has been less systematically examined (Dixon et al., 2009). Circumscribed studies undertaken suggest substantial improvement in social and sexual functioning, employment, active lifestyle, attitudes towards body weight and shape, and normalisation of body image (Fine & Colditz, 1999; Pecori et al., 2007; Ballantyne, 2003; Kinzl et al., 2003). However, these reports of improved quality of life appear to neglect a significant and potentially detrimental outcome, the presence of excessive skin, and flaccid soft tissue (Sarwar et al., 2008). Since many obese individuals opt for surgery for aesthetic as well as medical reasons, the presence of residual tissue post-surgery may compromise and undermine other gains, notably body image perception, and sexuality (Hafner et al., 1991; Kinzl et al., 2003).

Excess skin may not only limit physical and social activities, create hygiene problems, potentiate skin infections, and adversely affect self esteem, mood and body image (Kinzl et al., 2003) but it may also compromise intimate relationships in which physical exposure to partners is avoided (Highton, Ekwobi, & Rose, 2012). Such residual skin may also militate against benefits of bariatric surgery, diminishing psychosocial

wellbeing in the months and years post-surgery (Magdalena et al., 2011). Consequently, reconstructive surgery is advocated to help address these difficulties.

2.3 Body Contouring

Reconstructive surgery, also known as body contouring, comprises surgical procedures that aim to eliminate and/or reduce residual excess skin and fat after dramatic weight loss. This appears important given that more than two thirds of patients who have undergone bariatric surgery consider excess skin to be a negative consequence of surgery, and these feelings are magnified if weight loss is massive (Kinzl et al., 2006). Indeed residual body dissatisfaction prompts almost three quarters of patients to seek body contouring procedures (Kitzinger et al., 2011) with improvements noted in personal hygiene, skin irritation, and neck and abdominal pain (Coriddi et al., 2011).

By contrast, less empirical attention has been devoted to the psychosocial factors associated with undergoing body contouring procedures (Sarwer et al., 2006). There is some suggestion that ambivalence regarding body satisfaction remains after contouring surgery with continuing negative self-scrutiny, and dissatisfaction with remaining unsightly scarring, skin irregularities and residual deformities in body shape (Sarwer et al., 2006; Mitchell et al., 2008). Some individuals, even with a good surgical result, may become hypercritical about mild asymmetries and report dissatisfaction with the outcome (Sarwer et al., 2006). Therefore, greater knowledge of these dimensions may aid better understanding of enhanced psychological wellbeing, functional ability, and inform provision of supportive interventions (Warner et al., 2009).

One previous review, undertaken in 2010, examined studies that assessed the impact of reconstructive surgery on quality of life in massive weight loss patients and their expressed dissatisfaction (Gilmartin, 2011). However, with an exclusive focus on global quality of life and the development of patient pathways, this review appears to have omitted examination of more nuanced psychological factors, such as self-esteem, body image, depression, anxiety and self-loathing which may be important in this population. The review was also imprecise about its definition of quality of life, included studies (e.g. Au et al., 2008; De Kerviler et al., 2009; Mustoe, 2006) with a predominantly medical focus, and was reliant on retrospective data gleaned from chart

review and case series, recorded for clinical rather than research reasons and is unlikely to yield psychologically rich data. Indeed, little focused attention is given to the psychological issues associated with body contouring, with only a cursory note to further examine body image, self-esteem and psychological morbidity.

2.4 Aims

Given the exclusive focus on quality of life in previous reviews and significant methodological limitations, the current review aimed to critically examine quantitative studies that investigated more nuanced psychosocial outcomes in massive weight loss bariatric surgery patients who have undergone body contouring surgery.

3. Method

3.1 Search Terms

A systematic search process underpinned the scrutiny of available literature, with an initial scoping and article search undertaken to contextualise the focus of research and elicit salient search strings. The search was narrowed to studies that focused on the psychosocial factors associated with body contouring surgery in massive weight loss bariatric surgery patients because initial searches on body contouring alone elicited articles predominantly reflecting medical issues and outcomes. A review of quantitative studies was selected to examine objective measurement of psychosocial variables.

3.2 Identification of Papers

Searches of the following internet sites and databases: SCOPUS, Medline, PubMed, SpringerLink, Ovid (Sp) PsychINFO, The Cochrane Library, Google Scholar and PsycArticles were conducted in September 2013 and again in March 2014. Search terms and filters were generated specific to the questions being asked of the literature, and limited to peer-reviewed articles in English. Search terms included ‘psychosocial’, ‘quality of life’, ‘bariatric’, ‘obesity’, ‘reconstructive’ ‘surgery’, ‘contouring’, ‘plastic’, ‘gastric’ and ‘abdominoplasty’(A full list of search terms can be found in Appendix A). Given the paucity of quantitative research found in the search, there was no exclusion placed on the sampling timeframe for studies. The earliest relevant papers retrieved from the searched databases can be found in table 1 below and dated back to 1991 only, indicating that this is a relatively new and under researched area.

Table 1: Earliest date of relevant articles retrieved

Date:	Database
SCOPUS	No relevant papers found
Medline	No relevant papers found
PubMed	1991
SpringerLink,	1992
PsychINFO,	2006
Cochrane Library	No relevant papers found
Google Scholar	1998
PsycArticles	No relevant papers found

3.3 Identifying eligible papers

The process underlying paper identification is outlined in Figure 1. Scanning titles and abstracts revealed 235 potentially eligible papers. After removing duplicates, non-English language papers, and screening of abstracts, 32 articles remained. These texts were accessed in full and their reference lists were searched for any relevant publications that did not appear in the initial database searches. A further 22 were excluded (see Fig 1) after applying the inclusion and exclusion criteria (Appendix B)

3.4 Inclusion/Exclusion Criteria

Articles were included if they were: peer reviewed quantitative publications, reported on adults (>18years) having undergone at least one body contouring surgical procedure after bariatric surgery, and utilised at least one questionnaire or structured interview examining psychosocial factors. Papers were included if medical issues/outcomes were examined but where psychosocial issues were also independently analysed.

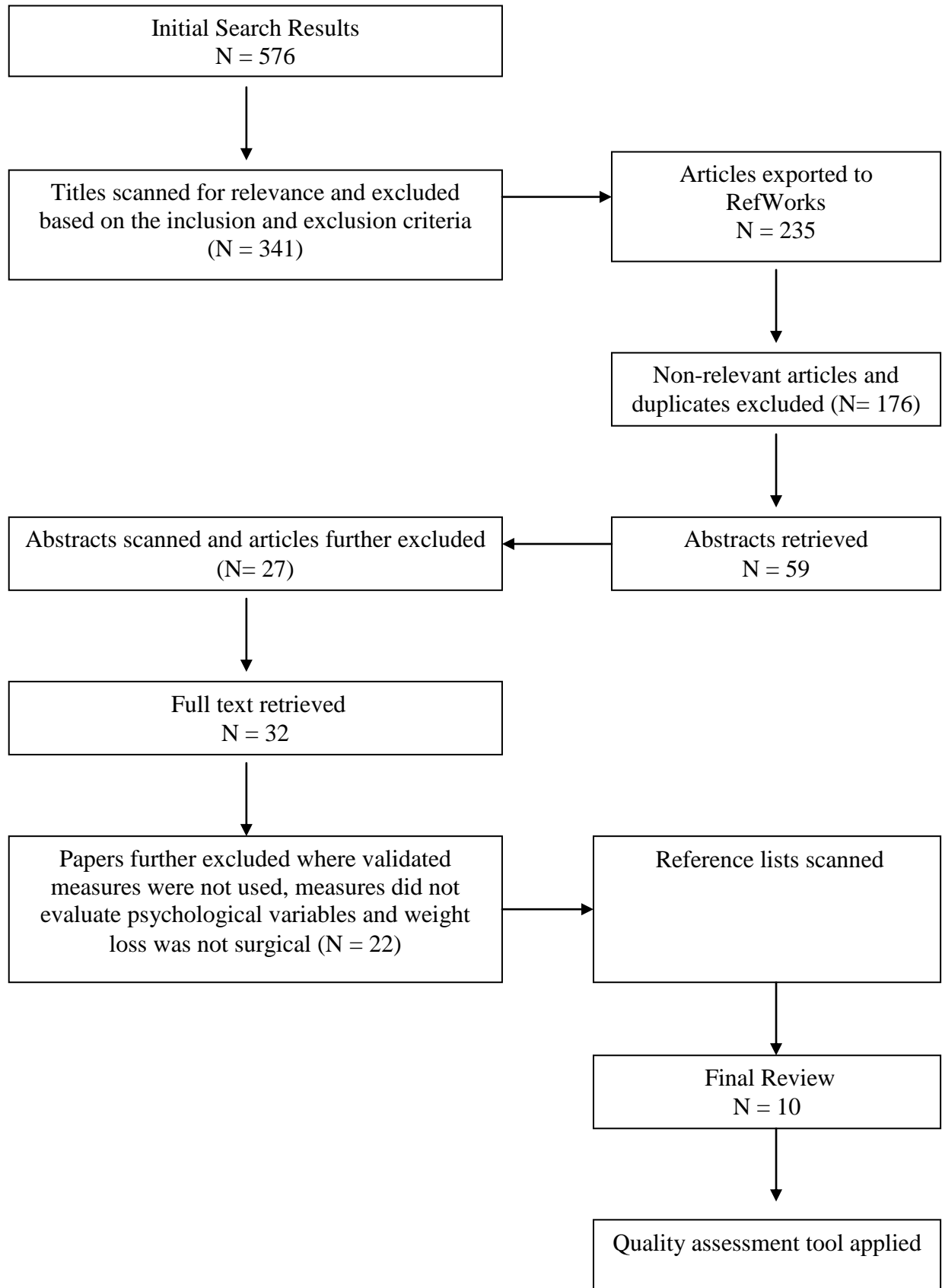
Conference papers, opinions, or reviews were excluded, as were papers in which psychosocial/psychological factors were not quantitatively measured, or in which participants obtained weight loss through non-surgical procedures. A total of ten papers were thus deemed eligible.

3.5 Data Extraction and Quality Appraisal

Data were extracted using a data extraction form (Appendix C), which is based on the Centre for Reviews and Disseminations (CRDs) guidance for undertaking reviews in health care (2008).

The methodological characteristics and the quality of eligible studies were independently appraised using the ‘Strengthening the Reporting of Observational Studies in Epidemiology’ STROBE checklist (Von Elm et al., 2008) (Appendix D). The STROBE encompasses twenty-two items to ensure the rigorous and scientific reporting of empirical research, and the checklist was utilised to assure bias evaluation and quality assessment across the studies. Key features of each paper (e.g. aims, design, procedure, sample, outcomes measured, analysis and results) were extracted and are summarised (see Table 1). To address reliability and validity, the research supervisor independently coded all articles. Discrepancies were few and were resolved through discussion to achieve consensus. There was total agreement between the trainee and the supervisor concerning the included papers in this review.

Figure 1: Article selection process



4 Results

4.1 Study characteristics

The main characteristics of the ten studies are included in Table 1. All papers reported psychosocial outcomes for participants who had undergone both surgical weight loss and body contouring surgery. No U.K based studies were found, the majority being undertaken in Europe or North America. Each study's demographic information and recruitment procedures can be found in Table 2.

Three studies (van Der Beek et al., 2010; Mitchell et al., 2008; Lazar et al., 2009) used a retrospective design, and seven studies used a retrospective and/or prospective approach (Singh et al., 2012; Modaarressi et al., 2013; Stuerz et al., 2008; Koller et al., 2013; Song et al., 2006; Cintra et al., 2008; Pecori et al., 2007). Sample sizes, mean age ranges and percentage of male/female participants can be found in Table 2.

4.2 Measures and Methodology

The ten studies used diverse questionnaires, possibly revealing the lack of valid and reliable measures specific to psychological/psychosocial constructs in this population, or reflecting a poorness of fit with the phenomena under scrutiny. The methodological characteristics of each study are presented in Table 2.

Table 2: Study Characteristics

Title, Author, Year & Location	Aims	Participants (Number, age, gender, ethnicity, recruitment):	Measures & Methodology	Analysis	Conclusions & Limitations
Mental & physical impact of body contouring procedures on post-bariatric surgery patients. (Singh et al., 2012). USA	Investigated mental & physical changes in QoL ¹ after body contouring.	<p>104 participants</p> <p><u>Group one</u> = control group of normal population (n=27), 21 females, 36 ± 11.4 mean age, 23.6 ± 2.6 mean BMI m²</p> <p><u>Group two</u> = obese patients prior to bariatric surgery (n=30), 27 females, 42 ± 11.3 mean age, 48.9 ± 7.2 mean BMI.</p> <p><u>Group three</u> = post-bariatric surgery</p>	<p>Prospective questionnaire survey.</p> <p>Short Form-36 Health Survey Version 2.0</p>	<p>Univariate Analysis of Variance & Gosset's independent two-tailed <i>t</i> test.</p>	<p>QoL improves after bariatric surgery & is similar to normal population.</p> <p>Mental component scales of the SF-36 were lower in the body contouring group & this group suffered from worsening inhibited social interactions.</p> <p>Body contoured group showed persistent dissatisfaction after surgery.</p>

		<p>patients with massive weight loss (n=31), 25 females, 45 ± 10.4 mean age, 32.2 ± 8.7 Mean BMI.</p> <p><u>Group four</u> = post bariatric surgery patients with at least one body contouring procedure (n=16), 12 females, 45 ± 9.1 mean age, 31.6 ± 7.4 mean BMI.</p> <p>Ethnicity: unknown</p>			<p><u>Limitations</u></p> <p>Small sample</p> <p>SF-36 not specific to weight loss patients or identifies particular sources of dissatisfaction.</p> <p>Did not establish if the post body contouring group wanted additional surgical procedures.</p> <p>Timing of questionnaire administration not disclosed.</p>
Psychosocial impact of abdominoplasty (Stuerz et al., 2008). Austria.	Examined body image, anxiety & depression in patients undergoing abdominoplasty after massive weight loss.	<p>34 participants (30 females) requesting abdominoplasty</p> <p>Control group = 26 gastric band patients</p>	<p>Prospective questionnaire survey</p> <p>Strauss & Appelts Questionnaire</p>	A repeated measures model analysis of variance (ANOVA) to test for	Post operative participants showed improvements in body image, attractiveness & self-confidence

		<p>who did not undergo body contouring.</p> <p>Ethnicity: unknown</p>	<p>The Life Satisfaction Questionnaire</p> <p>The Hospital Anxiety & Depression Scale (HADS)</p> <p>The authors' general questionnaire after surgery (finances, expectations, reasons, desire for any other plastic surgery, dealing with scars, satisfaction, effects on leisure activities, sexuality & inhibitions).</p> <p>Participants evaluated 1 day before & 3 & 12 months post-procedure.</p>	<p>differences.</p> <p>Mann-Whitney U test was used to test for intergroup differences</p> <p>Pearson's Chi-square test performed for nominal data</p>	<p>No significant differences in anxiety or depression.</p> <p>Improvements in sexual relationships, leisure activities, & avoidance of body exposure were noted.</p> <p>Patients reported a high satisfaction with cosmetic surgery & would undergo surgery again.</p> <p><u>Limitations</u></p> <p>Small sample size</p> <p>No comparison group, such as other cosmetic surgery patients, to investigate whether results could be</p>
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					generalised.
Plastic surgery after gastric bypass improves long-term quality of life (Modarressi et al., 2013). Switzerland.	Explored whether health-related quality of life (HRQoL ⁴) improved after body contouring.	<p>Group A (patients with RYGBP³ & body contouring): 98 patients (89.8% female; mean age 42.6 who had body contouring procedures after RYGBP.</p> <p>Group B (102 patients with RYGBP only): 81.4% female, mean age 38.6.</p> <p>Ethnicity: unknown</p>	<p>Prospective questionnaire survey</p> <p>Moorehead-Ardelt Questionnaire.</p> <p>In group A, HRQoL assessed before body contouring & six months (mean 26 months) after.</p> <p>In group B, HRQoL questionnaire administered once, 18 months to 8 years post RYGBP (mean = 24 months).</p>	Paired two-tailed Student's <i>t</i> test	<p>Body contouring significantly improved self-esteem, 85% said their self-esteem was “much better” compared to 48% after bariatric surgery alone.</p> <p>Little improvement in ability to work domain after weight loss with minimal change after contouring.</p> <p>Sexual activity only partially improved by contouring.</p> <p>Social life considerably improved after bariatric</p>

					<p>surgery & even more after contouring.</p> <p><u>Limitations</u></p> <p>The questionnaire has no normative data for people who have undergone body contouring.</p> <p>Unclear about precisely when & how questionnaire administered.</p>
<p>The impact of reconstructive procedures following bariatric surgery on individual well-being & quality of life (van Der Beek et al., 2010). The Netherlands.</p>	<p>Explored physical & psychosocial wellbeing & quality of life after reconstructive surgery following weight loss surgery.</p>	<p>43 participants (41 female) who underwent body contouring surgery.</p> <p>Mean age was 41.5 years (range 23 to 60 years).</p>	<p>Retrospective & prospective questionnaire survey</p> <p>The Obesity Psychosocial State Questionnaire (OPSQ, Zijlstra et al., 2008).</p>	<p>Student's <i>t</i> test & multivariate analysis used to analyse parametric variables</p> <p>Nominal</p>	<p>Reconstructive surgery led to significant improvements in quality of life irrespective of complications.</p> <p>Dissatisfied participants complained of post-operative contour</p>

		<p>Mean weight before bariatric procedure was 138.2 kg with a mean body mass index (BMI) of 48.2 kg/ m²</p> <p>40 participants (93%) underwent laparoscopic gastric banding (LAGB⁵); 3 participants underwent gastric bypass surgery.</p> <p>Unsatisfactory results or banding problems, led to 11 of the 40 LAGB participants undergoing gastric bypass surgery as a redo operation.</p>	<p>Preoperative quality of life was measured retrospectively (participants were asked to what extent the items on the OPSQ applied to them three months prior to the reconstructive surgery) using a Likert scale from 1 (almost never) to 5 (almost always).</p> <p>To assess difficulties of excess skin, participants were asked their primary motivation to seek body contouring surgery & rate their satisfaction with surgery results using Likert scale (very</p>	<p>variables analysed using a Pearson chi squared test.</p> <p>Regression analysis performed to determine factors influencing individual satisfaction.</p>	<p>deformities.</p> <p><u>Limitations</u></p> <p>Sample size was modest & predominantly had female sample with no comparison group.</p> <p>Pre-operative quality of life measured retrospectively, with potential bias.</p> <p>Some patients underwent more than one weight loss procedure, yet were included in the same group as those who had undergone only one, introducing potential bias</p>
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		Ethnicity: unknown	satisfied) to 4 (dissatisfied)		
Abdominoplasty after massive weight loss: Improvement of quality of life & psychological status (Lazar et al., 2009). France.	Investigated surgical & psychological outcomes in participants who underwent abdominoplasty after massive weight loss	40 participants (32 female). Median age before surgery was 38 years (range 21 to 58).	Retrospective questionnaire survey. Two different but non-validated quantitative scales designed specifically for this study. Data = collected after an average follow-up period of 57.7 months (range 41 to 80).	Data analysed using means, standard deviations & percentages.	65.5% reported that life without abdominoplasty would have been unacceptable & possibly responsible for a nervous breakdown & suicidal thoughts. Improvements in quality of life, psychological status, sexual relations, social functioning & family life reported. 39% underwent further contouring procedures <u>Limitations</u> Small sample size

					Use of unvalidated measures.
Quality of life after abdominoplasty in women after bariatric surgery (Cintra et al., 2008). Brazil.	Explored the impact of abdominal skin overhang on women's quality of life.	16 participants, all females, aged 40.1 ± 8.0 years who had undergone standard or combined circumferential abdominoplasty All had RYGBP surgery between 24 & 48 months before body contouring.	<p>Prospective interview survey</p> <p>Quality of life assessed using a semi-structured interview validated for Brazilian participants (The Adaptive Operationalised Diagnostic Scale - AODS).</p> <p>The interview was scheduled 1 to 3 years post surgery</p> <p>Standard abdominoplasty was performed in five patients (31.3%), & combined circumferential</p>	A paired two-tailed Student's t-test was used to compare BMI before & after the operation.	<p>Quality of life improved in most cases after body contouring.</p> <p><u>Limitations</u></p> <p>Reasons for adverse outcomes under-explored.</p> <p>Wide variation in when contouring procedures carried out, possibly biasing results.</p> <p>Participants underwent two different procedures & not evident how or if this influenced the results.</p> <p>Small sample size</p>

			abdominoplasty was carried out in the remaining cases.		precluded statistical analysis Sample contained only women
The desire for body contouring surgery after bariatric surgery (Mitchell et al., 2008). USA.	Explored whether contouring surgery or the desire for surgery impacted on body satisfaction.	70 respondents; all had had RYGB surgery 6 to 10 years previously. 97% Caucasian & 84.3% female. Mean age at follow-up = 49.9 ± 9.2 years & mean BMI at follow-up = 34.1 kg/ m^2 .	Prospective questionnaire survey Post Bariatric Surgery Appearance Questionnaire developed for study posted to 250 patients evaluating experiences with as well as desire for body contouring surgery & general body area satisfaction.	Data analysed using means & percentages.	33 respondents had had a total of 38 body contouring procedure. Most participants wanted body contouring surgery to some extent but those who had surgery were not all satisfied with the contoured areas, with many rating these areas from neutral to extremely unattractive. <u>Limitations</u> Low response rate & no control group data

					<p>Used a non-validated questionnaire that was developed specifically for their study.</p> <p>Participants who had had more than one reconstructive procedure were not differentiated from those who only had had one procedure or in fact from those who had desired it.</p> <p>All participants received bariatric surgery from one surgeon & this may have influenced the outcome.</p>
Quality of life & body image after circumferential body lifting of the lower	Evaluated psychological well-being before & after lower body lift	27 patients (25 females) who had undergone bariatric surgery in two Austrian Hospitals	Prospective questionnaire survey The World Health	Independent samples <i>t</i> tests performed to investigate	QoL significantly improved after Circumferential body lifting surgery,

trunk: A prospective clinical trial (Koller et al., 2013). Austria	surgery.	<p>were scheduled for circumferential body lifting of the lower trunk.</p> <p>Patients had lost 61kg on average through bariatric surgery.</p> <p>The mean weight was 71 kg with a mean height of 168 cm.</p> <p>Patients' aged 21 to 58 years (mean = 39.9, SD = 10.9), underwent body lift surgery between 2008 & 2010.</p> <p>Ethnicity Unknown</p>	<p>Organization Quality-Of-Life (WHOQOL)-BREF.</p> <p>Subjective body experience, body image & satisfaction assessed using the Body Appraisal Inventory (FBeK)</p> <p>Postal questionnaires completed twice: two weeks before & six months after the body lift operation.</p> <p>Patients randomised in group 1 (n=12) & group 2 (N = 15).</p> <p>During first interview, participants of group 1 answered the same</p>	<p>mean differences between group 1 & 2 at both measurement points.</p> <p>Paired <i>t</i> tests performed to evaluate the impact of body lifting surgery on psychological well-being in both groups.</p>	<p>specifically psychological health & social relationships.</p> <p>Contouring significantly improved aspects of body image. Attractiveness & self-confidence were greatly improved, but feelings of physical insecurity & uneasiness decreased significantly.</p> <p><u>Limitations</u></p> <p>Small, predominantly female sample.</p> <p>Ethnicity was not reported.</p> <p>Retrospective surveys used in group 1 which may biased the results</p>
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			<p>questions as group 2, but considered pre weight loss period.</p> <p>Patients in group 2 answered questions referring to their current life.</p> <p>No differences were made between the two groups post surgery</p>		since recall amongst participants may have differed.
Attitude of morbidly obese individuals to weight loss & body image following bariatric surgery & body contouring (Pecori et al., 2007). Italy.	Evaluated whether body contouring surgery improved body image & attitudes to body weight & shape after massive weight loss surgery.	<p><u>OB group</u>: 20 morbidly obese women undergoing biliopancreatic diversion (BPD) for obesity.</p> <p><u>POST group</u>: 20 consecutive women after BPD selected at</p>	<p>Prospective questionnaire survey.</p> <p>Participants completed the Body Uneasiness Test (BUT)</p> <p>Questionnaires were completed at the first bariatric or cosmetic</p>	<p>Differences between means analysed using the U-Mann-Whitney rank test for independent comparisons.</p> <p>Spearman</p>	<p>Body Uneasiness Test scores were markedly lower in participants who at long-term had a steady reduced body weight compared those observed in severely obese participants prior to BPD.</p> <p><u>Limitations</u></p>

		<p>second-year follow-up</p> <p><u>POST-A group</u>: 10 women at >2 years after BPD that asked for cosmetic surgery</p> <p><u>POST-B group</u>: 10 women at >2 following BPD* that had cosmetic surgery >1 year (13-22 months) before the study. In this group, participants had undergone 5 mastoplasties, 7 abdominoplasties, 8 leg &/or arm-lifts & 2 torsoplasties had been performed.</p> <p>Age range – 24 – 56</p>	<p>surgery visit (OB & POST-A groups, respectively) & at the time of the regular follow-up visit (POST & POST-B groups, respectively).</p>	<p>correlation used to analyse relationship between data.</p>	<p>The phenomenon presented could be simply a chance finding.</p> <p>Sample size was small.</p> <p>Participants had different reconstructive procedures, which may have influenced the results.</p> <p>Group B underwent one or more procedures & no differentiation was made between those who underwent one procedure compared to those who had multiple.</p>
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		Ethnicity Unknown			
Body image & quality of life in post massive weight loss body contouring individuals (Song, et al., 2006). USA.	Explore how body contouring impacts on self perception, appearance & body ideals.	<p>18 participants (16 women) who had undergone bariatric surgery & body contouring.</p> <p>All participants had bariatric surgery >12 months prior & been scheduled for body contouring.</p> <p>The mean age was 46 ± 10 years.</p> <p>Participants had lost a mean 138 ± 76 lbs before body contouring.</p> <p>All patients underwent abdominal contouring</p>	<p>Prospective & retrospective questionnaire survey</p> <p>Pre-operative quality of life was measured retrospectively.</p> <p>Participants completed questionnaires pre-body contouring, 3 & 13-month post surgery.</p> <p>Thirteen of these further completed 6-month questionnaires.</p> <p>Body perception was studied using the Pictorial Body Image Assessment (PBIA), a modified</p>	<p>Statistical testing was performed using Student's <i>t</i> test & ANOVA.</p> <p>Post hoc analysis was performed with Student's <i>t</i> test.</p>	<p>Three validated questionnaires were used.</p> <p>Quality of life was significantly enhanced after body contouring & participants ascribed thinner silhouettes to both current appearance & ideal body image after three months follow up.</p> <p>Body image also improved with body contouring surgery.</p> <p>Mood remained stable over six months.</p> <p>Body contouring improved body image but</p>

		<p>procedure of panniculectomy or cosmetic abdominoplasty. Eleven patients underwent additional body contouring, including global body lift, breast reduction, & brachioplasty.</p> <p>Ethnicity Unknown</p>	<p>version of the Stunkard silhouette study (Stunkard et al., 1983 & Fallon et al., 1985). Participants completed this on the morning, at three & six months of body contouring procedure.</p> <p>Body Image & Satisfaction Assessment (BISA) was developed for the purpose of the study. Participants completed this on morning, at three & six months of their body contouring surgery & after</p> <p>Current Body Image</p>		<p>produced dissatisfaction with other parts of the body.</p> <p>Body contouring did not change self perception of appearance before massive weight loss, indicating a stable view of the former appearance</p> <p><u>Limitations</u></p> <p>Small, predominantly female sample size.</p> <p>Pre-operative quality of life was measured retrospectively.</p> <p>Ethnicity was not reported.</p>
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			<p>Assessment (CBIA) developed to assess areas of greatest distress, completed on the morning of surgery, & at three & six months after</p> <p>The Health-Related Quality-Of-Life (HRQOL) used to assess physical function, self-esteem, sexual function, physical distress, & work function, completed pre-weight loss, pre-body contouring & three months post -body contouring surgery.</p> <p>Post Bariatric Surgery Quality-Of-Life (PBSQOL) survey,</p>		<p>Some measures are not validated, such as BISA, CBIA & the Beck's Inventory was revised potentially impacting on the reliability of the questionnaire.</p> <p>Mood fluctuations not accounted for.</p> <p>No differentiation made between body contouring procedures & individuals who had undergone more than one procedure were grouped with those participants who had undergone only one procedure.</p>
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			<p>developed to address quality-of-life measurements condition specific to post bariatric weight-loss population. Completed three months post body contouring surgery.</p> <p>Revised version of Beck's Depression Inventory used to assess mood & completed pre weight loss, pre body contouring & three months post body contouring surgery.</p>		
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¹ QOL = Quality of Life ² BMI = Body Mass Index ³ RYGB = Roux-en-Y gastric bypass ⁴ HRQoL = Health Related Quality Of Life
⁵ LAGB = Laparoscopic adjustable gastric banding

All ten studies explored quality of life but only four studies (Stuerz et al., 2008; Koller et al., 2013; Pecori, 2007; Song et al., 2006) investigated body image; only one study (Stuerz et al., 2008) further explored anxiety, and two studies (Song et al., 2006; Stuerz et al., 2008) investigated depression. Stuerz et al. (2008) also explored feelings of attractiveness, surgery expectations, and reasons for any other plastic surgery and dealing with scars, effects on leisure activities, sexuality and inhibitions. Parameters of samples were poorly described with only one study (Mitchell et al., 2008) reporting ethnicity. With predominantly female samples in all studies, men were under-represented and Cintra et al.'s. (2009) sample consisted of females only, compromising generalisability and possibly reflecting gender differences in those seeking and undergoing body contouring.

4.3 Psychological Morbidity

Of the studies that explicitly examined psychological morbidity, Stuerz et al. (2008) and Song et al. (2006) found no statistically significant differences in anxiety or depression between those undergoing contouring and those not. In a more indirect assessment of mood using the Obesity Psychological State Questionnaire, van Der Beek et al. (2010) found that participants were less depressed, were more satisfied with their physical appearance, had more self-confidence and experienced fewer problems with intimacy after body contouring.

4.4 Quality of Life

Findings regarding patients' quality of life appeared equivocal. Whilst Singh et al. (2012) found that the normal population and bariatric surgery groups reported significantly higher quality of life scores compared with individuals who were obese, body contoured patients reported significantly higher quality of life scores compared to the obese group, but not when compared to the bariatric surgery group. Indeed, the contoured group's scores suggested that they experienced limitations in usual activities due to emotional problems. Enhanced quality of life was revealed by Modarressi et al. (2013) after body contouring surgery, with 65% of participants rating their quality of life as "better" and Koller et al. (2009) too reported that these procedures led to significant improvements in global quality of life, as well as on specific psychological, social and environmental factors. Significant benefits to life quality were also revealed by van Der Beek et al. (2010), and Lazar et al. (2009) noting quality of life improved in 84.6% of participants and 65.4% felt good. However, both have

methodological limitations: the latter using unvalidated questionnaires and the former study obtaining retrospective data from a questionnaire with no normative data for body contouring patients. By contrast, Song et al. (2006) showed that although bariatric surgery improved quality of life as measured on the HRQOL/SF-36, body contouring did not result in significant improvements at three or six months. Yet the scores from their Post Bariatric Surgery Quality of Life (PBSQOL) questionnaire showed body contouring improved quality of life significantly. These results should be cautiously interpreted since validity and reliability of the measures are questionable given the HRQOL/SF-36 is neither specific to weight loss surgery nor body contoured patients; and the PBSQOL was developed specifically for their study.

4.5 Body Image

Findings regarding the role of body image also appear equivocal. Koller et al. (2009) found that weight loss alone improved body image, and body contouring surgery further significantly improved body image. Support is offered by Cintra et al. (2008) with 87.5% of their participants reporting improved self-image after body contouring surgery. However, Pecori et al. (2007) found that the body contoured group were little different to individuals who were two years post-bariatric surgery without body contouring. Stuerz et al. (2008) found that there were significant improvements in attractiveness/self esteem for body image in the contoured group, however, they also found that the control group's scores first decreased and then rose at the second follow-up, suggesting that improvements in body image may occur as a result of the original bariatric surgery rather than subsequent body contouring.

Whilst some studies noted high levels of satisfaction post-contouring, (Cintra et al., 2008, who found that 93.8% of their participants were happy with their new body), some individuals remained dissatisfied despite successful removal of excess skin and fat. van Der Beek et al. (2010) found that 18.6% of their participants were not satisfied with the proportions of their body, and Lazar et al. (2009) found that 11.5% disliked their new body after body contouring, with many rating these at best neutral to extremely unattractive.

Other studies offer more ambiguous findings, for example, in the study by Song et al (2006) they reported significantly improved self-perception after contouring with individuals

assessing body shape and appearance as significantly smaller than their pre-contouring state. These authors also found that body image satisfaction improved significantly at three months post contouring and remained stable at six months. However, despite these findings, Song et al. (2006) noted that patients reported dissatisfaction with other parts of their body, notably hips/outer thighs (46%), medial thighs (38%), and flanks (31%) and there was an increase in arms, back, and buttocks being reported as areas of distress. At six months after contouring, medial thigh (54%) flanks (36%), and hips/outer thighs (27%) remained the top three named areas of distress.

4.6 Other Psychosocial Dimensions

Of the studies that examined other psychosocial constructs, general life satisfaction showed no significant difference after body contouring surgery (Stuerz et al., 2008), yet measures of social life and work capability showed improvements (Modarressi et al., 2013). No differences were found when examining socio-demographic and self-rated attractiveness between contoured and non-contoured participants, even though 80% of participants reported the primary rationale for surgery was to enhance attractiveness (Stuerz et al., 2008). However, by contrast, Koller et al. (2009) found that feelings of attractiveness and self confidence improved greatly after body contouring surgery and ratings of insecurity and uneasiness decreased significantly. Stuerz et al. (2008) also noted that at the second follow-up, over a quarter (26%) of participants had undergone a second cosmetic procedure and the majority (87.5%) reported that abdominoplasty (first intervention) had intensified their desire to undergo further procedures.

Only two studies explicitly explored whether body contouring affected intimate relationships. Cintra et al. (2008) found that 68.8% of their participants noticed that they enjoyed a better sexual life, whereas, Modarressi et al. (2013) reported only 38% reported improvements in sexual activity.

4.7 Methodological Issues

4.7.1 Sample Size:

All included studies have significant methodological frailties. Seven (Stuerz et al., 2008; van der Beek et al., 2010; Lazar et al., 2009; Cintra et al., 2008; Pecori et al., 2007; Koller et al., 2013; Song et al., 2006) reported on small, self-selected volunteer samples, compromising generalisability. Power of studies is reported in only one study (Singh et al., 2012), its form (a priori or post hoc) is not specified, and the study is acknowledged to be underpowered reducing the likelihood of finding statistically significant differences.

4.7.2 Assessment & Recruitment

Nine studies used questionnaires and one study (Cintra et al., 2008) employed a semi-structured interview, however most of the questionnaires were not specific to post-surgical status nor did they have normative data for patients who had undergone body contouring surgery. Generic quality of life measures tended to be utilised, particularly the SF-36 (Singh et al., 2012), which does not yield information about specific sources of dissatisfaction in relation to weight loss/body contouring, losing opportunity to focus on salient domains. Two studies (Lazar et al., 2009; Mitchell et al., 2008) used only unvalidated measures developed specifically for their studies whilst Song et al. (2006) and Stuerz et al. (2008) incorporated unvalidated questionnaire(s), potentially introducing reliability and validity bias. Only five studies reported recruitment procedures in detail, reducing transparency and opportunity to replicate. In only two studies (Stuerz et al., 2008; Mitchell et al., 2008) was participants' desire for body contouring established, an omission since motivation is likely to influence responses.

4.7.3 Methodology & Design

Assessment of the impact and the role of psychological factors were confounded by varying application of inclusion criteria for samples: some studies included individuals with no history of body contouring surgery whilst others included individuals having had one or more procedures. Seven studies (Song et al., 2006; Mitchell et al., 2008; Pecori et al., 2007; Lazar et al., 2009; van der Beek et al., 2010; Cintra et al., 2008; Moderressi et al., 2013) grouped

participants irrespective of contouring procedure number and analysed data as one sample irrespective of procedure type (as diverse as mastoplasty and abdominoplasty). Two studies (Singh et al., 2013; Koller et al., 2013) failed to describe type or number of procedures undertaken. Such diversity between studies makes comparability difficult and questions over generalisability remain since contouring of some body areas may have different salience for patients which may well engender different outcomes.

4.7.4 Assessment Timeframes

Time of assessment administration differed across studies. Neither, Singh et al. (2013) nor Lazar et al. (2009) disclosed specific time points for assessment. Moderressi et al. (2013) offered nebulous time points as ‘before’ and ‘at least six months’ after body contouring, as did Pecori and colleagues (2007) describing assessments as taking place at ‘routine follow up visits’. Cintra et al. (2008) also reported imprecise time points, with reported measurement point being ‘one to three years’ after body contouring surgery with no pre-assessment times stated. van Der Beek et al. (2010) administered their measures at three months post body contouring surgery again without stating timing of pre-assessments, Stuerz et al. (2008) administered measures one day before and three and twelve months after body contouring surgery, and Koller et al. (2013) assessed participants two weeks before and six months after body contouring.

Administration of questionnaires also differed, some undertaking face to face interviews whilst others used postal means, such as, Mitchell et al. (2008) posting questionnaires to individuals who had previously undergone bariatric surgery six to ten years previously. By contrast, Song et al.’s. (2006) sample completed most pre-surgery measures face to face on the morning of the surgery and three and six months later. Yet participants’ perception of quality of life may have changed across time from surgery and in none of the studies were any changes in personal or social circumstances explicitly reported as potential confounds.

Participants interviewed immediately prior to surgery may have been anxious and pre-occupied about surgical procedures, responding differently to those several years post-surgery. Individuals completing questionnaires face to face may understandably have felt anxious, compared to people completing postal questionnaires in the comfort of their own

homes. Such discrepancies amongst these make comparability extremely difficult and also question the methodological robustness and rigour of these studies.

5. Discussion

The purpose of the current review was to critically examine published studies that investigated the psychosocial impact of body contouring procedures after bariatric surgery. Whilst a previous review (Gilmartin, 2011) explored QoL after body contouring, the current review is the first to have examined more diverse psychosocial factors salient to those undergoing what might be construed as cosmetic procedures. No UK based studies were found, which may well reflect the absence of body contouring procedures routinely permitted in the NHS. At present, there is no standardised guidance for the provision of body contouring post massive weight loss in England and there is much variability in Primary Care Trusts in relation to whether or what surgery is available (Butler et al., 2009).

5.1 Equivocal nature of findings

Whilst there is some evidence that body contouring can effect positive change and reduce psychological morbidity in patients with excessive skin after massive weight loss, given the number of methodological limitations (see results and below), findings should be viewed tentatively.

Findings from the ten studies were contradictory, with some suggesting that body contouring improved psychosocial outcomes such as QoL, and others reporting no improvements. Some even suggested that body contouring was associated with worsened social interactions (Singh et al., 2012). Attractiveness after body contouring was explored by Stuerz et al. (2008) who found that individuals who underwent body contouring felt no more attractive than massive weight loss patients who did not undergo body contouring, however, they reported self-esteem regarding body image improved, whereas other studies, such as Sarwar et al. (2002) found no such changes.

Depression and anxiety, which are often seen as key clinical variables in assessing psychological morbidity, received little attention in the studies reviewed. Two studies (Stuerz et al., 2008; Song et al., 2006) found no differences in reported anxiety and depression between contoured and non-contoured patients, whereas van Der Beek et al. (2010) found that patients experienced fewer depressive symptoms after body contouring. Self-esteem was little explored, with only one study (Modarressi et al., 2013) reporting

improvements in self-esteem, and whilst they also noted improvements in social life, there were no improvements in 'work ability' after contouring surgery.

Body image is an important but under-researched construct in the body contouring literature because despite successful weight loss following bariatric surgery, an individual's body image and psychological state may deteriorate because of the excess skin left following massive weight loss (Magdalena et al., 2011). Some argue that weight loss alone does not lead to long-term improvements in body image and improvements in attractiveness and self-confidence are often seen after body contouring (Koller et al., 2013). However, findings regarding body image after contouring appeared ambiguous: Song et al. (2006) found that body contouring surgery improved body image satisfaction but Pecori. (2007) found no such improvements and Cintra et al. (2008); van Der Beek et al. (2010) found that not all individuals were satisfied with the results.

5.2 Limitations

That only ten papers of sufficient quality were elicited despite systematic search procedures appears to reflect the dearth of rigorous research examining psychosocial consequences of contouring literature. Common weaknesses of the studies included small and possibly underpowered sample sizes, the use of unvalidated measures and retrospective and self-report data. Questions remain regarding the adequacy and appropriateness of the assessment tools used in these studies since most were global, general and lacked normative data specific to body contouring. Some studies implemented questionnaires specifically developed for their study and these may be flawed due to their untested psychometric properties.

Where studies examined satisfaction with the results of body contouring, none reported the underpinning reasons for positive or negative reactions, and none specifically measured satisfaction with contouring in relation to a key determinant such as patient expectations. Thus the review has revealed a very circumscribed evidence base with great heterogeneity in studies and numerous psychological constructs adopted, often with unclear theoretical underpinnings, making opportunity for comparisons across studies challenging.

5.3 Clinical Implications

Given the significant methodological weaknesses of studies elicited for the review, challenges for synthesis and equivocal findings, it is difficult to offer clear clinical guidance. However some tentative conclusions are offered.

Individuals are often faced with excess skin after massive weight loss, which they find difficult to accept (Song et al., 2006) and their body may become a source of deep shame and humiliation (Lazar et al., 2009). A patient's quality of life may even deteriorate due to the functional and aesthetic impairments created by excess skin (Chandawarkar et al., 2006; Pecori et al., 2007).

Some individuals may become unhappy with other parts of their body after body contouring (Song et al., 2006), eliciting disappointment and adverse repercussions on quality of life (Modolin et al., 2005; Heitman et al., 2007; Anonymous, 2006). Individuals appear unprepared for extensive scarring and residual disproportion in body areas which are not contoured and preoperative assessment, preparation expectation management appears paramount (Chandawarker, 2006; Steffen et al., 2012; Kitzinger et al., 2012). It is possible that body contouring surgery following bariatric surgery is viewed as a cosmetic adjunct to bariatric surgery (van Der Beek, 2010) rather than an essential element in the treatment and pathway of bariatric surgery.

5.4 Future Research & Directions

Skin deformities resulting from massive weight loss continue to be associated with physical and psychological difficulties (Costa et al., 2004; Petty et al., 1992; von Soest, 2006) yet few studies have examined psychological status robustly after contouring surgery (Song et al., 2006; Klassen et al., 1998; Rhomberg et al., 2002). More rigorous research should prospectively examine the impact of excess skin and body contouring surgery on an individual's psychosocial functioning and wellbeing. Research conducted pre-surgically could better explore the decision-making processes to undergo surgery and clarify expectations. Data derived from such work could shape eligibility decisions, intervene to modify risk factors and enhance information given for those at risk of psychological distress.

The use of valid and reliable measures of psychological state, together with comparison groups would provide important information about the experiences of this growing population (Sarwer et al., 2006), as would utilisation of psychological models and theories (notably related to body image evaluation) currently utilised for other cosmetic procedures.

5.5 Conclusion

Findings regarding the psychosocial outcome of body contouring are equivocal and conclusions can only be drawn cautiously. To date, there are no psychometrically robust measures available to assess the psychological status of individuals who undergo body contouring after massive weight loss and since obese individuals suffer from disturbed body image with decreased psychosocial functioning (Stunkard et al., 1961; Duncan et al., 2002), how much these parameters shift during the course of weight loss and body contouring is, as yet, unclear (Song et al., 2006).

Pecori et al. (2007) concluded that a “...*good physical and psychological outcome needs the collaboration of the plastic surgeon and the clinical psychologist*” (p.72) and Kinzinger et al., (2012) concluded that pre-operative patient education outlining realistic expectations with the help of psychologists is important. Research investigating the psychosocial impact of excess skin upon an individual’s psychological status and wellbeing and how this potentially influences the decision making process and outcome of body contouring surgery is needed.

5.6 Strengths and weaknesses of the Current Review

This is the first review to have focused specifically on the psychological consequences of undergoing body contouring surgery, applying rigorous inclusion criteria and quality appraisal tools to fully evaluate the evidence base. However, this review may be limited by the approach: key words used and inclusion/exclusion criteria may have overlooked potentially relevant material despite a systematic approach being employed. In selecting only papers written in English, there may have been a biased focus on Western populations.

The current review revealed a paucity of studies with a specific focus on the psychological outcomes of undergoing body contouring. Even those included studies are impoverished by their atheoretical position, and focus on satisfaction without considering more detailed

psychological underpinnings. There is considerable scope to enhance this evidence base using theory and methods from clinical and health psychology pertaining to body dysmorphia, eating disorders and the impact of visible difference to enhance our understanding of factors which might predict outcome and contribute to guidance on the value of such surgery and any additional psychological interventions.

Further prospective studies, underpinned by clear questions, precise sample definition, adequate sample sizes and appropriate comparator groups are required. The selection of appropriate tools could be informed by more detailed qualitative analyses of what is experienced before and after body contouring, and a metasynthesis of available data may be a useful first step to better understand the psychosocial benefits and drawbacks of contouring surgery.

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Section Two

Research Report

Examining self conscious emotions in post-bariatric surgery patients: Is shame predictive of psychological morbidity, impaired quality of life, body image disturbance and low self-esteem?

Examining self-conscious emotions in post-bariatric surgery patients: Is shame predictive of psychological morbidity, impaired quality of life, body image disturbance and low self-esteem?

1 Abstract

1.1 Introduction

Obesity rates in the UK are the highest in Europe and have increased dramatically over the past few years and weight loss surgery is increasingly indicated to induce and sustain weight loss, and help reduce physical and psychological co-morbidities. Shameful feelings have been found in eating disorders but this construct has not yet been explored in a post bariatric surgery population and thus this study examined shame in post bariatric surgery patients.

2.2 Method

Eighty post bariatric surgical patients completed several measures in this study. The constructs examined were internalized, externalized and body shame (independent variables) and anxiety and depression, self-esteem, quality of life and body image disturbance (dependent variables). Statistical analyses explored the prevalence, the relationships between independent and dependant variables and whether the independent variables predicted the variance in the dependent variables. Results were compared to clinical and non-clinical data where appropriate.

3.3 Results

Internalized and externalized shame, psychological morbidity, low self-esteem, impaired quality of life, and body image disturbance were significantly higher compared to community norms. Body shame was significantly elevated and participants reported 'problematic' levels of body image disturbance. Strong relationships were found between the independent and dependent variables and internalized shame was seen to be the strongest predictor of the variance in the dependant variables.

4.4 Discussion

Psychological approaches are not at present main components of post-bariatric surgery treatments, however, psychological assessment and interventions that address shame may help improve other psychological difficulties, such as low self-esteem, impaired quality of life, anxiety and depression and body image disturbance found in this population. Future research into trialling psychological interventions specifically targeting shame in this population would be helpful.

2 Introduction

2.1 Problem of Obesity

Obesity has more than doubled over the past three decades in the U.K, making it one of the fastest growing health problems. England is said to have the highest rate of obesity in Europe, with more than 60% of adults and one third of ten and eleven year olds overweight or obese (Zemaryalai & Abas, 2013). The Prospective Studies Collaboration (2009) found that a Body Mass Index (BMI) of 30 to 35 kg/m² reduces an individual's life expectancy by two to four years and a BMI greater than 40kg/m² by ten years. In 2010, one quarter of the UK population was classified as obese (The NHS Health and Social Care Information Centre, 2012) and statistics have shown that obesity has risen steadily from 13.2% in 1993 to 26.2% in 2010 and 16.4% to 26.1% for men and women respectively (The Health Survey for England, 2010).

Obesity increases the risk of developing a number of serious and potentially life-threatening diseases, including type II diabetes, cardiovascular disease and several cancers. It has been suggested that for every 1 cm increase in waist circumference in an adult obese individual, the risk of a cardiovascular disease increases by two percent (De Koning, Merchant, Pogue, & Anand, 2007). Substantial increases in morbid obesity have led to markedly decreased life expectancy, especially among young adults (Fontaine et al., 2003). A BMI of 30kg/m² or more has been found to increase an individual's death rate by 1.5 times and an increase of three times for individuals diagnosed as morbidly obese (Adams et al., 2006). Cost estimates of being overweight or obese in the UK were 16 billion in 2007 and a 50 billion per year by 2050 is forecasted if obesity is left unchecked (Foresight, 2007).

2.2 Psychological Correlates & Breadth of Impact

Obesity is linked with numerous psychosocial difficulties, not least anxiety and depression (Stunkard, Faith & Allison, 2003), body image disturbance (Dziuirowicz-Kozłowska et al., 2006; van Hout et al., 2008; Wadden et al., 2006), and impaired quality of life (Kolotkin, Meter & Williams, 2001). Demographic variables (such as age, gender, race, social class), social/environmental factors (notably societal pressure to be thin, history of teasing or discrimination, interpersonal relationships), weight history (age of onset of obesity, weight

fluctuation), cognitive factors (such as, body image dissatisfaction, self concept, global attributions toward life events) and eating/dieting behaviours (dietary restraint and binge eating) have also been associated with an elevated likelihood of obesity (Friedman & Brownell, 1995). The impact of obesity on body image is marked and overweight and obese women are at greater risk of body image dissatisfaction (Schwartz & Brownell, 2004) and childhood obesity appears to be associated with increased body image dissatisfaction (Cash et al., 2004; Schwartz & Brownell, 2004).

2.3 Weight Loss Surgery (Bariatric Surgery)

Interventions to address obesity have to date have incorporated medication, dietary and exercise regimes, and psychological interventions such as Cognitive Behavioural Therapy, but outcomes have been relatively poor (Buckwald & Orien, 2008; Santry, 2005). As a consequence of this and in the context of rising obesity levels, the NHS has increased its access to bariatric surgery (NICE, 2006), which at present, is seen as the treatment that is most likely to promote sustained weight loss (Padwal et al., 2011; Sjostrom et al., 2007) enhance health related quality of life (Karlsson et al., 2007; Helmio et al., 2011) and mitigate co-morbid medical problems (Kaly et al., 2008; Munoz et al., 2007).

More than 85% of the operations recorded in The United Kingdom National Bariatric Surgery Registry (NBSR, Wellbourne et al., 2011) were Roux-en-Y gastric bypass (RYGB, a small gastric pouch is created to restrict food intake) or gastric banding (placing a band with an inflatable inner collar around the upper stomach intended to slow consumption of food and thus reduce the amount of food consumed.) Other types of bariatric surgery include Sleeve gastrectomy (the stomach is reduced of its original size), Duodenal switch (also known as biliopancreatic diversion with duodenal switch and is composed of a restrictive and a malabsorptive aspect, Bilio-pancreatic diversion (part of the stomach is resected, creating a smaller stomach), and Gastric balloon (this is a non-surgical intervention where a balloon is fitted designed to induce weight loss by partially filling your stomach. Medical co-morbidities and mortality rates after bariatric surgery are reported to be low, for example, there were 1017 reported complications from a total of 6483 bariatric procedures undertaken, (NBSR, Wellbourne et al., 2011). These included: cardiovascular complications (n=35), acute renal failure (n=8), other abscess/infection/fever (n=21), fluid/electrolyte problems (n=19), gastric distension (n=2), pneumonia/atelectasis (n=21), urinary tract infection (n=7),

vomiting/poor intake (n=38), wound infection/breakdown (n=20) and unanticipated transfer to ITU (n=13) and unspecified complications (833). There were only seven deaths recorded in the entire United Kingdom National Bariatric Surgery Registry (NBSR, Wellbourne et al., 2011). There was zero mortality recorded for gastric banding, 0.22% mortality for gastric bypass and zero mortality from sleeve gastrectomy. Data from the United Kingdom (Hospital Episode Statistics data) found that the mortality from gastric bypass for 2000 - 2008 was 0.5%. In the United States, the Longitudinal Assessment of Bariatric Surgery Consortium (LABS, Flum et al., 2009) reported 0% mortality (0 / 1,198) for gastric banding, 0.2% (6 / 2,975) for laparoscopic gastric bypass and 2.3% (9 / 437) for open gastric bypass. The United States Centers of Excellence program published 0.14% overall mortality in 57,918 patients (Belle et al., 2008).

There is increasing evidence to suggest that bariatric surgery has significant benefits, however despite successful surgery (Odom et al., 2010), weight regain is also well documented (Dymek et al., 2002). Research suggests that 20% to 30% of people fail to achieve significant weight loss after bariatric surgery (Sarwer et al., 2004; Chen et al., 2009), with some patients returning to services for further dietetic or surgical input (Magro et al., 2008).

Factors associated with regaining weight have been more difficult to specify and appear to encompass both technical (surgically-related) and psychological factors (Petry et al., 2008). Yet identifying which are key predictive factors has proved elusive (Dixon et al. 2009) and research offers contradictory findings. Some studies report a positive association between substantive weight loss after bariatric surgery and quality of life and body image (Sarwer et al., 2010; Bracaglia et al., 2011; van Der Beek et al., 2010; Lazar et al., 2009; Cintra et al., 2008; Song et al., 2006), yet others reveal a negative relationship (Bocchieri et al., 2002; Herpertz et al., 2004; Sarwer et al., 2005; van Hout et al., 2006). Research on the psychological predictors of outcome in bariatric surgery remains inconsistent with poor consistency across studies (van Hout et al., 2005; Herpertz et al., 2004; Greenberg et al., 2005; Bocchieri et al., 2002), possibly reflecting a lack of standardised and appropriate measures for this population (Sarwer et al., 2010).

At present, applied inclusion/exclusion criteria for bariatric surgery varies greatly, and whilst NICE guidelines (NICE, 2006) heavily emphasise the use of psychological assessments to

help establish factors predictive of poorer outcome post-operatively, those factors are unspecified. One area that has received little attention in the literature is the contribution of shame in post-bariatric surgery individuals. Individuals who are clinically obese have been shown to disclose high levels of shame (Webb, 2000), and a higher prevalence of psychological difficulties compared to the general population (White et al., 2010) may be underpinned by experience of shame (Andrews et al., 2002; Fergus et al., 2010; Schoenleber et al., 2010; Swan, 2003).

2.4 *Shame*

Shame can be conceptualised as a self-conscious emotion, and is associated with diverse psychological difficulties (Okland et al., 2012), depression (Allan, Gilbert, & Goss, 1994; Andrews, Qian, & Valentine, 2002; Cheung, Gilbert, & Irons, 2004; Gilbert & Irons, 2004; Harder, Cutler, & Rockart, 1992; Tangney et al., 1992); social anxiety (Gilbert, 2000a); Body Dysmorphic Disorder (Veale, 2002); Post-Traumatic Stress Disorder (Leskela et al., 2002); alcohol and drug misuse (Cook, 1993); and dissociation (Irwin, 1998).

Feeling ashamed and being shamed by others are experienced as psychologically painful experiences and associated with social rejection (Goss & Allan, 2009), often involving beliefs that the self is defective or bad in some way, and/or that others are looking down on the self. These evaluations have been categorised as ‘internal’ and ‘external’ shame respectively. Internal shame privileges inner experiences, notably one’s own self-evaluation and the sense that the self is flawed, inferior, powerless and/or personally unattractive, often associated with intense self-criticism and self-hatred (Gilbert, 2002). External shame focuses on believing that ‘others’ look down on the self in some way, such as the negative beliefs one creates in the mind of ‘the other’ (Gilbert, 2002).

Presence and impact of shame has increasingly been examined in eating disorders (Goss & Alan, 2009; Keith, Gillanders & Simpson, 2009) revealing it to be elevated in this population (Frank, 1991; Burney & Irwin, 2000) and that variance in shame is predicted by negative interactions with peers and unhelpful thoughts regarding social isolation (Keith, Gillanders & Simpson, 2009). Although, the role of shame and self-criticism in individuals who are obese is sparse, circumscribed data suggests that obese individuals report levels of shame of a similar magnitude to others with diagnosed eating disorders, such as anorexia nervosa and

bulimia (Franks, 2011), and experience significantly higher levels of shame than those of normal weight (Van Vlierberghe & Braet, 2007).

To date the presence and potential role of shame has not been explored in post-bariatric surgery patients. However this population may be vulnerable given the origins of self-soothing behaviours, such as overeating, creating weight gain, and surgery can produce rapid and substantial weight loss leading to visible difference in the form of excess, flaccid skin (Magdalena et al., 2011). In a recent study, patients who rated improved body appearance as their most preferred outcome after bariatric surgery had significantly higher preoperative shame scores than those who rated health or physical fitness as their most preferred outcome (Okland et al., 2012).

2.5 Rationale for Project

Bariatric surgery is increasingly indicated to achieve significant weight loss, reduce co-morbid conditions, and improve quality of life (Ogden et al., 2006; Gould et al., 2006; Buchwald et al., 2004; van der Beek et al., 2010). However, to date, much of the literature appears to neglect the presence of excessive skin, and flaccid soft tissue (Sarwar et al., 2008) commonly left in bariatric patients after massive and drastic weight loss. Since many obese individuals opt for bariatric surgery for aesthetic as well as medical reasons, the presence of this residual tissue post-surgery may compromise and undermine the bariatric surgery gains, notably body image perception (Hafner et al., 1991), self esteem, mood (Kinzl et al., 2003), and intimate relationships (Highton, Ekwobi, & Rose, 2012).

Thus, residual skin may not only militate against benefits of bariatric surgery, diminishing psychosocial wellbeing (Magdalena et al., 2011) but it may also lead to self conscious emotions, such as shame, particularly body shame. Whilst circumscribed data suggests that obese individuals report similar levels of shame to others diagnosed with eating disorders, (Franks, 2011), and experience significantly higher levels of shame than those of normal weight (Van Vlierberghe & Braet, 2007), research investigating the prevalence and role of shame after bariatric surgery is absent from the literature. Research exploring this important phenomenon in a post bariatric surgery patient population is desperately needed and questions regarding the prevalence, the role and psychological impact, and what happen to these shameful feelings after bariatric surgery remain unexplored and unanswered.

Individuals who are unhappy and/or embarrassed with their body after bariatric surgery may experience a number of negative thoughts and feelings, for example, a belief that they are unattractive, undesirable, worthless, and defective in some way. Such individuals may become hypercritical about their appearance, judging and viewing themselves as flawed and/or inadequate, often leading to a depressed mood and psychological distress. Individuals who experience body shame may view their body as 'imperfect' and 'defective' and these feelings may well lead to embarrassment and disturbed body image, which in turn, may induce feelings of anxiety, depression, humiliation, disgust and worthlessness. Such thoughts and beliefs are likely to lead to low mood and passive/avoidance coping strategies and some may well become anxious when invited to social events and/or activities for fear that they may be judged and negatively evaluated.

Coping strategies may often include social isolation and/or ceasing activities or events that they previously enjoyed, such as swimming or other recreational activities. This may well lead to a decrease in an individual's self esteem and quality of life. Social isolation, depressed mood, negative thoughts and schemas, anxiety, low self esteem are also likely to further impair an individual's quality of life, which in turn, may promote further deterioration in an individual's psychological wellbeing and thus an individual may become trapped in a 'vicious cycle'. However, elevations in psychological morbidity may reflect a more enduring psychological vulnerability in bariatric surgery patients, potentially leading depressed individuals prone to shameful feelings. However, due to the paucity of studies in this area, questions regarding the importance of the relationship between these constructs remain unrequited.

Since shame has not yet been explored in patients who have undergone weight loss surgery, the current study aims to explore the prevalence of shame in this population and to what extent shame may be related to other psychological morbidities, such as depression, anxiety, self-esteem, quality of life and body image disturbance.

2.6 *Aims & Objectives*

The present study aimed to investigate:

- The extent of which psychological morbidity, low self-esteem, body image disturbance, and impaired quality of life is present and elevated in adults who have undergone weight loss surgery,
- The extent of which internal, external and body shame is present and elevated in adults who have undergone weight loss surgery,
- Whether relationships are evident between shame (internal, external and body shame) and psychological morbidity, low self-esteem, impaired quality of life, and body image disturbance,
- To further examine whether shame (internal, external and body shame) is predictive of the variance in psychological morbidity, low self-esteem, impaired quality of life, and body image disturbance using multiple regression analysis.

3 Method

3.1 Overview

This study employed a quantitative, cross-sectional, survey design. Questionnaires were issued postally to a volunteer sample of patients whose bariatric surgery had occurred at least 12 months previously. Independent variables comprised internal and external shame and ‘body shame’, and the dependent variables were anxiety, depression, self-esteem, body image disturbance and quality of life. Due to the exploratory nature of this study, patients undergoing all types of bariatric surgery were included.

3.2 Power Analysis

An *a priori* power analysis was undertaken to assess necessary sample size. Given that this research was investigating possible relationships between variables, Pearson correlations were planned for the analysis. 0.80 is considered a suitable value to demonstrate a large effect size, therefore reducing the chance of a Type II error (Cohen, 1992) and a significance level of 0.05 is most commonly identified as the standard to avoid a Type I error (Cohen, 1992). This type of study has not been undertaken before and given the limited research within this area, a putative medium effect size was opted for and when considering this effect size and significance criterion, the suggested sample size was 84 (correlation analysis, two tailed, 0.3 effect size and 0.8 power) and 80 (multiple regression, $\eta^2 = 0.13$, two tailed, three predictors, 0.8 power).

3.3 Ethical Considerations

This study gained ethical approval through the NHS Ethics Committee (Appendix E), and from the Research and Development Department (Appendix F) at the relevant acute trust (Midlands, UK) in which the research was conducted. Ethical considerations were integral to designing this research given that the study attempted to recruit potentially vulnerable participants (Appendix G). Patients were also informed that they could contact the Patient Information and Liaison Service if they wished to obtain independent advice about any aspect of this study.

3.4 Participant Identification & Selection

Patients who had undergone weight loss surgery were identified by a member of staff (Consultant Surgeons, Senior Specialist Dietician or Laparoscopic Nurse Specialist) from the Nutrition and Dietetic Department based at the acute trust. Participants were selected based on inclusion and exclusion criteria outlined below.

3.5 Inclusion Criteria

- Patients must have undergone weight loss surgery a minimum of 12 months prior to this study.
- Patients must give informed consent to participate in the study.
- Patients must be adults, aged 18 years and above.
- Patients must have a sufficient standard of English to be able to read and understand the information and the measures used, since many of the measures are not validated in languages other than English.

3.6 Participant Recruitment

From July 2013 to September 2013, participants were sent a letter, signed by their consultant surgeon introducing the study (Appendix H), with a study pack, comprising a patient information sheet (Appendix I), consent form (Appendix J), completing questionnaires sheet (Appendix K), demographic information sheet (Appendix L), six questionnaires, a debrief sheet (Appendix S), and a self addressed and postage paid envelope.

3.7 Procedure

All study packs contained a Participant Information Sheet explaining the study and instructions if choosing to participate (how to complete the consent form, demographic information sheet, and the questionnaires). The final item in the pack comprised a sheet providing the contact details for the researcher, Senior Dietician and the Specialist Laparoscopic Nurse should they wish to discuss anything further.

The instructions asked patients to read all provided information, and if they wished to participate, to take completed packs to their next outpatient appointment or to post the completed information directly to the researcher (using the self-addressed envelopes provided). Patients who did not attend outpatient clinics were provided with a self-addressed envelope to return their completed information directly to the researcher. To prevent patients being inadvertently re-contacted, a coloured label was placed on their file by a member of staff.

3.8 Measures

The measures for the current study comprised:

3.8.1 Shame

3.8.1.1 The Internalized Shame Scale (ISS; Cook, 1993) (Appendix M)

The ISS (Cook, 1993) is a self-report measure that evaluates the extent to which the negative affect of shame becomes magnified and internalized. Internal shame has been described as involving evaluations of the self as inadequate, with key components being self-devaluation and self-criticism (Gilbert & Proctor, 2006). The tool comprises 30 items assessing respondents' overall feelings of self-worth. Six of the items comprise a self-esteem subscale (ISS-E), and the remaining 24 comprise a total internalized shame score (score range 0 - 96). A score of >50 on the shame items indicate painful, possibly problematic, levels of shame and a score of >60 is indicative of extreme levels of shame. A score of <18 is considered indicative of low self-esteem (Cook, 1994). Literature has shown it has good construct validity and is a reliable measure of internal shame ($\alpha = .90$) (Rybak & Brown, 1996; Rosario & White, 2004).

3.8.1.2 Other as Shamer Scale (Goss, Gilbert & Allan, 1994). (Appendix N)

External shame was measured using the OAS (Goss, Gilbert & Allan, 1994), developed from Cook's (1994) Internalized Shame Scale (ISS). External shame has been described as involving negative feelings about the self that develop from experiencing others as critical and rejecting (Gilbert, 1998). The OAS has 18 items that reflect global judgments of how people think others see them; these are rated on a five-point scale indicating how often they

feel this way. Higher scores indicate higher levels of external shame (score range 0 - 72) with a score of >36 being in the clinical range. Evidence has shown it is a reliable measure with satisfactory internal consistency ($\alpha = .92$) (Goss et al., 1994). The OAS demonstrates convergent validity; it has a high correlation with a number of other measures of shame (Gilbert, 2000)

3.8.1.3 Experience of Shame Scale/Body Shame (ESS; Andrews, Qian, & Valentine, 2002).
(Appendix O)

Four items of this 25 item self-report measure were used to focus specifically on the frequency of body shame experiences over the past year using a four point Likert scale. The participant rated each item on how frequently they experience each situation, for example, *'have you ever felt ashamed of your body or any part of it'* from 1 (not at all) to 4 (very much), giving a total score between 4 and 16. High scores are indicative of body shame. Previous studies have shown good validity and reliability, with recent Cronbach's alpha of .94 (Sandquist, Grenyer, & Caputi, 2009).

3.8.2 Psychological Morbidity

3.8.2.1 Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983).
(Appendix P)

The HADS is a self-report questionnaire used extensively to measure symptoms of anxiety and depression. Two scales, each comprising seven items each, offer a four-statement response. Respondents choose the statement that best describes their feelings over the preceding week. Each item is scored 0 – 3, total range attaining 0 - 21, and high scores indicating more severity. Scores are calculated separately for each subscale and are interpreted as follows: 0 – 8, normal range; 9 – 10, mild anxiety/depression; 11 – 15, moderate anxiety/depression; 16 – 21, severe anxiety/depression. The HADS is well validated with construct validity found to have high internal consistency for anxiety and depression subscales (Moorey et al., 1991), with Cronbach's alpha values of 0.93, and 0.90 respectively in a sample of cancer patients (Moorey et al., 1991). Good test-retest reliability has also been found (Crawford, Henry, Crombie & Taylor, 2001; Snaith & Zigmond, 1994; Bjelland et al., 2002).

3.8.3 Body Image

3.8.3.1 Body Image Disturbance Questionnaire (BIDQ) (Cash, Melnyk, & Hrabosky, 2004). (Appendix Q)

This self-report measure was used to measure body image with items assessing concerns about appearance of some body parts, preoccupation with such concerns, and the effects on social functioning. It comprises seven items on which respondents respond 1 - 5 on a Likert scale. Cash and Grasso, (2005) advocate mean scores of 1.57 (SD, 0.60) for males, 1.81 (SD, 0.67) for females in the general population and thus a score greater than 2.17 for males and 2.48 for females is considered to indicate problematic levels of body image disturbance (Cash & Grasso, 2005). Five of the items have open-ended responses in which the patient can elaborate on answers to the question. The qualitative responses are used to enrich the Likert scale responses. This measure has been shown to have strong test-retest reliability of 0.80 to 0.92 with good internal consistency (Cash, Phillips, Santos & Hrabosky, 2004; Cash & Grasso, 2005; Partridge & Robertson, 2010).

3.8.4 Quality of life

3.8.4.1 Moorehead-Ardelt Quality of Life Questionnaire II (Moorehead-Ardelt, 2003) Appendix R)

The Moorehead-Ardelt Quality of Life Questionnaire II was originally developed as a disease-specific instrument to measure postoperative outcomes of self-perceived quality of life (QoL) in obese patients. It assesses five domains: self-esteem, physical well-being, social relationships, work, and sexuality on a scale of 1 to 10 with a rating of 1 being extremely low and 10 being extremely high. Scores >42 are indicative of good quality of life (Sauerland et al., 2009). It has been found useful, reliable and reproducible in numerous clinical trials in different countries (Moorehead et al., 2003).

3.9 Data Collection

Questionnaires were collected weekly from the University address by the researcher and from the acute trust's Nutrition and Dietetic Department. Questionnaires were stored securely at the University address, separate from any other identifiable information, such as the consent form. Data were extracted from the measures and inputted into a Statistical Package for the Social Sciences database (SPSS; Version 20) by the researcher.

3.10 Analysis

Data analysis was carried out using the Statistical Package for the Social Sciences database (SPSS; Version 20) by the researcher. After missing data were accounted for, frequency and descriptive analysis was undertaken on the demographic data. The presence of internal, external shame and body shame, psychological morbidity, self-esteem, body image disturbance, and quality of life were initially examined to assess to what extent they were elevated. Possible relationships between shame and outcome measures (anxiety, depression, self-esteem, body image disturbance and quality of life) were then investigated with multiple regression analysis carried out on any significant correlations to assess the predictive value of shame.

4 Results

4.1 Reliability

Cronbach's alpha (coefficient of internal consistency) was used to assess reliability of the measures, with a coefficient of 0.7 used as a criterion for adequacy of internal consistency (DeVellis, 2002). All of the measures yielded a coefficient above 0.7, suggesting good internal reliability (Appendix T).

4.2 Missing Data

Very few returned questionnaires had missing data ($n = 3$). One participant did not complete the 'Body Image Disturbance Questionnaire', one did not complete the 'Other As Shamer questionnaire' and one participant did not complete the 'ESS - Body Shame' questionnaire. Cases were only excluded when the data were missing for a specific analysis (cases excluded pairwise) and included when the necessary information was available. This was to ensure missing data within questionnaires did not bias statistical analyses.

4.3 Assessing Distribution

In order to assess for normality needed when using parametric tests, the following analyses were conducted; distribution of data using the Kolmogorov-Smirnov test, histograms, kurtosis and skewness, Normal Q-Q Plot and Detrended Normal Q-Q plots and the 5% trimmed means. The results of the Kolmogorov-Smirnov are presented in Appendix U. Assumptions of normality were met for all the measures except the depression subscale on the Hospital and Anxiety Depression Scale (HADS), which was positively skewed and transformed using a 'logarithm transformation', improving the level of normality. (Appendix U).

4.4 Demographic Information

Two hundred and sixty five questionnaire packs were posted to participants deemed eligible. A total of 83 questionnaire packs were returned, giving a return rate of 31.3%. Three packs were returned without any measures completed and thus 80 participants' data were used.

Participants' demographic characteristics are summarised in Table 1 below and were compared with The United Kingdom National Bariatric Surgery Registry (NBSR, Wellbourne et al., 2011).

The sample in the current study was predominantly female, comprising 66 females and 14 males and was consistent with the NBSR, in which the majority of those undergoing bariatric surgery are female. No regional demographic data are available at present for comparisons. Similar to the NBSR, the mean age in this study was 45.8 years (male) and 47.85 years (female). Ninety-five percent of the sample was white British, which does not concur with the region's ethnicity (2011 Census Statistic¹); however, the sample was representative of individuals undergoing bariatric surgery nationally (Wellbourne et al., 2011).

Surgical procedures undertaken were also largely consistent with national data. Gastric bypass surgery was the most commonly used procedure in this study, followed by sleeve gastrectomy and gastric banding respectively. Nationally, Roux-en-Y gastric bypass occurs more frequently than gastric band, followed by sleeve gastrectomy. Pre-and post-surgical weight data, co-morbid medical conditions and complications after surgery were also consistent with the NBSR. In summary, based on NBSR, the sample in this study was representative of patients undergoing bariatric surgery in the UK

Table 1: Demographic Characteristics

Variable	Total Sample (n=80)	Regional Non-Clinical Data	National UK Clinical Data (n = 6,483)
Age (years)			
<i>Male</i>			
Mean	51.57	-	45.8
Standard Deviation	7.93	-	-
<i>Female</i>			
Mean	47.85	-	43.5
Standard Deviation	7.86	-	-
Missing data	(n=1)	-	-
Gender			
Male	14 (17.5%)	162,884	1,292 (20%)
Female	66 (82.5%)	166,955	5,191 (80%)
Ethnicity			
White British (Caucasian)	76 (95%)	45.1%	4,989 (77%)
Mixed Ethnic Group	1 (1.3%)	3.5%	-
Asian/Asian British	2 (2.5%)	30.7%	128 (1.8%)
Black/African/Caribbean/Black British	1 (1.3%)	6.2%	153 (2.4%)
Other Ethnic Group	0	14.5%	1,119 (17.2%) (1.4%)
Unspecified	0	0	
Surgery Type		Regional Clinical Data 2000 – 2012²	2009 – 2010
Roux-en-Y gastric bypass	49 (61.3%)	294 (64.3%)	3,629 (55.9%)
Sleeve Gastrectomy	20 (25%)	101 (22.1%)	543 (8.4%)

Gastric Banding	10 (12.5%)	61 (13.4%)	2,131 (32.8%)
Revisional	1 (1.3%)	-	-
Gastric Balloon	0	-	112 (2.7%)
Other	0	1 (0.2%)	67 (4%)
Total Procedures	80	457	6,483
Time Since Surgery			
12-18 months	11 (13.8%)	-	-
18 months – 2 years	14 (17.5%)	-	-
More than 2 years	55 (68.8%)	-	-
Total	80	-	-
Mean Weight Prior to Bariatric Surgery (n= 78)	148.08 kg		142.08kg
Mean Weight Post Bariatric Surgery (n=79)	97.79 kg		-
Mean Weight Loss (kg)	50.29 kg (34%)		57.07%
Co-morbid Medical Conditions	Pre-Surgery	Post Surgery Improvements	Pre-Surgery Post Surgery Improvements
Present/Improvements	68 (85%)	63 (78.8%)	4,473 (69%) 4369 (67.4%)
Not Present/No Improvements	7 (8.8%)	11 (13.8%)	-
Missing data	5 (6.3%)	6 (7.5%)	-
Complications During/After Surgery			
Yes	31 (38.8%)		1660 (30%) (N=5528)
Missing data	5 (6.3%)		-

¹Data taken from Regional 2011 census

²Data obtained from Consultant General/Oesophagogastric Surgeon based at participant recruitment site

4.5 Prevalence of psychological morbidity, quality of life, self esteem and body image disturbance

4.5.1 Psychological Morbidity

The first primary research question aimed to explore the extent to which psychological morbidity, low self-esteem, impaired quality of life and body image disturbance were present (and potentially elevated) in adults who had undergone bariatric surgery. Mean scores and standard deviations for psychological morbidity (anxiety and depression) self-esteem, quality of life, and body image disturbance are presented in Table 2 along with comparable clinical and non-clinical data where appropriate. However, to date, there is no normative data for the BIDQ in a bariatric surgery population. Non-clinical data for the Moorehead-Ardelt Quality of Life II questionnaire is also absent from the literature.

Table 2: Psychological morbidity of current sample and comparison with community and bariatric surgery means.

Scale	Mean (SD)		Clinical Comparable Mean	Non-Clinical Comparable Mean	
Hospital Anxiety and Depression Scale (HADS – Anxiety) (n=80)	9.33 (4.43)		5.93 (4.79) ²	6.14 (3.76) ¹	
Hospital Anxiety and Depression Scale (HADS – Depression) (n=80)	5.25 (4.64)		3.78 (3.64) ²	3.68 (3.07) ¹	
Moorehead Quality of Life Questionnaire (n=80)	37.47 (11.01)		45.3 (9.8) ³	35.4 (12.1) ³	
Internalized Shame Scale - Self Esteem (ISSE) (n=80)	12.80 (5.65)		10.68 (6.01) ⁴	17.52 (4.25) ⁵	
Body Image Disturbance Questionnaire (BIDQ) (n=78)	Male 2.70 (1.12)	Female 3.20 (1.11)	2.25 (0.61) ⁶	Male ⁷ 1.57 (1.12)	Female ⁷ 1.81 (0.67)

¹ Crawford, Henry, Crombie & Taylor. (2001) data was from a normal population ² Assimakopoulos et al. (2011) used a solely female sample. ³ Sauerland et al. (2009) data comprised of pre-operative morbidly obese patients. ⁴ Franks. (2011) used participants from a treatment seeking obese population. ⁵ Rosario & White. (2006) used an adult non-clinical population. ⁶ Callaghan et al. (2011) clinical data comprised of individuals with body dysmorphic disorder (BDD) seeking cosmetic surgery

⁷ Cash & Grasso. (2005) data was from a normal population

4.5.2 *Psychological Morbidity*

The total depression mean score fell in the 'normal range'. However, of the eighty participants that took part in this study, seventeen (21.3%) reported clinically elevated symptoms of depression. Of these seventeen participants, three (17.6%) obtained scores in the 'mild' range, ten (58%) fell in the 'moderate' range and four (23.5%) obtained scores in the 'severe' range.

The total anxiety mean score fell in the 'mild' range. Forty-five (56.2%) of the eighty participants obtained clinically elevated symptoms of anxiety. Of these forty-five participants, sixteen (35.5%) obtained scores in the 'mild' range, twenty (44%) in the 'moderate' range and nine (20%) participants obtained scores in the 'severe' range. Mean depression and anxiety scores were also higher (see Table 1) in this study compared to the non-clinical (Crawford, Henry, Crombie & Taylor, 2001) and clinical populations (Assimakopoulos et al., 2011).

To establish whether these mean differences were statistically significant, z tests were carried out. Analyses found that the differences between the anxiety mean score in this study compared with the clinical ($z = 6.34, p < .001$) and non-clinical population ($z = 7.58, p < .001$) were statistically significant. This suggests that respondents in this study reported greater symptoms of anxiety compared to the clinical and non-clinical populations.

Statistical significance was also found between the depression mean score in this study compared with the clinical ($z = 3.61, p < .001$) and non-clinical population ($z = 4.57, p < .001$). This suggests that despite depression scores falling in the 'normal' range, respondents in this study reported greater symptoms of depression compared to the clinical and non-clinical populations.

4.5.3 *Quality of Life*

A score of <42 is indicative of impaired quality of life (QoL) (Sauerland et al., 2009) and thus the results indicated that participants in this study experienced impaired QoL. A comparison of the mean scores with a clinical and non-clinical sample (Sauerland et al., 2009), found that participants in this study experienced significantly lower QoL compared with the clinical sample, but marginally and non-significantly higher than the non-clinical sample.

A z test analysis found that there was a statistically significant difference ($z = -7.14$, $p < .001$) between QoL in this study and the clinical sample, suggesting that participants experienced significantly impaired QoL compared to a similar sample of bariatric surgery patients. Due to the absence of non-clinical data, the non-clinical comparator mean in Table 2 comprised a pre-operative morbidly obese population (Sauerland et al., 2009). There were no significant differences between these means, suggesting that QoL in this study's sample is similar to that of pre-operative morbidly obese patients.

4.5.4 *Self Esteem*

A score of <18 is considered indicative of low self-esteem (Cook, 1993) and thus the mean of 12.80 (sd 5.65) is indicative of clinically-salient low self-esteem. Self-esteem was lower in this sample compared to a clinical sample and higher when compared to a non-clinical population.

A z test showed that the difference between the means in this study and the non-clinical (Rosario & White, 2006) comparator group were statistically significant ($z = -9.93$, $p < .001$). Since any similar comparable clinical data (post bariatric surgery patients) is absent from the literature, treatment seeking obese patient data was used (Franks, 2011). A z test analysis showed that these differences were also statistically significant ($z = 3.11$, $p < .001$), suggesting that respondents in this study experienced improved self-

esteem compared with a treatment seeking obese patients but significantly lower self-esteem when compared with a normal population.

4.5.5 Body Image Disturbance

Mean scores greater than 2.17 for males and 2.48 for females are indicative of 'problematic' levels of body image disturbance (Cash & Grasso, 2005). Of the seventy-eight participants (13 males and 65 females) who completed the BIDQ questionnaire, nine of the thirteen (69.2%) males obtained scores above 2.17 and forty-eight of the sixty-five (73.9%) females obtained scores above 2.48. The mean scores for males and females were also higher and fell in the 'problematic range'.

z test analyses found statistically significant differences in the mean scores for both males ($z = 8.91, p < .001$) and females ($z = 18.3, p < .001$) in this study when compared with a non-clinical (Cash & Grasso, 2005) population. Comparison of the means with a clinical sample (Callaghan et al., 2011) also found statistically significant differences for both males ($z = 6.51, p < .001$) and females ($z = 13.75, p < .001$).

These results suggest that respondents in this study experienced higher and 'problematic' levels of body image disturbance compared to the normal and clinical population. However, there are no clinical data available specific to bariatric surgery patients and thus the comparator clinical data comprised individuals with body dysmorphic disorder (BDD) seeking cosmetic surgery (Callaghan et al. (2011).

4.6 Prevalence of internal, external and body shame

The second primary aim was to assess the presence of internal, external and body shame in adults who had undergone bariatric surgery. To date, there are no mean comparable data available in the literature using the ISS or the OAS to investigate shame in this population. Results are presented below in Table 3

Table 3: Prevalence of Shame

Scale	Mean (SD)	Clinical Comparable Mean	Non-Clinical Comparable Mean
Internalized Shame Scale (ISS) (n=80)	45.01 (25.73)		27.48 (15.76) ¹
Other As Shamer (OAS) (n=79)	27.30 (17.36)	-	21.73 (10.96) ²
Externalized Shame Scale (ESS-Body Shame) (n=79)	12.77 (3.44)	-	8.86 (3.17) ²

¹ Rosario & White. (2006) used an adult non-clinical population.

² Cheung, Gilbert & Irons. (2004) used a non-clinical adult population.

4.6.1 Internalized Shame

A score of >50 on the ISS scale suggest painful, possibly problematic, levels of shame and a score of >60 indicate extreme levels of shame (Cook, 1994). Although, the mean score for the study sample was not >50, thirty-two of the eighty participants (40%) obtained scores >50, with ten (12.5%) of the total sample reporting scores in the ‘painful, possibly problematic’ range and twenty-two (27.5%) of the total sample obtaining scores in the ‘extreme’ range. A z test analysis found statistically significant differences ($z = 9.94, p < .001$) between the mean in this study compared with the non-clinical sample, suggesting that respondents in this study experienced higher levels of internalized shame compared to a normal population.

4.6.2 Externalized Shame

A score of >36 is indicative of the presence of clinical externalized shame (Gilbert, 2000). The mean score in this study fell below the cut off, suggesting that the current sample overall did not experience clinically elevated levels of externalized shame. However, more detailed analysis found that twenty-one of the seventy-nine (26.6%) participants obtained a score >36, suggesting that this proportion of respondents experienced clinically elevated externalized shame.

A z test analysis indicated a statistically significant difference in the mean ($z = 4.51$, $p < .001$) obtained in this study compared with the non-clinical sample mean, suggesting that respondents in this study experienced higher externalized shame when compared with the normal population.

4.6.3 Body Shame

Scores ranged from 4 – 16 with higher scores suggesting the presence of body shame. Analyses indicated that sixty-seven (84.8%) respondents obtained scores indicative of body shame. Detailed analysis found that nineteen participants (24%) obtained scores in the ‘moderate’ range and forty-eight (60.1%) participants’ scores fell in the ‘high’ range. The mean score in this study indicated that participants experienced moderate to high levels of body-shame. A z test analysis found a statistically significant difference ($z = 9.36$, $p < .001$) between the mean in this study compared with the non-clinical sample mean. This suggests that respondents in this study experienced high body shame compared to the normal population.

4.7 Correlations: Shame (internal, external and body-shame) and psychological morbidity, quality of life, self esteem and body image disturbance

The third question aimed to assess whether significant relationships were evident between shame (internal, external and body shame) and psychological distress (depression, anxiety, low self-esteem, impaired quality of life, and body image disturbance). Pearson-product moment correlation analyses were carried out on all the variables and the results are presented in Table 4.

Table 4: Correlation analyses of relationships between shame (internal, external and body shame) and depression, anxiety, low self esteem, impaired quality of life, and body image disturbance.

	ESS – Body Shame	Total OAS	Total ISS
HADS Depression	.372**	.578**	.689**
HADS Anxiety	.422**	.566**	.737**
ISSE Self Esteem	-.372**	-.377**	-.563**
Quality of Life	-.536**	-.596**	-.725**
BIDQ	.592**	.617**	.694**

** . Correlation is significant at the 0.01 level (2-tailed).

Analyses suggest that there were significant relationships between shame (internalized, externalized and body shame) and anxiety, depression, impaired quality of life, low self-esteem, and body image disturbance at the significance level of $p < .001$. Cohen, (1988) suggested the following guidelines below (Table 5) when determining the strength of the relationship.

Table 5: Determining the strength of the relationship

<u>Small</u>	<u>Medium</u>	<u>Large</u>
$r = .10$ to $.29$	$r = .30$ to $.49$	$r = .50$ to 1.0

4.7.1 Psychological Morbidity

There were medium significant positive relationships between body shame and depression ($r = .372$, $p < .001$) and body shame and anxiety ($r = .425$, $p < .01$), and large significant positive relationships between both internalized shame ($r = .689$, $p < .001$) and externalized shame ($r = .578$, $p < .001$), and depression. Large significant positive relationships were found between internalized ($r = .737$, $p < .001$) and externalized shame

($r=.566, p<.001$) and anxiety. This suggests that high internalized, externalized and body shame is associated with higher levels of anxiety and depression.

4.7.2 *Self Esteem*

There were medium significant negative relationships between body shame ($r=-.372, p<.001$), and externalized shame ($r=-.377, p<.001$) and self-esteem. A large significant negative relationship was found between internalized shame ($r=-.563, p<0.01$) and self-esteem. This indicates that high internalized, externalized and body shame are associated with lower self-esteem.

4.7.3 *Quality of Life*

There were large significant negative relationships between body shame ($r=-.536, p<.001$), internalized shame ($r=-.596, p<.001$) and externalized shame ($r=-.725, p<0.01$) and quality of life. This indicates that high internalized, externalized and body shame are associated with impaired quality of life.

4.7.4 *Body Image Disturbance*

There were large significant positive relationships between body shame ($r=.592, p<0.01$), internalized shame ($r=.617, p<0.01$) and externalized shame ($r=.694, p<0.01$) and body image disturbance. This suggests that higher internalized, externalized, and body shame are associated with higher body image disturbance.

4.8 *Linear Multiple Regression Analyses*

The fourth research question aimed to examine the extent to which shame (internalized, externalized and body shame) predicted the variance in the outcome of psychological morbidity (depression and anxiety), self-esteem, body image disturbance and quality of life) using multiple regression analysis. Before regressions could be undertaken, data

were examined for suitability for regression (sample size, multicollinearity, normality, linearity, and homoscedasticity). Analyses indicated that the data met all assumptions permitting standard multiple regressions. For these analyses, internalized, externalized and body shame constituted the independent variables and the dependent variables comprised depression, anxiety, self-esteem, quality of life, and body image disturbance. A sample size of 80 was considered appropriate when undertaking standard multiple regression analysis (Tabachnick & Fidell, 2007). Results are presented below in Table 6.

Table 6: Multiple regression analyses of relationships between shame (internal, external and body shame) and psychological morbidity, self esteem, quality of life, and body image disturbance

Dependent Variables															
	HADS Depression			HADS Anxiety			BDIQ			Self -Esteem			QoL		
	β	<i>P</i>	R^2	β	<i>P</i>	R^2	β	<i>P</i>	R^2	β	<i>P</i>	R^2	β	<i>P</i>	R^2
OAS	.005	.976	.452	-.169	.238	.533	.117	.424	.523	.316	0.69	.529	.039	.787	.324
ISS	.704	.000**		.879	.000**		.431	.001**		-.784	.000**		-.655	.000**	
ESS Body-Shame	-.034	.754		.000	.997		.288	.001**		-.077	.506		-.179	.065	

¹ β = Standardised Coefficient

**Correlation significant at the 0.01

*Correlation significant at the 0.05

4.8.1 Psychological Morbidity

Standardised and adjusted R scores indicated that externalized, internalized and body shame accounted for 45% of the variance in the HADS depression scores and 53% of the variance in the HADS anxiety scores. Analyses indicated that internalized shame made the strongest and statistically significant ($p<.001$) unique contribution to predicting depression and anxiety scores followed by body shame. Externalized shame made the least unique contribution. Regarding anxiety, body shame made the least unique contribution followed by externalized shame for predicting anxiety.

4.8.2 Body Image Disturbance

Standardised and adjusted R scores indicated that externalized, internalized and body shame accounted for 52% of the variance in BIDQ scores. Internalized shame made the strongest and statistically significant ($p<.001$) unique contributions to predicting body image disturbance followed by body shame. Externalized shame made the least contribution.

4.8.3 Self-Esteem & Quality of Life

Standardised and adjusted R scores indicated that externalized, internalized and body shame accounted for 52% of the variance in self-esteem scores and 32% of the variance in QoL scores, with internalized shame making the strongest and statistically significant ($p<.001$) unique contribution to predicting both low self-esteem and impaired QoL. Body shame made the least unique contribution followed by externalized shame in predicting low self-esteem, whereas externalized shame followed by body shame made the least unique contribution to predicting impaired QoL.

4.9 Qualitative Analysis

Qualitative data were obtained from the BIDQ. This related to participants' experience of body changes after bariatric surgery, such as concerns about appearance and the preoccupation with these, difficulty with social and work roles, and avoidance behaviour. The BIDQ encompasses five open-ended questions (Appendix W). Thematic analysis was used to identify common themes from the qualitative statements (Appendix W)

4.9.1 Body Image

Participants described feeling embarrassment and disgust with their excess skin and fat left after bariatric surgery. These feelings appeared present most of the time and very little helped to reduce the emotional impact of these negative feelings. One participant referred to himself or herself as “defective” and another participant said that they preferred life before bariatric surgery, stating that body image is very disturbed due to the excess skin. Some participants felt that they were no longer attractive and one participant described themselves as a “freak” and another said they felt as though they had a body like a “cow’s udder”. One participant felt more depressed after bariatric surgery because their body was “horrendous”.

4.9.2 Personal and Emotional Impact

Participants described low self-esteem, lack of confidence, and feeling inept and defective. Many patients purchased bigger sized clothes to hide their body and appeared sensitive to other people’s perceptions. Some patients felt unwanted and adversely compared themselves to peers. One participant reported that they avoided intimate relationships for fear that someone would see their “*horrendous*” body. Some participants isolated themselves from their family and friends for fear of judgement. Some participants reported feeling let down by the NHS, having expected body

contouring after bariatric surgery but later being refused because of altered NHS criteria for eligibility.

4.9.3 Social Impact

Participants reported that they often avoided socialising, felt embarrassed at what others thought of them, stating that they felt *“too fat to be out with”*. Social activities, such as exercise, sport or holidays, involving a need to undress or wear clothes that did not cover the body entirely, were particularly avoided because they felt *“unattractive and ashamed”* of their body.

4.9.4 Impact on Role(s)

Many participants stated that they avoided getting undressed in front of their partners and several participants avoided relationships altogether because they felt too embarrassed, self-conscious and uncomfortable. Some participants disengaged from physical intimacy stating they *“no longer have sex as I’m too embarrassed by my loose skin”*. Parenting, and employment were affected; one participant reported feelings of guilt because they stopped going swimming with their children, and another reported ceasing to work because of the loose skin.

5 Discussion

5.1 Overview

This study aimed to explore the presence and extent of shame in a population who had undergone bariatric surgery in the last 12 months, since no study had examined this important variable to date. The study also assessed to what extent shame may be related to other psychological morbidities, such as depression, anxiety, low self-esteem, impaired quality of life (QoL) and body image disturbance, and examined to what extent shame predicted the variance in psychological morbidity, self-esteem, quality of life, and body image disturbance.

5.2 Demographic information

The sample in the current study was predominantly female (82.5%), white British (95%), with a mean age of 48.48 (sd, 7.86) mainly comprising individuals who had undergone bariatric surgery more than two years ago (68%). Respondent demographic data did not differ significantly from that obtained nationally (and surgical procedure was also largely consistent) (NBSR, Wellbourne et al., 2011); however, without regional bariatric surgery data available, regional comparisons were not met. Whilst ethnicity was representative nationally, it did not concur with the regional profiles (2011 Census Statistic).

5.3 Psychological morbidity

Overall, a greater number of respondents reported higher levels of distress (as captured by measures of anxiety and depression) than the general population (Crawford, Henry, Crombie & Taylor, 2001) and those with comparable clinical profiles (Assimakopoulos et al., 2011). However, as this latter clinical sample comprised a solely female sample, generalisability is made more difficult and this comparison is offered more tentatively.

Whilst depression scores fell in the 'normal' range, individual case analysis found that seventeen of the eighty participants reported depressive symptoms in the clinical range (n=3 'mild', n=10 'moderate' and n=4 'severe' range). Anxiety scores fell in the 'mild' range and individual case analyses found that forty-five participants obtained scores in the clinical range (n = 16 'mild', n = 20 'moderate' and n = 9 'severe' range). Such findings appear contrary to those in which bariatric surgery has been associated with reduced anxiety and depression (Burgmer et al., 2007; Karlsson et al., 2007; Legenbauer et al., 2007; Nickel et al., 2005, 2007).

The reflections on current psychological distress are tempered by the current study design which did not seek to make pre/post-surgery comparisons, given its primary focus was to examine the potency of shame as a predictor variable. The potential impact of surgery on psychological morbidity could only be achieved in a longitudinal design in which surgery could be examined as a potential mediating factor. However, although pre-operative anxiety and depressive disorder have been seen to predict depressive disorder 24 to 36 months after surgery (de Zwaan et al., 2011), it is not possible to comment on whether anxiety and depression improved after bariatric surgery.

Explanations for the elevated depression and anxiety scores may tentatively be drawn from the qualitative data (Appendix W) obtained in this study (from the BIDQ) which suggested that despite a successful surgical procedure, participants continued to feel self-conscious, they reported being concerned about being judged, hypervigilant to perceived criticism, and they felt low and unworthy of being loved. It is possible that such emotions and cognitions are associated with an individual's mood and anxiety, supporting the view that an individual's psychological state may deteriorate after bariatric surgery because excess skin following massive weight loss is common, leading to physical and psychological problems (Magdalena et al., 2011). Given the absence of pre and post operative data and the self-selecting nature of the respondents in this study, the elevation in psychological morbidity may reflect a more enduring psychological vulnerability (which may have contributed to the respondent's obesity

status prior to surgery) and thus a study examining these variables pre and post-surgery may help provide further information.

5.4 Quality of life

Participants in this study obtained scores indicative of impaired QoL. The comparator data for the non-clinical group consisted of pre-operative morbidly obese patients (Sauerland et al., 2009) and whilst this is not ideal, at present there is an absence of non-clinical data for the Moorehead-Ardelt QoL questionnaire and thus the comparisons should be viewed tentatively. Absence of non-clinical data for the Moorehead-Ardelt QoL measure is most likely due to this measure being developed as a disease-specific instrument to measure postoperative outcomes of self-perceived QoL in obese patients.

Interestingly, participants in this study reported QoL of a similar magnitude to individuals pre-operatively morbidly obese, whose QoL is reported as lower (Fontaine et al., 2000), than post bariatric surgery patients. This would challenge the notion that surgery invariably improves QoL (Ogden et al., 2006; Gould et al., 2006; Buchwald et al., 2004; van der Beek et al., 2010; Kolotkin et al., 2009; Van Hout et al., 2009) and be more in line with equivocal findings with some studies (Horchner & Tuinreijer, 1999; O'Brien et al., 2002) finding significant improvements and others (Schock et al., 2000) reporting no significant changes one or three years after bariatric surgery. The findings in this study may support research that suggest QoL tends to plateau 12 months after bariatric surgery (Burgner et al., 2007) and indeed all of the participants in the current study were a minimum of 12 months post-surgery, but again the study design precludes firm conclusions being drawn in the absence of pre-operative data.

Qualitative data (Appendix W) suggest ongoing difficulties with the potential to impair life quality including accounts of adverse impacts on socialising, embarrassment, family gatherings, and valued activities because respondents felt that the presence of

excess skin after massive loss prohibited them from engaging or enjoying such activities. As the review noted in this portfolio, more and methodologically robust research is needed to explore the impact of residual difficulties, post-surgery, on quality of life.

5.5 Self-esteem

Participants in this study reported levels of self-esteem beneath those in the general population (Rosario & White, 2006) and higher than clinical populations (Franks, 2011). However, it must be noted that due to the absence of bariatric surgery clinical data, the clinical data used as a comparator in this study consisted of morbidly obese patients seeking treatment and thus these comparator results should be viewed tentatively. Further research investigating self-esteem in a bariatric surgery population is thus warranted.

Since the majority of participants in this study were 12 months post-surgery, the current findings may support research that suggest self-esteem initially improves after bariatric surgery but no further increases are found 12 to 24 months post bariatric surgery (Burgmer et al., 2007). Low self-esteem scores may also be tentatively understood from the qualitative data (Appendix W), which highlighted that some participants reported low self-esteem, lacked confidence and felt “*inept*” and “*defective*” due to the presence of excess skin.

5.6 Body image disturbance

Participants reported ‘problematic’ levels of body image disturbance in this study. Mean scores were also higher compared to non-clinical (Cash & Grasso, 2005) and clinical populations (Callaghan et al., 2011), suggesting that respondents in this study experienced higher levels of body image disturbance compared to the normal population and individuals with body dysmorphic disorder undergoing cosmetic

surgery. Due to the absence of bariatric surgery comparator data available at present, the comparison of results with the clinical population should be viewed tentatively.

Explanations for these findings may be drawn from the literature, for example, the majority of participants in the current study were female and female beauty is often associated with thinness and a ‘perfect’ body is central to how physically attractive a person feels and the way they rate their body image (Wardle & Cooke, 2005; McCabe et al., 2010; Lawler & Nixon, 2011). Pre-operative obese status is reported to be associated with greater body image dissatisfaction (Schwartz & Brownell, 2004) and elevations in body image disturbance in the current sample may thus reflect a more enduring psychological vulnerability.

Participants may not have expected the residual difficulties post surgery (excess skin, flaccid soft tissue) or have been prepared for the detrimental affect this may have had upon their body image, potentially leading to increased disturbances in body image. However, these interpretations are hindered by the study design, which did not seek to make pre/post-surgery comparisons, and thus a study examining whether body image disturbance alters after bariatric surgery is needed.

Participants in this study are likely to have lost a substantial amount of weight resulting in excess skin body image dissatisfaction. Qualitative data (Appendix W) obtained in this study may also tentatively support this. Some participants reported “*embarrassment and [being] disgusted*” with their body due to the presence of excess skin and fat, referring to themselves as “*defective*” and a “*freak*”. One participant said that they preferred life before bariatric surgery, stating that their body image is now “*very disturbed*”.

5.7 Shame

5.7.1 Internalized shame

The proportion of the sample reporting elevated shame significantly exceeded the non-clinical population (Rosario & White, 2006). Although mean internalized shame was at the subclinical level, over a quarter of participants (n=32) reported painful, possibly problematic levels of internalized shame, of which ten participants reported ‘extreme levels’ of internalized shame. High internalized shame scores may reflect the constructs origins in negative self-view and feelings about personal attributes, behaviour and personality characteristics (Kaufman, 1989; Cook, 1996).

High-internalized shame may have arisen due to respondents’ thoughts and feelings of being unattractive, undesirable, worthless, and defective (Gilbert, 2007; Lewis, 1992; Tangney & Dearing, 2002; Tracy & Robbins, 2004). This is tentatively supported by the qualitative data (Appendix W), for example, one participant reported that “*My belly is disgusting and flabby, I hate it*”, another said “*I look like a saggy teabag*” and another participant stated “*I look like a freak from a freak show*. Participants may well judge themselves as flawed and/or inadequate (Gilbert, 1992, 1995) feeling that they have not lived up to their own internalized set of standards (Tangney, 1995). Such internalized shame feelings may manifest as a consequence of their self-reflection and/or self-perception, potentially inducing fears or expectations that others may find them disgusting (Gilbert, 1992; Goss and Allan, 2009; Miller, 1997; Power & Dalgleish, 1997). Individuals with high internalized shame may also view themselves as ‘inadequate’ or ‘inferior’, considering themselves ineligible for various forms of participation in life and engagement in social activity (Bergner et al., 2007). Support for this may be drawn from the qualitative data (appendix W). One participant stated that “*...I am so embarrassed at my wobbly skin and uneven breasts that people think I am still too fat to be out with*” and another said “*No one wants me I’m not good enough for anyone*” and another participant stated that “*I just feel inept and not good enough*”.

Due to the experience of internalized shame, participants in this study may not only hold negative self-perceptions and unfavourable social comparisons (Tangney, 1995; Gilbert et al., 1992), but they may also display submissive behaviours (e.g. avoidance, not going out, avoiding social functions) in order to appease others and limit possible attacks (Keltner, 1995). This is consistent with the qualitative data (Appendix W), for example, one participant reported that *“I am so self-conscious, I don’t go swimming or wear clothes that may showing my saggy skin”* and another stated *“I don’t go out, I will find any excuse to get out of it because people might see my disgusting skin”*.

5.7.2 Externalized shame

Externalized shame relates to evaluations that others would reject or attack and how one thinks others view the Self (Allan et al., 1994; Goss et al., 1994). Although externalized shame was not clinically elevated in this study, over a quarter of participants (n=21) reported clinically elevated levels of externalized shame, significantly exceeding that in a general population (Rosario & White, 2006).

Respondents may feel that others view them negatively and thus their coping strategies may include attempting to positively influence their self-image in the mind of the others, or towards defensive strategies, such as escape, submission or appeasement (Matos et al., 2012). Support for this may be tentatively drawn from the qualitative data (Appendix W). One participant stated *“I panic at the thought that anyone (potential partner) would see me naked so I don’t go on dates”* and another participant reported that *“I can’t stop thinking about what others would say if they saw my body, that’s why I’m single again”*. One participant reported *“I don’t go to the gym or swim any more, I’m too scared of what people might think after seeing my saggy skin”*. Participants also reported that they avoided places where they may need to undress, often becoming anxious that they will be rejected by others once their ‘flaws’ are exposed, leading to concealment of their perceived unattractive aspects of the self from others (Gilbert, 2002; Lewis, 1992).

5.7.3 *Body shame*

Body shame is often described as the shame experienced in relation to one's current body size (current shame) and the anticipated shame if one were to gain weight (anticipated shame) (Troop, Sottrilli, & Treasure, 2006). Participants experienced 'moderate to high' levels of body shame in this study, and significantly elevated by comparison to a normal population (Rosario & White, 2006). The excess skin and flaccid soft tissue left after massive weight loss may well have contributed to participants' feelings of body shame and qualitative data appears to support this (Appendix W).

Being sensitive to one's appearance in conjunction with one's thoughts and perceptions that the body is 'defective' or 'imperfect' may provide further insight into the high body shame scores found in this study (Okland et al., 2012). Residual body dissatisfaction appears to prompt almost three quarters of patients to seek reconstructive surgery after massive weight loss (Kitzinger et al., 2011), however, the psychosocial outcomes of such surgery are equivocal, with some improved psychosocial outcomes whereas other studies found no such changes (Sarwar et al., 2005). It may also be that respondents in this study are more vulnerable to heightened body shame due their pre surgical experiences when obese and thus a pre/post-surgery comparisons study would provide further insight into prevalence and extent of body shame in this population.

5.8 *Relationships between independent and dependent variables*

There were significant relationships between all the independent (internalized, externalized and body shame) and the dependent (psychological morbidity, low self-esteem, impaired quality of life, and body image disturbance) variables in this study.

Analyses indicated that high internalized, externalized and body shame was associated with higher levels of anxiety and depression, lower self-esteem, impaired quality of life, and higher levels of body image disturbance. These finding are consistent with the

growing body of research that asserts an association between shame and psychological morbidity, such as depression (Allan et al., 1994; Andrews et al., 2002; Tangney et al., 1992; Tiggerman & Kuring, 2004) anxiety and general distress (Tangney & Dearing, 2002), lower self esteem, lower self efficacy and coping strategies of avoidance (Yelsma, Brown & Elison, 2002) and impaired quality of life (Baldwin, Baldwin & Ewald, 2006). Detailed assessment of these psychological morbidities and an understanding of the interplay of these variables will not only be important for future research but also when designing and developing interventions specific to a post bariatric population.

5.9 Multiple regression analysis

Internalized, externalized and body shame accounted for nearly half of the variance in depression scores, over half of the variance in anxiety, body image disturbance, and self-esteem scores, and over a quarter of the variance in QoL scores. Internalized shame made the strongest contribution for variance in all the dependent variables.

Research suggests that shame plays a significant role in the onset and course of depression (Andrews, 1995, 2007; Andrews & Hunter, 1997) and whilst few studies have explored the link between shame and anxiety (Gilbert et al., 1994), others argue that individuals with high shame, specifically fearing negative evaluations and social avoidance are hallmarks of anxiety (Irons & Gilbert, 2005; Pinto-Gouveia & Matos, 2011; Tangney, Wagner, & Gramzow, 1992). The results of this study, however, contrast research that asserts externalized shame is more strongly related to psychopathology (especially depression), than internal shame (Kim, Thibodeau & Jorgensen, 2011; Gee & Troop, 2003). A pre and post study may perhaps provide further insight into whether post bariatric surgery individuals are enduringly vulnerable to shame, perhaps due to legacy of being overweight.

Internalized shame is often associated with feeling inadequate and inferior (Rybak & Brown, 1996), through negative evaluations (Gilbert, 1992), judging oneself as flawed

and/or inadequate (Gilbert, 1992, 1995). Thus, that internalized shame strongly predicted psychological morbidity in this study was not surprising since qualitative data (Appendix W) indicated that some respondents tended to regard themselves as inadequate or inferior, possibly considering themselves ineligible for various forms of participation in life (Berger & Holmes, 2000). Respondents may also have felt that they have not lived up to their own internalized set of standards (Tangney, 1995), leading them towards passive/avoidance coping strategies, and acting in ways that verify their negative self-views (Swann et al., 2007)

Internalized shame and body shame made the strongest contribution to the variance in body image disturbance. Externalized shame made the least contribution. This again is not unexpected since internalized shame is related to an undesired and unattractive Self, a Self that one does not want to be (Gilbert, 1998, 2003). Negative views about one's body (e.g. 'defective' or 'imperfect') is likely to increase one's body image disturbance (Okland Lier et al., 2012) which in turn may induce feelings of humiliation, worthlessness, and disgrace (Pineles, Street & Koenen, 2006) leading to heightened internalized shame. This is also consistent with the qualitative data (Appendix V) obtained in this study.

In predicting low self-esteem, internalized shame made the strongest contribution followed by externalized shame. Body shame made the least contribution. Internalized shame made the strongest contribution in predicting impaired quality of life followed by body shame. Externalised shame made the least contribution. Respondents in this study may be more shame prone compared to the normal population and this proneness may be the primary source of low self-esteem (Jacoby, 1994).

The findings in this study are consistent with research that demonstrated relationships between shame and low self-esteem and QoL (Cook, 1993; Gilbert, 1998). Internalized shame found in participants in this study may reflect societal messages of inferior social status and subjective devaluation (Gilbert, 2000; Weeks, Heimberg, & Heur, 2011) and support for this may be drawn from the qualitative data (Appendix V), for example, one

participant reported “*No one wants me I’m not good enough for anyone*” and another stated that “*I don’t go out, I will find any excuse to get out of it because people might see my disgusting skin*”. A pre and post study would provide further insight into whether or not bariatric surgery individuals are more prone to feelings of shame than the normal population. Not only would such a study provide further information pertaining to a bariatric surgery profile but it would also hopefully identify the much needed assessment tools in order to accurately identify and manage the psychological treatment needs of this population.

5.10 Summary

In summary, indices of psychological morbidity, low self-esteem, impaired quality of life, and body image disturbance were significantly higher in this study sample in comparison to community norms. Although means scores suggested that participants reported ‘mild’ symptoms of anxiety and ‘normal’ levels of depression, a proportion of patients obtained scores suggestive of ‘moderate’ to ‘severe’ anxiety and depression. Whilst internalized and externalized shame was not clinically elevated in this study, it was significantly higher compared to the normal population and a proportion of participants obtained clinically elevated scores. There were strong relationships between the independent and dependent variables and internalized shame was seen to be the strongest predictor in the variance of psychological morbidity, low self-esteem, impaired quality of life, and body image disturbance scores.

To date, with the exception of the Moorehead-Ardelt QoL measure, the measures used in this study were not specific to a bariatric surgery population and are often used on ‘psychiatric’ populations. Research is needed to help develop and validate psychological measures specifically for a bariatric population to ensure rigour and robustness of further research.

5.11 Clinical implications and future research

The findings from the current study suggest that psychometrically reliable and valid assessment tools are desperately needed to accurately identify psychological morbidity and shame in a bariatric population. Based on this study's findings, psychological assessment tools and interventions are needed to help reduce levels of shame and psychological morbidity, improving self-esteem and quality of life and body image disturbance in patients after bariatric surgery. Further research is desperately needed to examine these constructs to help develop a better psychological profile of bariatric patients in order to provide effective psychological treatment and improve surgery outcomes. This would not only help further develop our understanding of this population but it may aid in identifying better predictors of outcomes.

Psychological difficulties reported in this study emphasise a need for professionals to be attentive to internalized shame as a predictor variable in post-surgical status. Assessment and treatment, if appropriate, of an individual's self-image, including both specific perceptions of their appearance and physical attractiveness as well as more internalized feelings of worthiness or shame should be incorporated into a treatment pathway. This is especially important given the increased recognition of psychological needs of patients, following a previous emphasis on biomedical care.

Any intervention programme should help address negative self-views and shame. By strengthening these views, outcomes and patient satisfaction after bariatric surgery may well be improved. A clearer understanding of the experience of shame in pre-operative patients might be important and potentially lead to the development of more specific treatment strategies. A number of recommendations for future research are noted. A longitudinal study may help monitor the psychological well-being of patients over time, gaining greater explanatory power. Further validation and development of shame specific measures to a bariatric surgery population is recommended, which could be used to screen patients in outpatient clinical settings.

Training clinicians in the recognition and management of shame pre and post-surgery may be helpful, since this would identify potentially problems that may interfere with post-operative outcome. Group-based approaches, such as CBT and compassion focused therapy (Gilbert & Irons, 2004) may be helpful in addressing shame. These treatment approaches have predominantly been delivered in an eating disorders population and group outcome evaluations suggest that participants no longer felt alone, isolated and indifferent and the social support and acceptance the group provided was found to promote successful outcomes (Gilbert & Irons, 2004). It may be that such a group environment may promote self-efficacy, and make it easier for individuals to engage in reciprocal caregiving and self-nurturing roles. Recent developments in CBT aimed at developing self-compassion managing self-directed hostility and developing self soothing (Gilbert, 2000b; Gilbert & Irons, 2004) may be helpful.

5.12 Study limitations

Limitations of this study relate to issues associated with the sample, which consisted mainly of white British women, and whilst representative of patients undergoing bariatric surgery nationally, it was not representative of the region's black and ethnic minority population (2011, Census Survey). This study recruited participants from a specific region in the United Kingdom, potentially leading to difficulties of generalisation and missing any pertinent differences in gender or ethnicity.

Caution must also be exercised when interpreting the results of this study with comparison data. This is because non-clinical comparison quantitative data for QoL is absent from the bariatric surgery literature and thus an obese treatment-seeking population was used. This comes with inherent problems because obesity has been found to be associated with a number of psychological morbidities, and thus is not entirely representative of a normal population. The same can be said for the clinical data used for comparison of self-esteem. Also, the clinical data used for comparison of BIDQ data were obtained from a study based on individuals with body dysmorphic disorder undergoing cosmetic surgery. In addition to this, the latter clinical data

amalgamated the means of both male and females, whereas the current study separated the means, meaning that the individual gender BIDQ means in this study were compared against means comprising both genders, thus these comparisons should be viewed tentatively. This highlights the absence of good quantitative research exploring psychosocial variables in the bariatric surgery literature. Differences in participant characteristics or methodology may also account for variances in the results and thus further research is required to provide a psychological profile of this population.

There is currently no research in the bariatric surgery literature investigating shame, making it difficult to state with any certainty whether the sample in this study was representative of the bariatric surgery population on the shame measures. In addition, body shame was assessed using only four items that comprise the Externalized Shame Scale (ESS) and thus the findings relating to body shame should be viewed tentatively. The latter also highlights the absence of psychometrically robust measures in bariatric surgery. With the exception of the Moorehead-Ardelt QoL measure, all the measures used in this study, due to the lack of normative data for bariatric patients, may be brought into question in terms of their validity with a bariatric surgery population.

Measures were also self-report and were not diagnostic instruments and thus mean scores do not permit the estimation of the prevalence of psychological disorders post surgery. Symptoms assessed with self-report questionnaires may be more often biased by compounding covariates, such as responding in a socially desirable manner or over reporting symptoms compared to symptoms confirmed by interview (Luppino et al., 2010). Therefore a study using both quantitative and qualitative methodology may further develop and enhance the current understanding of this population. In addition, research developing and validating measurement tools in this population is desperately needed.

The current study found that depression, anxiety, low self-esteem, impaired quality of life, and body image disturbance were all related to shame (internalized, externalized and body shame). However, it is not possible to conclude causal relationships because

the relationships between these variables do not imply causality. This research was also advocated from a model that implied that cognitive evaluation of health difficulties was central to understanding psychological difficulties in this patient group, thus eliminating and intentionally missing other possible explanations for the phenomena recorded. The use of a volunteer sample may have introduced response bias, and whilst the method for rectifying this would be to perform a full analysis of non-respondents, the study's procedures hindered this process.

A further limitation was that patients (in a region where black and minority ethnic profiles are at high levels) without a good standard of English were excluded from being contacted because none of the measures were validated in different languages, meaning a number of groups were excluded, however without full analysis of non-respondents it is difficult to draw such conclusions.

Due to the exploratory nature of this study, bariatric surgery type was not differentiated and analyses was carried out encompassing all surgery types (gastric bypass, sleeve gastrectomy, gastric banding, gastric balloon placement and revisional (redo) surgery). Therefore, it is not known whether certain surgical procedures were more correlated to certain psychological difficulties than others and further research looking at these differences may help our understanding of whether any one specific surgical procedure is related to psychosocial outcomes.

This study obtained data from post surgical bariatric patients only. It was not possible to carry out a longitudinal study to obtain pre-operative data and thus it is not possible to state whether or not the psychological variables identified in this study were present before bariatric surgery or are a consequence of some other phenomenon. Future research investigating pre and post levels of shame and psychological morbidity should be considered.

5.13 *Conclusions*

Whilst acknowledging the limitations of this study, this research project has demonstrated the presence of psychological difficulties in the bariatric surgery population, especially when compared with the general population. It has identified that bariatric surgery patients experience ‘problematic levels’ of body image disturbance, significantly low self-esteem and impaired quality of life. Internalized, externalized and body shame were higher compared to a comparison population and internalized shame was the strongest predictor of the variance in the dependant variables. Further research investigating these constructs quantitatively and qualitatively, developing robust measurement tools and developing psychologically informed interventions to improve outcomes in this population is needed.

This study has enhanced research in this area, identified important and prevalent constructs, and has helped explain relationships between the independent and dependent variables. It is hoped that this study will be the first in a series of research into understanding more about the nature of shame experienced by bariatric surgery patients, alongside management of their biomedical needs.

At present, psychological approaches are not a main component of post-bariatric surgery treatments, however this study suggests that psychologically informed intervention may benefit such individuals. Incorporating aspects of treatments that address shame may help improve other psychological difficulties such as low self-esteem, impaired quality of life, and anxiety and depression and body image disturbance and thus future research into trialling psychological interventions that specifically target shame in this population would be helpful.

6 References

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7 Critical Appraisal

I am now going to appraise and critically discuss my reflections, experiences, journey and challenges throughout this research process. My experience in conducting research in the NHS prior to the Doctorate in Clinical Psychology was relatively circumscribed and this appraisal focuses on what I have learned a researcher.

7.1 Research selection

During my first-year placement in a department of clinical health, I noticed numerous referrals received by the service for help, support and advice concerning patients who had undergone bariatric surgery, notable were those reported as struggling to make sustained life changes and adjustments after surgery, such as restrictive eating, changes in food choice, and changes in meal types. Other referrals related to individuals who were on the waiting list for bariatric surgery but who were unable to reach or sustain the weight loss criteria required for the surgery to go ahead.

These referrals encouraged me to speak and meet directly with the referrers (usually the senior dietician, laparoscopic nurse, or consultant surgeons) and through reading the literature concerning the psychological factors associated with bariatric surgery, the idea of the psychological impact of excess skin after massive weight loss was first developed. What became clear and obvious, was the dearth of well-designed, robust and psychologically informed research in this area.

During this placement, I co-facilitated a cognitive behavioural and mindfulness based group, during which a number of participants described experiences of 'shame'. Both pre and post-operative patients talked about they felt ashamed of themselves, particularly around the amount of food they consumed; they felt ashamed and embarrassed at what others thought of them; and most, if not all, described how they disliked and felt ashamed of their body. Throughout this placement, my interest in the psychological factors associated with bariatric surgery developed further and

strengthened. The opportunity to explore shame and disgust in bariatric surgery patients was first offered during a university research fair. After initial discussions with my research supervisor, a research proposal was submitted and later agreed by the University. My main priorities were to select a piece of research that was interesting, grounded in clinical phenomena, permitted application of theory, added something novel to the current literature and sustained my interest.

7.2 Designing the project

Once an initial project idea was agreed and discussed with my research supervisor, we agreed a need for further consultation with the bariatric team where recruitment could potentially be carried. This was to ascertain their priorities, views and thoughts in carrying out a psychologically-oriented research project. Since I was carrying out my first-year placement at the same acute trust and I had by now developed good working relationships with the team, arranging meetings was fairly straightforward and without difficulty. I learned that as a researcher, where the help and assistance of others was integral to the study, it was important to communicate often and keep others involved as much as possible whilst also continually assessing and managing expectations and aligning the project to the needs of all those involved.

Initially, the bariatric team expressed a keen interest in exploring predictor variables of psychosocial outcomes in bariatric surgery, however, quite a few studies had explored this area recently (albeit modest in their research designs and methodology), and in addition, a previous trainee had also carried out this piece of research. After discussions, it was agreed that since shame and disgust was absent from the literature, an understanding of whether these constructs were prevalent in the bariatric surgery population and whether they were associated with outcomes would be helpful. I learned that having a strong familiarity with the research topic not only helped to fine tune my academic skills but it also equipped me with confidence and understating needed to develop and execute a good research project.

My research supervisor and I discussed at the very beginning of planning this study that the methodology should be driven by the research questions. Since the study was looking at prevalence and relationships, for example to what extent was shame and disgust was present and elevated in this population, and could shame and disgust predict outcomes (psychological morbidity, impaired QoL, low self-esteem and body image disturbance), we agreed that a quantitative stance would be appropriate. This, therefore took a positivist standpoint, assuming that these constructs could be objectively measured using quantitative methods. Regular supervision and liaison with the bariatric team also provided an opportunity to discuss issues of accessing sufficient numbers in a specific time frame, participant willingness, and examining previous work on shame in order to gauge the success of recruitment.

7.3 Peer and ethical review

Through discussions with my research supervisor and the bariatric team, a research proposal was developed and submitted to the University for peer review. I attended a panel meeting with reviewers, which although slightly daunting, was very supportive and encouraging of the research. There were no major methodological recommendations at this stage and consequently I felt reassured that the study was viable and feasible and could now be taken forward. This highlighted the importance of developing a well written and rigorous research proposal grounded in theory in the first instance. However, to do this, the proposal required frequent modifications and restructuring, and admittedly, at times leading to frustration and feeling overwhelmed. I learned that talking things through with my supervisor, and giving myself time to reflect was key in developing a robust and rigorous project based on sound theoretical framework.

Gaining ethical approval for a study first required completing the 'Integrated Research Application System' (IRAS) online, an extremely lengthy, arduous and repetitive process which was confusing, often requiring advice from peers and other professionals involved in NHS research. I learned that carrying out research in the NHS is by no

means an easy and a simple process, often complicated by inconsistent information and uncertainty. On completion and submission of the IRAS form, I attended a Research Ethics Committee (REC) meeting that comprised 14 members with varying professions; however, no members with a psychology background were present. The meeting was very comprehensive and detailed, lasting nearly 1 hour and 15 minutes and most of the questions related to their concerns regarding the constructs shame and disgust. I learned that it may be helpful to target an ethics committee with a better familiarity with such psychological constructs in future.

A major concern from the committee was that there were *“too many measuring scales”*, recommending that the number should be reduced and many questions within the measures had the potential to *“upset participants...and add bad feelings to patients who may already feel depressed due to negative surgery outcomes”*. The committee also doubted that sufficient participant numbers could be recruited and suggested that disgust be taken out of this study (despite my attempts to provide a sound and theoretically driven rationale). The panel also recommended that the wording (negative statements) within the questionnaires should be changed so that they are positively worded despite me outlining that changing the wording of standardised measures would be inappropriate, compromising the validity and reliability of the measures.

The panel also suggested that patients be only approached using a postal method, again despite any reassurances given by me that participant safety will be paramount at all times. I felt that this study had been *“written off”* by the panel despite feeling that I had provided them with all the information to ease and alleviate their concerns. I felt that the panel was resistant to take on any further information, possibly due to their own uneasiness and anxieties about the constructs being measured. This led to me feeling anxious and defeated, questioning whether this project was achievable given the timeframes of the DClinPsy. However, I learned that by reshaping certain aspects of the project encapsulating some of the panel’s concerns and resubmitting my application to a committee that had more experience and familiarity with psychological research, I

was able to carry out a very useful and clinically relevant study. Whilst relieved that my project had been approved, I couldn't help but feel slightly discontented at how two REC panels had completely different views and be inconsistent in their recommendations regarding the same research.

The next stage of the process was to obtain Research and Development (R & D) approval from the host site. This consisted of submitting all of the REC documents, plus completing 'Consent and Good Clinical Practice Training', obtaining signatures from various people and obtaining documents such as research training certificates for all those directly and indirectly involved in the research. Whilst a very rigorous process, it made me aware of how important it is to protect patients when carrying out research in the NHS. Fortunately, all those involved in this research and the R & D individual allocated to my submission were extremely efficient and helpful and thus, the study was given approval very quickly and without problem. I learned that continued liaison with the same key personnel, with whom the clinical team also had links via research was extremely important and vital in the execution of this study.

7.4 Data collection

I was somewhat worried due to generally low response rate when using postal questionnaires. Postal questionnaires also precluded more detailed engagement and it is possible that postal versus clinical recruitment methods may have implications regarding disclosures of shame based emotions.

A considerable amount of planning and work was carried out to understand the throughput of potential respondents within the sampling timeframes and the multiple sources from where participants could be recruited. From July 2013 to January 2014, a total of 265 study packs were posted to respondents by a member of their care team and by March 2014, a total of 80 completed questionnaires were returned. Recruitment was relatively smooth and it was only four short of reaching power, which would definitely not have been possible without the unconditional support from the bariatric surgery

team. Questionnaires were returned with little missing data, possibly highlighting the importance of carrying out systematic checks of the study packs to ensure that all the necessary documents were included.

7.5 Data analyses

Data analysis was initially intimidating given I had not undertaken substantial research analyses of this kind since completing a masters in 2002. This required me to be systematic, referring to texts and programs at length to gain familiarity and detailed discussion with statisticians. I now have a much better understanding of the critical analytical techniques, and that with immersion and familiarity and practice, interrogating a large data set is both enjoyable and rewarding. It revealed to me again the excitement of testing hypotheses and considering both theoretical and clinical implications of the findings as well as managing ambiguities in data interpretation.

7.6 Supervision

Research supervision has been a very important and useful element in this journey. I have been fortunate to work with a supervisor who has been involved in similar research, was able to reassure and contain my anxieties, and gently guide and support my decisions. Through supervision, I developed my academic and clinical skills, specifically in the ability to précis large amounts of information and select what is important, allowing me to further develop my skills in writing clearly and concisely. Supervision also helped me focus, constantly drawing me back to the research questions and learning how to develop an informed and critical narrative. Clinical supervision not only allowed a deeper consideration of the theoretical underpinnings of the research, but I also developed my knowledge in how this may be presented in clinical practice.

7.7 Personal reflections

Prior to starting the doctorate in clinical psychology, I gave very little thought to the psychological factors associated with post bariatric surgery patients, in fact, other than watching the occasional documentary, listening to or reading extracts in the media, I knew very little about these phenomena. However, my first clinical placement provided me with the opportunity to understand this population group further and discussions with members from the bariatric team further developed my curiosity and interest.

I was fortunate to have a research supervisor who shared this interest and thus our initial thoughts about the role of shame in post bariatric patients could be taken further and investigated more fully. Admittedly, there were times throughout this research where I thought “*I can’t do this*” and “*what if I don’t get my participant numbers, will I fail?*”, or “*what do I do now*” when the results made no sense or weren’t perfectly in line with the textbooks. However, through perseverance, taking some time out, and discussions with my supervisor and peers, I was able to overcome these challenges which made me feel more competent and skilled in carrying out quantitative research.

I was disappointed that disgust was taken out of this research, especially since shame often occurs through self-reflection or self-perception, involving a fear or expectation of eliciting disgust in others (Gilbert, 1992; Goss & Allan, 2009; Miller, 1997; Power & Dalgleish, 1997). On reflection, I should have been more persistent in the rationale for exploring disgust in post bariatric surgery patients and not have ‘backed down’ so easily, however, on reflection, I more than likely did this due to my own anxieties about wanting to begin the research within the tight DClinPsy timeframes. This would have been an important addition to the study given its relationship to body image disturbance and body shame in clinical populations. The concepts of disgust-sensitivity, appearance concern and body shame are hypothesised to be closely related with body image disturbance; and disgust-sensitivity and body shame are both described as having similar psychological and behavioural components (Gilbert & Miles, 2002). It is

difficult to state why disgust drew a dismissive response from the ethics committee, perhaps understanding that their responses are not always rational or consistent.

One thing that I wasn't prepared for was the psychological impact on me in carrying out this research. Quantitative research 'removes you' somewhat from the participants individual experiences and concerns, however, this study incorporated a questionnaire where participants were able to qualitatively describe their feelings about their body. There were often times after I'd read personal descriptions, that I felt connected to the individual compared to simply inputting numbers and figures. I often found myself thinking about their difficulties and how I could help them, acknowledging and feeling somewhat concerned that there are very few, if any at all, psychological interventions for post bariatric surgery patients. This potentially highlights the difficulties associated with being a researcher versus that of clinician when carrying out such emotive research.

Another important reflection was the realisation that there is no such thing as "perfect" data and that clinical populations are rarely normally distributed, resulting in the need to make difficult decisions about how best to analyse the data. This study provided considerable learning curves involving reflection, discussions and modifications throughout since 'real-world' research proved to be much more of a dynamic, rather than static process. Throughout this research journey, not only have I developed my confidence and ability in designing and executing clinically meaningful research, I now have an increased awareness of the practical issues this involves.

7.8 Limitations and future research

One limitation of the current study relates to the demographic data and how representative it was of the wider post bariatric surgery population. This was because the majority of participants in this study were white British women but from a region where ethnic diversity is prominent. Tight timeframes and the study's methodology (postal questionnaires) meant that I was unable to obtain reasons for any non-

respondents, which would have proved useful. The measures used in this study, with the exception of the Moorehead-Ardelt QoL II, have no normative data for bariatric surgery patients, questioning the use of these with this population. Thus, developing psychologically oriented and psychometrically robust questionnaires exploring shame and psychological morbidity specific to a post bariatric surgery population is important for future research.

Since this study took on a prominent quantitative stance, potentially rich and pertinent qualitative data was missed. Future research exploring the role of self-consciousness in this population should use both qualitative and quantitative methodology. It was not possible to know whether psychological morbidity reported on the measures was present and or elevated preoperatively and thus the potential impact of surgery on psychological morbidity could only be achieved in a longitudinal design in which surgery could be examined as a potential mediating factor.

7.9 Conclusions

Understanding the individual nuances of research, being realistic and problem-solving is just as important and integral within a research environment as they are when working in a clinical setting. In addition to this, I found that learning to manage my time, knowing when to ask for help and advice and knowing when to “*walk away*” from my computer and not allow myself to become “*bogged down*” were very important learning curves in this journey. Undertaking research to this level, in real-life clinical settings, within a constrained time frame is challenging, however the process, challenges and completion of the task to time has allowed me to become a more robust, competent and skilled researcher and clinician.

Appendices

Appendix A: Search key words

Rationale	Database:	Terms:
Body Contouring in Individuals after Bariatric Surgery	International Journal of Obesity The Cochrane Library PsycINFO PsycARTICLES SCOPUS Web of Science Wiley Journals SpringerLink Medline Google Scholar PubMed Ovid Google Scholar	<ul style="list-style-type: none"> • contour* AND bariatric* • plastic AND surg* AND obes* • body AND contour* AND obes* • weight AND contour* • surg* AND post AND bariatric* • post AND obes* AND surg* • contour* AND gastric • body AND contour* • bariatric* AND contour* • plastic AND bariatric* • plastic AND obes* • plastic AND contour* • plastic AND weight • abdomino*AND weight • psych* AND surg* AND contouring • quality of life AND contour* • contour* AND weight
	Google & Yahoo	<ul style="list-style-type: none"> • contouring, obesity, gastric, bariatric, psychosocial, psychological, body re-shaping, weight loss, surgery
	Other	<ul style="list-style-type: none"> • Reference lists of reviewed articles were searched for publications that did not appear in the database search.

Appendix B: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Studies looking at psychological issues associated with body re-shaping/contouring after weight loss surgery.	Studies that were primary based on medical issues and procedures only
Adult >18 population that had undergone weight loss surgery	Participants had undergone non-surgical weight loss
Studies that were written in English.	Papers that were not in English.
Quantitative Studies	Child or adolescent population
Studies that used outcome measures	Book chapter, case studies, conference papers, reviews and opinions
Papers that were peer reviewed.	Papers that were not peer reviewed
Human Population.	Meta-analysis and Literature review papers.
	Papers that did not look at the psychological issues

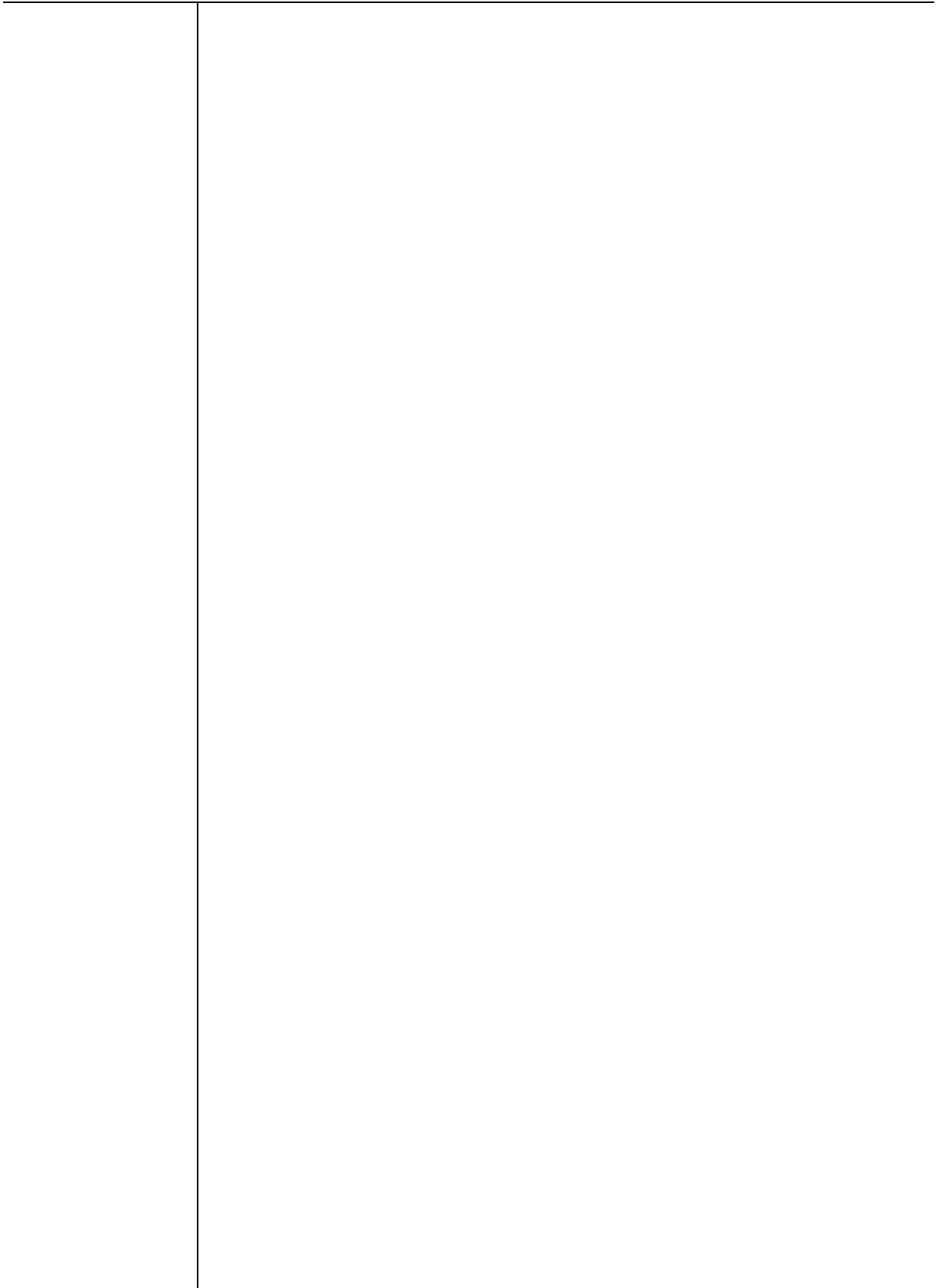
Appendix C Data Extraction Form
(http://www.york.ac.uk/inst/crd/pdf/Systematic_Reviews.pdf)

<p>General Information</p> <ul style="list-style-type: none"> ▪ Author ▪ Title ▪ Country of origin ▪ Source of funding 	<p>Study Characteristics</p> <ul style="list-style-type: none"> ▪ Aims/Objectives ▪ Study design/Methodology ▪ Inclusion/Exclusion criteria ▪ Recruitment procedures
<p>Participant Characteristics</p> <ul style="list-style-type: none"> ▪ Number of participants ▪ Age ▪ Gender ▪ Ethnicity ▪ Control group ▪ % Weight loss ▪ Type of bariatric surgery Procedure ▪ Number of body contouring procedures ▪ Recruitment type 	<p>Data/Results</p> <ul style="list-style-type: none"> ▪ Measures used ▪ Reliable & validated measures ▪ Pre & Post, including timeframes ▪ Results reported, to include: <ul style="list-style-type: none"> ○ statistical Analysis ○ means/confidence intervals and p values ○ withdrawal rates and exclusions ▪ Limitations reported

**Appendix D: STROBE Statement—Checklist of items that should be included in reports
of cross-sectional studies**

Title and abstract	<p>a) Indicate the study’s design with a commonly used term in the title or the abstract</p> <p>(b) Provide in the abstract an informative and balanced summary of what was done and what was found</p>
Introduction	
Background/rationale	Explain the scientific background and rationale for the investigation being reported
Objectives	State specific objectives, including any pre-specified hypotheses
Methods	
Study design	Present key elements of study design early in the paper
Setting	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	(a) Give the eligibility criteria, and the sources and methods of selection of participants
Variables	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	Describe any efforts to address potential sources of bias
Study size	Explain how the study size was arrived at
Quantitative variables	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	<p>(a) Describe all statistical methods, including those used to control for confounding</p> <p>(b) Describe any methods used to examine subgroups and interactions</p>

	(c) Explain how missing data were addressed (d) If applicable, describe analytical methods taking account of sampling strategy (e) Describe any sensitivity analyses
Results	
Participants	a) Report numbers of individuals at each stage of study - e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed. (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram
Descriptive data	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders (b) Indicate number of participants with missing data for each variable of interest
Outcome data	Report numbers of outcome events or summary measures
Main results	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included (b) Report category boundaries when continuous variables were categorized (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	Report other analyses done - e.g. analyses of subgroups and interactions, and sensitivity analyses
Discussion	



Key Results	Summarize key results with reference to study objectives
Limitations	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	Discuss the generalisability (external validity) of the study results
Other Information	
Funding	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.



Health Research Authority

NRES Committee East Midlands - Nottingham 2

The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

22 May 2013

Mr Taljinder Basra
Trainee Clinical Psychologist
Leicestershire Partnership Trust
University of Leicester
104 Regent Road
Leicester
LE1 7LT

Dear Mr Basra,

Study title:	Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, quality of life and body image disturbance?
REC reference:	13/EM/0153
Protocol number:	HESR0615
IRAS project ID:	129523

Thank you for your letter of 03 May 2013, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the Co-ordinator Rachel Nelson, .

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Non-NHS sites

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Covering Letter		28 March 2013
REC application		28 March 2013
Protocol	2	28 March 2013
Investigator CV	Taljinder Basra	03 April 2013
Investigator CV	Noelle Robertson	
Other: Internal Peer Review Form		08 January 2013

Questionnaire: Guidance for Questionnaires	2	28 March 2013
Questionnaire: Demographic Information Sheet	2	28 March 2013
Other: Debrief Form	2	23 March 2013
Questionnaire: The Experience of Shame Scale-Body Shame Items	1	30 January 2013
Questionnaire: Internalized Shame Scale (corrected)	1	30 January 2013
Questionnaire: The Hospital Anxiety and Depression Scale	1	30 January 2013
Questionnaire: Body Image Disturbance Questionnaire	1	30 January 2013
Questionnaire: Quality of Life Questionnaire	1	30 January 2013
Other: Service User Reference Group (SURG)		
Other: Response Letter to Unfavourable REC Decision		20 February 2020
Participant Information Sheet	3	03 May 2013
Participant Consent Form	3	03 May 2013
Letter of invitation to participant	3	03 May 2013
Questionnaire: Internalized Shame Scale		30 January 2013
Response to Request for Further Information		03 May 2013

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "*After ethical review – guidance for researchers*" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

13/EM/0153

Please quote this number on all correspondence

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

With the Committee's best wishes for the success of this project.

Yours sincerely,

PP



Dr Martin Hewitt
Chair

Email: NRESCommittee.EastMidlands-Nottingham2@nhs.net

Enclosures: "After ethical review – guidance for
researchers" [\[SL-AR2\]](#)

Copy to: Dr David Clarke

Appendix F: Research and Development Approval Letter

University Hospitals of Leicester 
NHS Trust

DIRECTORATE OF RESEARCH & DEVELOPMENT

Research & Development Office
Leicester General Hospital
Gwendolen Road
Leicester
LE5 4PW

Director: Professor D Rowbotham

Assistant Director: Dr David Hetmanski

R&D Manager: Carolyn Maloney

Direct Dial: (0116) 258 8351

Fax No: (0116) 258 4226

12/06/2013

Ref: UHL 11258

Title: Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, quality of life and body image disturbance?

Project Status: Project Approved

End Date: 15/04/2014

I am pleased to confirm that with effect from the date of this letter, the above study has Trust Research & Development permission to commence at University Hospitals of Leicester NHS Trust. The research must be conducted in line with the Protocol and fulfil any contractual obligations agreed with the Sponsor. If you identify any issues during the course of your research that are likely to affect these obligations you must contact the R&D Office.

In order for the UHL Trust to comply with targets set by the Department of Health through the 'Plan for Growth', there is an expectation that the first patient will be recruited within 30 days of the date of this letter. If there is likely to be a problem achieving this target, please contact the office as soon as possible. You will be asked to provide the date of the first patient recruited in due course. In addition, the Title, REC Reference number, local target recruitment and actual recruitment for this study will be published on a quarterly basis on the UHL Trust external website.

All documents received by this office have been reviewed and form part of the approval. The documents received and approved are as follows:

Document Name	Version	Date
REC Study Approval Letter	Re-issue from 22/05/2013	30/05/2013
Covering Letter	N/A	28/03/2013
REC Application		28/03/2013
Protocol	V2	28/03/2013
Internal Peer Review Form		08/01/2013
Guidance for Questionnaires	V2	28/03/2013
Demographic Information Sheet	V2	28/03/2013

Debrief Form	V2	23/03/2013
The Experience of Shame Scale - Body Shame Items	V1	30/01/2013
Internalized Shame Scale	V1	30/01/2013
The Hospital Anxiety and Depression Scale	V1	30/01/2013
Body Image Disturbance Questionnaire	V1	30/01/2013
Other As Shamer Scale	V1	30/01/2013
Quality of Life Questionnaire	V1	30/01/2013
Service User Reference Group (SURG)	N/A	N/A
Unfavourable Opinion Letter	N/A	20/02/2013
Participant Information Sheet	V3	03/05/2013
Participant Consent Form	V3	03/05/2013
Letter of Invitation to Participant	V3	03/05/2013
Response to Request for Further Information	N/A	03/05/2013

Please be aware that any changes to these documents after approval may constitute an amendment. The process of approval for amendments should be followed. Failure to do so may invalidate the approval of the study at this trust.

Undertaking research in the NHS comes with a range of regulatory responsibilities. Please ensure that you and your research team are familiar with, and understand the roles and responsibilities both collectively and individually.

Documents listing the roles and responsibilities for all individuals involved in research can be found on the R&D pages of the Public Website. It is important that you familiarise yourself with the Standard Operating Procedures, Policies and all other relevant documents which can be located by visiting www.leicestershospitals.nhs.uk/aboutus/education-and-research

The R&D Office is keen to support and facilitate research where ever possible. If you have any questions regarding this or other research you wish to undertake in the Trust, please contact this office. Our contact details are provided on the attached sheet.

We wish you every success with your research.

Yours sincerely

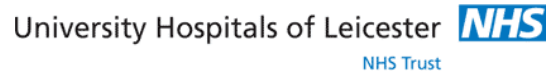
Encs: .R&D Office Contact Information

Appendix G: Ethical Considerations

Potential participants were to be identified by staff (Senior Specialist Dietician or Specialist Laparoscopic Nurse) from the Weight Loss Surgery and Nutrition and Dietetic Department. Participants were posted out a letter informing them about the study (written and signed by a Consultant Surgeon and the Chief Investigator, (see Appendix X)) along with an information pack detailing the study. Participants were asked to follow the instructions (see Appendix X) and to complete the measures (see Appendix X) should they wish to take part. Therefore, the researcher did not need to consult confidential NHS patient records.

- Patients were asked to give basic demographic information (see Appendix X) for the purpose of the study.
- Hard copies of the completed questionnaires were kept in a locked cabinet at the university's Clinical Psychology Department.
- Information pertaining to individual participants was only known to the researcher.
- Participants were made aware that their study responses were be kept securely at the university for five years.
- Patients were required to sign the consent form to affirm that they had read the information and that they gave informed consent to participate in the study (see Appendix X). They were also made aware that they could remove their data from the research project after they had completed the measures until February 2014.
- All participants were made aware that they could contact their G.P, Medical Consultant, a member of their core care team from the Nutrition and Dietetic Service or the Chief Investigator to discuss matters resulting from taking part in the study. Participants were informed that should they experience any psychological distress as a result of this study, a referral for psychological support could be made if appropriate.

Appendix H: Study Introduction Letter



Leicester Royal Infirmary
Leicester
LE1 5WW
Tel: 0300 303 1573
Fax: 0116 258 7565

Dear

Unique Identifying Number:

Re: Research Study titled: **Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, quality of life and body image disturbance?**

We are writing to you because we would like to invite you to take part in a research study looking at whether certain psychological issues impact on weight loss surgery.

It is very important that you understand the research topic and the reasons why it's been carried out. Therefore, please read the Participant Information Sheet carefully.

If you would like to take part after reading the Participant Information Sheet, then please complete all the information in the pack and bring it with you to your next outpatient appointment. If you prefer or don't attend outpatient appointments anymore, you can post the forms directly to the researcher using the pre-paid self-addressed envelope provided.

We wish you all the best and look forward to hearing from you soon.

A handwritten signature in black ink, appearing to be 'David Bowrey'.

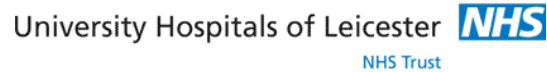
Mr David Bowrey
Consultant Surgeon

A handwritten signature in black ink, appearing to be 'Sukhbir Ubhi'.

Mr Sukhbir Ubhi

University Hospitals of Leicester NHS Trust Headquarters, Level 3, Balmoral Building, Leicester Royal Infirmary, Infirmary Square, LE1 5WW

Appendix I: Patient Information Sheet



Leicester Royal Infirmary
Leicester
LE1 5WW
Tel: 0300 303 1573
Fax: 0116 258 7565

Patient Information Sheet

Study Title

Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, self-esteem, quality of life and body image disturbance?

Invitation to Participate

My name is Taljinder Basra and I am currently studying a doctorate in Clinical Psychology at the University of Leicester. I would like to invite you to take part in a research study that looks at whether self-conscious emotions, such as shame is present in people who have had weight loss surgery more than 12 months ago. This study will also look at whether shame is related to other feeling, such as anxiety, depression, self-esteem, body image disturbance and quality of life. You are invited to take part because you have had weight loss surgery more than 12 months ago and we would like to know whether you have experienced any of these emotions and/or feelings. But before you decide, I would like you to understand why the research is being done and what taking part would involve. Please take your time to read the following information carefully.

The following information will hopefully explain why the research is being done and it will help you decide whether or not you would like to take part. If you decide that you would like more information after you have read this Patient Information Sheet then please contact me or a member of your core care team from the Nutrition and Dietetic Department. Contact details are at the end of this sheet.

What is the purpose of the study?

There are many things that can impact on a person's life after having weight loss surgery. Some of these may be physical and others may be psychological/emotional. One area that has not been looked at is self consciousness, specifically shameful feelings after weight loss surgery.

The purpose of the study is to explore whether feelings of shame are present in individuals who have had weight loss surgery and whether these feelings are related to other psychological issues, such as depression, anxiety, quality of life and body image disturbance. The reasons for looking at this are because there is very little research about these issues and we also don't know whether these feelings/emotions are related to the success of weight loss surgery.

Research in this area is important because we want to help improve and develop the service that patients receive before and after surgery. It is hoped that your participation in this study will help identify what factors impact on a person's life after surgery. This information will also help us to tell other patients about the importance of self-conscious emotions and how these may affect the way a person feels about themselves.

Why have I been invited?

You have been invited because you have had weight loss surgery for more than 12 months and unfortunately, there doesn't seem to be a lot of research in this area. This has led to limited psychological support for people who have had weight loss surgery. This may be because we don't know enough about the psychological difficulties or issues that may arise after surgery. Therefore, your help in this study would be really appreciated and important in developing this.

All patients who have undergone weight loss surgery at The Leicester Royal Infirmary 12 months or longer ago have been invited to take part. A member of your direct care team (Nutrition and Dietetic Department) has looked at their records to make sure that you have been suitably approached about this study.

Do I have to take part?

It is absolutely your choice whether you take part or not. You **DO NOT** have to take part if you do not want to. To take part, you will need to complete the Consent Form in this pack and return it with the completed forms and questionnaires. You can give these to a member of your direct care team from the Nutrition and Dietetic Department during your next outpatient appointment in the envelope provided. If you do not attend outpatient appointments anymore or want to post the forms directly to the researcher, then please use the self addressed envelope in this pack. You do not have to put a stamp on because postage has been paid. If you decide not to take part, don't worry, your normal care will not be affected in any way.

How do I take part?

If you agree to take part, then all you need to do is complete the forms in this pack. This includes the Consent Form, Demographic Information Sheet and six questionnaires. This may take approximately 45 minutes to 1 hour of your time.

You will be given a Unique Identifying Number, which makes sure that you cannot be personally identified from the questionnaires. All the information you provide is kept separately and securely from any identifiable information (i.e. Consent Form). **Please do not put your name on any of the questionnaires.**

Please try and answer **ALL** the questions. If you are not sure about any question or feel uncomfortable, then please talk to the researcher or a member of the bariatric surgery team. All the contact details are listed at the end of this sheet. If any of the questions are not relevant, suitable or you don't want to answer them, then please leave it blank and go onto the next question. Don't worry, there is no right or wrong answer. Once all of this paperwork has been completed and returned, you won't have to do anything else.

What if there is a problem?

If you feel upset or distressed after reading or completing the questionnaires, you can talk directly to the researcher or a member of bariatric surgery team. A referral for psychological support can also be arranged through your Medical Consultant (Bariatric Team) or through a member of the Nutrition and Dietetic team who will be able to arrange this for you.

If you wish to obtain independent advice about any aspect of this study or your treatment, you can contact the Patient Information and Liaison Service (PILS) by telephone 08081 788337, or by writing to the PILS Office Patient Information and Liaison Service, Gwendolen House, Gwendolen Road, Leicester, LE5 4QF.

What if I don't want to continue with the study?

If you decide that you do not want to take part in the study anymore, don't worry, this will **NOT** affect your care/treatment in any way. If you agree to take part and then change your mind, you can ask for your information to be removed from the study before the data is analysed. Data analysis is scheduled to take place in February 2014. You can ask to remove your data anytime before 13th January 2014. Unfortunately, data cannot be removed after that date. To remove your data, please contact any of the team using the contact details below.

Are there any benefits to taking part?

There may not be any direct benefits to you in taking part in this study, but the information you provide may help develop our knowledge and insight into the treatment needs for weight loss surgery patients. This may also help us to provide better care in the future.

Is taking part in the study confidential?

All information that you send to me will be anonymous and kept confidential. It will **NOT** be shared with anyone else. Your completed questionnaires will be kept in a locked cabinet at the University of Leicester's Clinical Psychology Department and

destroyed after five years. Any information that can identify you, such as the Consent Form will be kept separately from the completed questionnaires.

What will happen to the results of the research study?

All the questionnaires returned will be analysed and the results will be written up as part of a research thesis submitted as part of a Clinical Psychology Doctorate. It is also hoped that this study will be published in a research journal at a later date. The results will also be presented to the bariatric surgery clinical team. A copy of the final report will be available from the researcher in the autumn of 2014 should you request it.

Who is funding and organising the study?

The research is being funded by the University of Leicester and is sponsored by Leicestershire Partnership Trust.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people called the Research Ethics Committee. This is to ensure that you are protected and treated fairly and with dignity. This study has also been reviewed by a Service User Reference Group (SURG) in Leicester, my research supervisor, and a member of staff from The University of Leicester.

What do I do now?

If you have any further queries, please contact the researcher at the address below. If you have decided that you would like to take part, please complete the Consent Form and questionnaires. A debrief form has been provided for you to keep. Please give the completed pack (in the sealed envelope provided) to a member of your direct care team at your next outpatient appointment. If you don't attend out-patient appointments anymore, then please post the information to the researcher using the pre-paid self addressed envelope.

Further Information and Contact Details

Taljinder Basra
Trainee Clinical Psychologist
Department of Clinical Psychology
University of Leicester
104 Regent Road
Leicester, LE1 7LT
Email: tb176@le.ac.uk
Tel: 0116 223 1639

Nutrition and Dietetic Department

Jane Calow (Senior Specialist Dietitian - Bariatric Surgery) or Lisa Graham
(Laparoscopic Nurse Specialist)
Leicestershire Nutrition and Dietetic Service
Nutrition and Dietetic Department
Leicester Royal Infirmary
Leicester
LE1 5WW
0116 258 6865
Jane.Calow@uhl-tr.nhs.uk
lisa.graham@uhl-tr.nhs.uk

Thank you for taking the time to read this information.

Appendix J: Consent Form



University Hospitals of Leicester **NHS**

NHS Trust
Leicester Royal Infirmary
Leicester
LE1 5WW
Tel: 0300 303 1573
Fax: 0116 258 7565

Consent Form

Title of the Study: *Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, self-esteem, quality of life and body image disturbance?*

Name of Researcher: Mr Taljinder Basra

Before you make a decision whether you would like to participate in this study, please ensure you have read all the information in this pack.

Please Initial Box

I confirm that I have read and understood the Patient Information Sheet [dated: 03.05.13, Version 3] for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, and without my medical care and legal rights being affected.

I understand that I will be required to complete various questionnaires that will only be seen by the researcher.

I understand that the information I give will remain anonymous when written up for submission as part of a doctoral thesis and/or when submitted for publication in an academic journal.

I understand that the data collected from my participation in this study will be held securely for a minimum of five years.

I understand that confidentiality may have to be breached if I disclose information that suggests that I or another person is or are at risk of harm.

I understand that relevant sections of my medical notes and data collected during the study, may be looked at by individuals from [*Leicester Royal Infirmary*], from regulatory authorities or from the NHS Trust, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.

I agree to take part in the study

Name of Participant:


Date:

Signature:

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Appendix K: Completing Questionnaires



University Hospitals of Leicester 

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Guidance for Completing the Questionnaires

Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, self-esteem, quality of life and body image disturbance?

Please begin by reading the Patient Information Sheet. It is very important that you read that sheet first as it will explain everything about the study and what you need to do if you decide to take. There are **six** questionnaires in this pack. These are:

1. Hospital Anxiety and Depression Questionnaire
2. Body Image Disturbance Questionnaire
3. The Internalised Shame Scale
4. Other as Shamer Scale
5. Experience of Shame Scale
6. Moorehead-Ardelt Quality of Life Questionnaire II

There is also a sheet called the 'Demographic Information Sheet'. This asks you to fill in some basic information about you. I would be most grateful if you could complete this as well.

Each questionnaire has some instructions on how to complete it and each questionnaire is different, so please read the instructions carefully.

Once you have finished the questionnaires there is a debrief form and some contact details for the researcher and independent services should you wish to talk to someone about the study. This is for you to keep. It also contains your unique reference number. Please quote this number when contacting anyone about the study.

Thank You

A handwritten signature in black ink, appearing to read 'Taljinder Basra'.

Taljinder Basra
Clinical Psychologist in Training

University Hospitals of Leicester NHS Trust Headquarters, Level 3, Balmoral Building, Leicester Royal Infirmary, Infirmary Square, LE1 5WW

Version 3

Date 03.05.2013

Appendix L: Demographic Information Sheet



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Unique Identifying Number:

Demographic Information Sheet

Gender: MALE ☐ FEMALE ☐ How old are you?..... Years

Please tick which of these options best describes your ethnic origin.

White	Mixed	Asian or Asian British	Black or Black British	Other ethnic group
<input type="checkbox"/> British <input type="checkbox"/> Irish <input type="checkbox"/> Any other White background	<input type="checkbox"/> White and Black Caribbean <input type="checkbox"/> White and Black African <input type="checkbox"/> White and Asian <input type="checkbox"/> Any other Mixed background	<input type="checkbox"/> Indian <input type="checkbox"/> Pakistani <input type="checkbox"/> Bangladeshi <input type="checkbox"/> Any other Asian background	<input type="checkbox"/> Caribbean <input type="checkbox"/> African <input type="checkbox"/> Any other Black background	<input type="checkbox"/> Chinese <input type="checkbox"/> Any other Ethnic group
<input type="checkbox"/> Prefer not to say				

What Type of Weight Loss Surgery Did You Have? (Please tick):

<input type="checkbox"/> Gastric Bypass <input type="checkbox"/> Gastric Balloon Placement	<input type="checkbox"/> Sleeve Gastrectomy <input type="checkbox"/> Gastric Banding	<input type="checkbox"/> Revisional (redo) Surgery <input type="checkbox"/> Other
---	---	--

When Did You Have The Weight Loss Surgery (Please Tick?)

<input type="checkbox"/> 0 – 6 months ago <input type="checkbox"/> 12 – 18 months ago <input type="checkbox"/> More than 2 years - if more than 2 years please state how approximately how many years here	<input type="checkbox"/> 6 – 12 months ago <input type="checkbox"/> 18 months – 2 years ago
--	--

Please Turn Over

Did you suffer from any of the medical conditions listed below BEFORE the weight loss surgery?

Weight History

Approximate weight just **BEFORE** the Weight Loss Surgery (approximately)?

What is your weight **NOW**?

<input type="checkbox"/> Difficulties breathing <input type="checkbox"/> Difficulties walking or running <input type="checkbox"/> Increased sweating <input type="checkbox"/> Pain in the knees and back	<input type="checkbox"/> Skin conditions such as acne <input type="checkbox"/> Gallstones <input type="checkbox"/> High blood pressure <input type="checkbox"/> High cholesterol	<input type="checkbox"/> Cardiovascular disease (Heart Problems) <input type="checkbox"/> Diabetes <input type="checkbox"/> Osteoarthritis <input type="checkbox"/> Stroke
<input type="checkbox"/> Other (Please list any other medical condition not listed above):		

Have Any of Those Symptoms Improved Since Having The Weight Loss Surgery (Please Tick)?

Condition	Yes	No		Yes	No
Difficulties breathing	<input type="checkbox"/>	<input type="checkbox"/>	Cardiovascular disease (Heart Problems)	<input type="checkbox"/>	<input type="checkbox"/>
Difficulties walking or running	<input type="checkbox"/>	<input type="checkbox"/>	Diabetes	<input type="checkbox"/>	<input type="checkbox"/>
Increased sweating	<input type="checkbox"/>	<input type="checkbox"/>	Osteoarthritis	<input type="checkbox"/>	<input type="checkbox"/>
Pain in the knees and back	<input type="checkbox"/>	<input type="checkbox"/>	Stroke	<input type="checkbox"/>	<input type="checkbox"/>
Skin conditions such as acne	<input type="checkbox"/>	<input type="checkbox"/>	High cholesterol	<input type="checkbox"/>	<input type="checkbox"/>
Gallstones	<input type="checkbox"/>	<input type="checkbox"/>	Skin conditions such as acne	<input type="checkbox"/>	<input type="checkbox"/>
High blood pressure	<input type="checkbox"/>	<input type="checkbox"/>	Other:	<input type="checkbox"/>	<input type="checkbox"/>

Did You Experience Any Complication During Or After The Weight Loss Surgery?


<input type="checkbox"/> Yes	<input type="checkbox"/> No
If Yes, please describe the problem(s)	

Thank You For Completing This Questionnaire

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Appendix M: Internalized Shame Scale



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Internalized Shame Scale

DIRECTIONS: Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding. *Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement.* Use the scale below.

Please Complete All The Items.

0 = Never 1 = Seldom 2 = Sometimes 3 = Frequently 4 = Almost Always

0	1	2	3	4	I feel like I am never quite good enough.
0	1	2	3	4	I feel somehow left out.
0	1	2	3	4	I think other people look down on me.
0	1	2	3	4	All in all, I am inclined to feel that I am a success.
0	1	2	3	4	I scold myself and put myself down.
0	1	2	3	4	I feel insecure about others opinions of me.
0	1	2	3	4	Compared to other people, I feel like I somehow never measure up.
0	1	2	3	4	I see myself as being very small and insignificant.
0	1	2	3	4	I feel I have much to be proud of.
0	1	2	3	4	I feel intensely inadequate and full of self-doubt.
0	1	2	3	4	I feel as if I am somehow defective as a person, like there is something basically wrong with me
0	1	2	3	4	When I compare myself to others I am just not as important.
0	1	2	3	4	I have an overpowering dread that my faults will be revealed in front of others.
0	1	2	3	4	I have a number of good qualities.
0	1	2	3	4	I see myself striving for perfection only to continually fall short.
0	1	2	3	4	I think others are able to see my defects
0	1	2	3	4	I could beat myself over the head with a club when I make a mistake.
0	1	2	3	4	On the whole, I am satisfied with myself.
0	1	2	3	4	I would like to shrink away when I make a mistake.
0	1	2	3	4	I replay painful events over and over in my mind until I am overwhelmed.
0	1	2	3	4	I feel I am a person of worth at least on an equal plane with others.
0	1	2	3	4	At times I feel like I will break into a thousand pieces.
0	1	2	3	4	I feel as if I have lost control over my body functions and feelings.
0	1	2	3	4	Sometimes I feel no bigger than a pea.
0	1	2	3	4	At times I feel so exposed that I wish the earth would open up and swallow me.
0	1	2	3	4	I have this painful gap within me that I have not been able to fill.
0	1	2	3	4	I feel empty and unfulfilled
0	1	2	3	4	I take a positive attitude toward myself.
0	1	2	3	4	My loneliness is more like emptiness.
0	1	2	3	4	I always feel there is something missing.

Appendix N: Other As Shamer



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Other As Shamer Scale

DIRECTIONS: Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have many of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below.

Do Not Omit Any Item. Scale

0 = Never 1 = Seldom 2 = Sometimes 3 = Frequently 4 = Almost Always

0	1	2	3	4	I feel other people see me as not good enough
0	1	2	3	4	I think that other people look down on me
0	1	2	3	4	Other people put me down a lot
0	1	2	3	4	I feel insecure about others opinions of me
0	1	2	3	4	Other people see me as not measuring up to them
0	1	2	3	4	Other people see me as small and insignificant
0	1	2	3	4	Other people see me as somehow defective as a person
0	1	2	3	4	People see me as unimportant compared to others
0	1	2	3	4	Other people look for my faults
0	1	2	3	4	People see me as striving for perfection but being unable to reach my own standards
0	1	2	3	4	I think others are able to see my defects
0	1	2	3	4	Others are critical or punishing when I make a mistake
0	1	2	3	4	People distance themselves from me when I make mistakes
0	1	2	3	4	Other people always remember my mistakes
0	1	2	3	4	Others see me as fragile
0	1	2	3	4	Others see me as empty and unfulfilled
0	1	2	3	4	Others think there is something missing in me
0	1	2	3	4	Other people think I have lost control over my body and feelings

Thank you. You have come to the end of this questionnaire.

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Version 1

Date 30.01.13

Appendix O: Experience of Shame Scale – Body Shame



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The Experience of Shame Scale- Body Shame items

Everybody at sometime time can feel embarrassed, self-conscious, ashamed or disgusted and the following questions are about these feelings. Please read each question carefully and answer each question as honestly as you can. There is no right or wrong answer. Please indicate your response by **ticking** the box that applies to you.

Since your **Weight Loss Surgery**, have you experienced any of the following?

QUESTION	NOT AT ALL	A LITTLE	MODERATELY	VERY MUCH
1. Have you felt ashamed of your body or any part of it?				
2. Have you worried about what other people think of your appearance?				
3. Have you avoided looking at yourself in the mirror?				
4. Have you wanted to hide or conceal your body and any part of it?				
5. Have you ever felt disgusted by your body or any part of it?				
6. Have you worried that other people might be disgusted by your appearance?				
7. Have you avoided touching part of your body because you feel disgusted by it?				
8. Have you wished you could clean up or remove or disinfect your body or any part of it?				

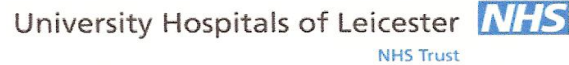
You have reached the end of this questionnaire. Thank you for taking the time to complete this.

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Date 30.01.13

Appendix P: Hospital Anxiety and Depression Scale



The Hospital Anxiety and Depression Scale

This questionnaire is designed to help us know how you feel. Read each item and place a firm tick in the box opposite the reply, which comes closest to how you have been feeling in the past week.

Don't take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought-out response.

Tick one box only in each section


D	A		D	A	
		I feel tense or 'wound up':			I feel as if I am slowed down:
	<input type="checkbox"/>	Most of the time		<input type="checkbox"/>	Nearly all the time
	<input type="checkbox"/>	A lot of the time		<input type="checkbox"/>	Very often
	<input type="checkbox"/>	From time to time, occasionally		<input type="checkbox"/>	Sometimes
	<input type="checkbox"/>	Not at all		<input type="checkbox"/>	Not at all
		I still enjoy the things I used to enjoy:			I get a sort of frightened feeling like "butterflies" in the stomach:
<input type="checkbox"/>		Definitely as much		<input type="checkbox"/>	Not at all
<input type="checkbox"/>		Not quite so much		<input type="checkbox"/>	Occasionally
<input type="checkbox"/>		Only a little		<input type="checkbox"/>	Quite Often
<input type="checkbox"/>		Hardly at all		<input type="checkbox"/>	Very Often
		I get a sort of frightened feeling as if something awful is about to happen:			I have lost interest in my appearance:
	<input type="checkbox"/>	Very definitely and quite badly		<input type="checkbox"/>	Definitely
	<input type="checkbox"/>	Yes, but not too badly		<input type="checkbox"/>	I don't take as much care as I should
	<input type="checkbox"/>	A little, but it doesn't worry me		<input type="checkbox"/>	I may not take quite as much care
	<input type="checkbox"/>	Not at all		<input type="checkbox"/>	I take just as much care as ever
		I can laugh and see the funny side of things:			I feel restless as I have to be on the move:
<input type="checkbox"/>		As much as I always could		<input type="checkbox"/>	Very much indeed
<input type="checkbox"/>		Not quite so much now		<input type="checkbox"/>	Quite a lot
<input type="checkbox"/>		Definitely not so much now		<input type="checkbox"/>	Not very much
<input type="checkbox"/>		Not at all		<input type="checkbox"/>	Not at all
		Worrying thoughts go through my mind:			I look forward with enjoyment to things:
	<input type="checkbox"/>	A great deal of the time		<input type="checkbox"/>	As much as I ever did
	<input type="checkbox"/>	A lot of the time		<input type="checkbox"/>	Rather less than I used to
	<input type="checkbox"/>	From time to time, but not too often		<input type="checkbox"/>	Definitely less than I used to
	<input type="checkbox"/>	Only occasionally		<input type="checkbox"/>	Hardly at all
		I feel cheerful:			I get sudden feelings of panic:
<input type="checkbox"/>		Not at all		<input type="checkbox"/>	Very often indeed
<input type="checkbox"/>		Not often		<input type="checkbox"/>	Quite often
<input type="checkbox"/>		Sometimes		<input type="checkbox"/>	Not very often
<input type="checkbox"/>		Most of the time		<input type="checkbox"/>	Not at all
		I can sit at ease and feel relaxed:			I can enjoy a good book or radio or TV Program:
	<input type="checkbox"/>	Definitely		<input type="checkbox"/>	Often
	<input type="checkbox"/>	Usually		<input type="checkbox"/>	Sometimes
	<input type="checkbox"/>	Not Often		<input type="checkbox"/>	Not often
	<input type="checkbox"/>	Not at all		<input type="checkbox"/>	Very seldom

Thank you, you have reached the end of this questionnaire

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Appendix Q: Body Image Disturbance Questionnaire



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Body Image Disturbance Questionnaire

This questionnaire assesses concerns about physical appearance.

Please read each question carefully and circle the answer that best describes your experience.

Please also write in answers where indicated.

1. Are you concerned about the appearance of some part(s) of your body which you consider especially unattractive? (Circle the best answer)

1	2	3	4	5
Not at all concerned	Somewhat concerned	Moderately concerned	Very concerned	Extremely concerned

What are these concerns? What specifically bothers you about the appearance of these body parts?

1	2	3	4	5
Not at all preoccupied	Somewhat preoccupied	Moderately preoccupied	Very preoccupied	Extremely preoccupied

What effect has your preoccupation with your appearance had on your life? (Please describe):

3. Has your physical “defect” often caused you a lot of distress, torment, or pain? How much? (Circle the best answer)

1	2	3	4	5
No distress	Mild, and not too disturbing	Moderate and disturbing but still manageable	Severe, and very disturbing	Extreme and disabling

4. Has your physical “defect” caused you impairment in social, occupational or other important areas of functioning? How much? (Circle the best answer)

1	2	3	4	5
No limitation	Mild interference but overall performance not impaired	Moderate, definite interference but still manageable	Severe, causes substantial impairment	Extreme, incapacitating

5. Has your physical “defect” significantly interfered with your social life? How much? (Circle the best answer)

1	2	3	4	5
Never	Occasionally	Moderately often	Often	Very often

If so, how?

6. Has your physical “defect” significantly interfered with your schoolwork, your job, or your ability to function in your role? How much? (Circle the best answer)

1	2	3	4	5
Never	Occasionally	Moderately often	Often	Very often

If so, how?

7. Do you ever avoid things because of your physical “defect”? How often? (Circle the best answer)

1	2	3	4	5
Never	Occasionally	Moderately often	Often	Very often

If so, what do you avoid?

Thank you, you have come to the end of this questionnaire

Unique Reference Number _____

Version 1

Date 30.01.13

Appendix R: Moorehead-Ardelt Quality of Life Questionnaire



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QUALITY OF LIFE QUESTIONNAIRE

Please make a check in the box provided to show your answer.

1. Usually I Feel....


☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐


Very badly about myself

Very good about myself

2. I Enjoy Physical Activities....


☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all



Very much

3. I Have Satisfactory Social Contacts....


☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

None



Very many

4. I Am Able to Work....


☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all



Very much

5. The Pleasure I Get Out of Sex Is....


☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Not at all



Very much

6. The Way I Approach Food Is....


☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

I live to eat



I eat to live

Thank you, you have come to the end of this questionnaire.


Unique Reference Number _____

Version 1

Date 30.01.13

Appendix S: Debrief Sheet



University Hospitals of Leicester 

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Leicester
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Tel: 0300 303 1573

DEBRIEF FORM

Are self-conscious emotions present in weight loss surgery patients and are they related to depression, anxiety, self-esteem, quality of life and body image disturbance?

Researcher: Taljinder Basra, Trainee Clinical Psychologist

You have reached the end of the study. Once you have completed the questionnaires, please seal them in the envelope provided and bring them to your next outpatient appointment. If you don't attend outpatient appointments anymore with the Nutrition and Dietetic Department at The Leicester Royal Infirmary, then please return them in the pre-paid self addressed envelope to the researcher provided.

Once again, thank you for taking parting this study, your support is valued.

If you later decide that you no longer want your data to be used as part of this study, don't worry, and contact the researcher who will discuss this with you.

If you have any queries, please do not hesitate to contact the researcher using your unique reference number shown above:

Taljinder Basra
Clinical Psychologist in Training

Department of Clinical Psychology
University of Leicester
104 Regent Road
Leicester
LE1 7LT
Email: tb176@le.ac.uk

Thank you for participating.

Appendix T: Cronbach's alpha

Measure	Cronbach's alpha
Hospital Anxiety and Depression Scale (HADS)	.900
Externalized Shame Scale (ESS - Body Shame)	.876
Other As Shame scale (OAS)	.966
Morehead Quality of Life scale	.736
Internalized Shame Scale (ISS)	.972
Internalized Shame Scale- Self Esteem (ISSE)	.865
Body Image Disturbance Questionnaire (BIDQ)	.932

Appendix U: Kolmogorov-Smirnov

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total HADS Anxiety	.092	80	.093	.972	80	.080
Total HADS Depression	.058	80	.000	.890	80	.000
Total SHAME	.084	79	.000	.849	79	.000
Means for BIDQ	.069	78	.200 [*]	.968	78	.048
Total QOL	.089	80	.087	.978	80	.079
Total ISS Self Esteem	.086	80	.200 [*]	.980	80	.299
Total OAS	.074	79	.200 [*]	.950	79	.004

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Transformed depression scale (HADS) results.

Tests of Normality - Kolmogorov-Smirnov ^a			
Scale	Statistic	df	Sig.
HADS Depression	.099	80	.050

a. Lilliefors Significance Correction

Appendix V: Body Image Disturbance Questionnaire Open Ended Questions

The BIDQ encompasses five open-ended questions. These are:

1. Are you concerned about the appearance of some part(s) of your body which you consider especially unattractive? What specifically bothers you about the appearance of these body parts?
2. What effect has your preoccupation with your appearance had on your life?
3. Has your physical “defect” significantly interfered with your social life?
4. Has your physical “defect” significantly interfered with your schoolwork, your job, or your ability to function in your role?
5. Do you ever avoid things because of your physical “defect”

Appendix W: Qualitative themes identified from the Body Image Disturbance Questionnaire

Themes	Example Anonymous Quotes
<i>Body Image</i>	<p data-bbox="516 457 1437 552">“My arms and stomach are horrendous. I have so much loose skin, I get very depressed”</p> <p data-bbox="516 625 1421 720">“I’m really embarrassed because I have lots of loose skin at the tops of my leg and arms and my tummy still hangs”</p> <p data-bbox="516 793 1079 825">“My belly is disgusting and flabby, I hate it”</p> <p data-bbox="516 898 1356 930">“I look and feel worse then I did before I had weight loss surgery”</p> <p data-bbox="516 1003 1274 1035">“I look better when I was fat, at least there was no sagging”</p> <p data-bbox="516 1108 1356 1140">“My wrinkled and loose skin is like someone who is 70 years old”</p> <p data-bbox="516 1213 868 1245">“I look like a saggy teabag”</p> <p data-bbox="516 1318 1388 1413">“I have loose skin everywhere and excessive sweating in the folds of skin. I worry I might smell horrible”</p> <p data-bbox="516 1486 1339 1581">“I never seem to relax and enjoy general life because I’m always obsessed with my body image”</p> <p data-bbox="516 1654 1209 1686">“My breasts are disgusting, they look like crêpe paper”</p> <p data-bbox="516 1759 1323 1791">“My sagging and fleshing skin looks like empty cow’s udders”</p>

	<p>“I look like a freak from a freak show”</p>
<p><i>Emotional & Personal Impact</i></p>	<p>“I am so self-conscious, I don’t go swimming or wear clothes that may showing my saggy skin”</p> <p>“I have a less active sex life, low self-esteem, lack of confidence and I am always worried people are judging me”</p> <p>“I’m constantly looking for people to tell me that I look good but they never do”</p> <p>“I have to be very careful what I wear so that other people can’t see the extra skin hanging down”</p> <p>“No one wants me I’m not good enough for anyone”</p> <p>“I panic at the thought that anyone (potential partner) would see me naked so I don’t go on dates”</p> <p>“I can hear my sagging skin move from side to side when I move; it makes me sick”</p> <p>“I just feel inept and not good enough”</p> <p>“I feel let down by the NHS because they told me I could have my saggy skin removed but now they’ve changed their mind and moved the goalposts”</p> <p>“I’m so depressed because of my saggy stomach and the NHS won’t remove it”</p> <p>“I have to buy clothes there are still too big and baggy to cover my spare</p>

	<p>skin”</p> <p>“I can’t stop thinking about what others would say if they saw my body, that’s why I’m single again”</p> <p>“The skin is just eating at me mentally”</p> <p>“I am extremely embarrassed how visible the defects are. I am very careful to find clothes which covered the bags of fat”</p> <p>“I never feel as good as anyone else”</p> <p>“I cry in the summer when thin people looked so lovely and I feel I can’t help myself, and still carry on eating”</p>
<i>Social Impact</i>	<p>“I don’t swim, socialise or buy clothes, what’s the point?”</p> <p>“I am so embarrassed at my wobbly skin and uneven breasts that people think I am still too fat to be out with”</p> <p>I hide at the back for photos, I don’t want to draw attention to myself”</p> <p>“I won’t take part in certain social activity if it means my body is likely to become one show”</p> <p>“I just prefer not to have a social life, it’s easier that way”</p> <p>“I can’t go on holiday, people will see what I really look like, and I hate it”</p> <p>“I don’t go out, I will find any excuse to get out of it because people</p>

	<p>might see my disgusting skin”</p> <p>“I can’t exercise as my skin moves so much it can hurt”</p> <p>“I would love to go line dancing but I’m too embarrassed”</p> <p>“I feel ashamed and unattractive of my body and I have no confidence to go out and socialise”</p> <p>“I hate walking with people as they will be able to hear my legs clapping together”</p>
<i>Impact on Role(s)</i>	<p>“I do not engage in any physical relationship with my husband”</p> <p>“I won’t be seen naked by anyone, including my wife”</p> <p>“I no longer have sex as I’m too embarrassed by my loose skin”</p> <p>“I don’t work so I can stay covered up at all times, I don’t have anybody staring if I have to change”</p> <p>“I always wear a bra, even in bed with my partner, he never sees my boobs”</p> <p>“I never let my husband see me naked”</p> <p>“I refuse to go swimming with my children and I feel so guilty”</p> <p>“Colleagues at work have commented that I’d rather be dead than have all that loose skin. How can you live with that?”</p> <p>“I have loose skin everywhere, I hate how I feel when my partner sees me and touches me”</p>

	<p>“I can’t bear to look at myself or allow my husband to see me naked, we have no physical relationship”</p> <p>“I feel guilty all the time. I have a very strained relationship with my husband, and it’s all my fault. He’s very supportive, but that makes me feel worse”</p> <p>“I still can’t do some things at work because my tummy gets in the way”</p> <p>“I’m just too embarrassed to be with a man”</p> <p>“I cannot let my husband see me like this unless it’s by accident”</p> <p>“I have missed or rearranged meetings at work because I smelt and needed a shower”</p>
<i>Avoidance</i>	<p>“I’m too embarrassed to meet new people, I avoid going out, exercising, going on holidays, or attending social events”</p> <p>“I won’t join in anywhere where I might have to show my saggy skin, I can’t even go to fancy dress party”</p> <p>“I won’t look in the mirror”</p> <p>“I don’t go out where I have to change”</p> <p>“I don’t go to the gym or swim any more, I’m too scared of what people might think after seeing my saggy skin”</p> <p>“I avoid walking or any physical exercise where my fat/skin will</p>

	<p>bounce”</p> <p>“I avoid social occasions because I don’t feel comfortable around people. I feel I look awful with bingo wings and my clothes never look right”</p> <p>“I avoid going to restaurants because I can’t get through the narrow gaps between the tables in crowded rooms”</p>
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