Post-surgical cliff after weight loss surgery: accounts of patients and their health care professionals

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SYSTEMATIC REVIEW

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Abstract

Background: Little is known about the psychological effects of bariatric surgery. This review aimed to assess long term effectiveness of bariatric surgery on psychosocial quality of life (QoL) of obese adults compared to non-surgical interventions.

Methods: A systematic review of the literature was conducted, six electronic databases, plus other relevant sources were searched from inception to January 2014. The main outcome sought was a QoL measure with a minimum 12 months follow-up. Three reviewers screened records, extracted data and independently read through full articles for eligibility and quality using standardised forms. Findings were analysed using narrative synthesis.

Results: Of 4383 identified references included in the review, 11 studies showed bariatric surgery to be effective long term for overall QoL than non-surgical treatments with specifically modest benefits psychosocially. Significant improvements in psychosocial QoL alongside improved physical QoL were observed after 2 year follow-up post-surgery compared to non-surgical interventions. However improvements in psychosocial QoL after surgery at 10 year follow up were minimal when compared to non-surgical interventions. When compared to untreated control groups, long term psychosocial QoL did not improve after bariatric surgery despite major improvements in physical QoL, significant weight loss and co-morbidities.

Conclusions: Results on long term psychosocial QoL remain uncertain with some suggestion of psychological disorder persisting. This highlights need for psychological intervention post-surgery and further research to provide more data on long-term psychosocial QoL following bariatric surgery.

Key words: bariatric surgery, weight loss, psychosocial, quality of life

Background

Obesity is a major health problem worldwide and has reached epidemic proportions in Western society and the UK [1] [2], making it an extremely important public health issue in its contribution to major diseases. [3-5]. Obesity can also be a psychosocial burden, often resulting in social stigma and negatively affecting individuals' underlying mental health and self-esteem [6-8].

Obesity can be managed using dietary advice, exercise, lifestyle changes and medication to induce weight loss. Weight loss of 5 to 10% has been associated with significant reductions in co-morbidities and mortality [9]. However it is very difficult for obese adults to lose weight through lifestyle choices in these circumstances and a high proportion who attempt to lose weight through traditional weight loss methods either experience minimal weight loss maintenance or regain the weight over time [10]. Bariatric surgery (BS) is increasingly used when all other treatments such as physical activity and diet have failed [11, 12] with statistics from the Health & Social Care Information Centre showing a 6 fold increase in the procedure due to obesity diagnosis between years 2002-03 to 2012-13 in the UK [13, 14].

Current literature has shown BS to be a more effective treatment for severe obesity as part of an overall weight management strategy, when compared to the traditional behavioural interventions [15], achieving significant weight loss in people with a BMI of 30kg/m² (including those with more severe obesity), longer term maintenance of weight loss and improvements in co-morbidities compared to non-surgical obesity management. Aside from significant long term weight loss, long-term studies such as Robinson [16] and systematic reviews have demonstrated recovery from diabetes, improvement in cardiovascular risk factors, and a reduction in mortality following BS [17-19]. This approach to obesity takes a clear physiological perspective to health improvement which may mask underlying psychological issues.

A growing awareness of the importance of psychological and social influences on health and illness has led to the development of a biopsychosocial framework [20] for research and intervention, influencing the inclusion of assessing patients' health-related quality of life (HRQoL) in clinical and research settings, where the inseparable nature of physical, psychological and social factors are taken into account [21]. Saying this, research into psychosocial QoL in bariatric surgery patients is sparse. This may be because data collected in this area is mainly based on subjective self-reported HRQoL measures which tend to compare unfavourably to 'stronger' evidence from physiological, psychological and biochemical tests [21-26]. Another reason may be the fact that health professionals working

in this area are largely trained in the medical model [27, 28] where focusing on physiological issues is more natural than adopting the biopsychosocial approach to patient care.

However, a substantial proportion of people eligible for BS have a history of eating disorders or mental health problems [29, 30]. Research looking at psychological predictors of obesity presents complex findings and is not well understood [31-33]. However, some studies have found certain psychological factors in obese individuals like depressive symptoms, post-surgery emotional struggles and dichotomous thinking that may contribute to weight regain [34-36] Can weight loss through BS alone address these underlying psychological conditions that possibly contributed to the obesity in the first place?

The National Institute for Health and Clinical Excellence (NICE) commissioning guidance for bariatric surgical service [37] highlights the need for a multidisciplinary approach which includes psychological intervention before and after surgery in order to achieve high quality obesity treatment for patients. However despite these recommendations and recognition that this patient group experiences long-term psychological and social difficulties, the provision of psychological interventions alongside and following BS is not well established in the UK, with focus mainly being on physical aspects like diet and exercise in the NHS [38].

Why is it important to do this review?

Previous systematic reviews reporting on quality of life (QoL) as a main or secondary outcome, concluded that although BS improves short term (two years) health-related quality of life (HRQoL) in obese adults, longer term (ten years) effects were less clear [39] with some measures showing significantly greater change after surgery, but not others. However, not all the studies included in the systematic reviews assessed QoL and outcome data for QoL was unclear for almost half of the studies reviewed, thus making it difficult to make clear judgements about the impact of weight loss interventions on longer term quality of life [18 & 19]. As such both reviews highlighted a need for good-quality, long-term randomised controlled trials (RCTs) that include an assessment of patient QoL following BS.

Assessing psychosocial QoL within BS could contribute to greater understanding of the postsurgical psychological and behavioural changes in patients. BS specialists and service providers highlight the importance of the patient adjusting their behaviour accordingly to accommodate compliance to a strict diet and exercise post-surgery. Achieving significant weight loss even through BS is a journey of behavioural adjustment over years and the link between psychological distress and obesity may continue on after BS [40, 41]. It is therefore important to establish whether psychosocial QoL improvements following surgery are stable

and prolonged enough to buffer long term behavioural change and help reduce the psychological distress.

This review aims to find out whether BS is more effective on long term QoL compared to non-surgical behavioural interventions that try to tackle the underlying psychosocial factors associated with obesity. More specifically, does BS alone improve psychosocial QoL in individuals in the long term?

Methods

Types of studies

RCTs, controlled clinical trials and prospective cohort studies comparing surgical interventions with non-surgical treatment (behavioural OR medical management OR no treatment) reporting on all the following:

- Original research on pre and postoperative QoL or psychosocial wellbeing variables following BS.
- Postoperative QoL measures for a minimum of 12 months. No maximum cap on follow up period was imposed. No discreet definition of long term was presented however, following previous review findings [42] studies reporting over 5 year follow up periods were classed as longer term.

Participants

Adults defined as aged 18 years and over, fulfilling standard definition of obese, i.e. BMI of 30 or over according to relevant national guidelines. Studies including participants with a previous history of BS were excluded.

Types of interventions

Any type of currently performed bariatric surgery procedure compared to non-surgical treatment. Non-surgical treatments included usual obesity management or usual care, behavioural/medical management inclusive of low calorie diet, physical exercise, psychological therapies or counselling and medication. Studies assessing QoL outcomes between types of bariatric surgery only were excluded.

Types of outcome measures

• Quality of life (QoL), measured using a validated instrument
• Psychological wellbeing, measured using a validated instrument

Search methods for identification of studies

Electronic searches

The following electronic databases were searched for identifying potentially eligible studies:

• The Cochrane Library (07/11/2015);

• PubMed via NCBI (until 07/11/2015);

• MEDLINE (until date 07/11/2015);

• PsychINFO via EBSCO (until 07/11/2015);

• ScienceDirect (until 07/11/2015);

• JSTOR (until 07/11/2015).

Studies were identified from these databases by searching all years until the end dates specified above.

Searching other resources

Key journals' tables of contents (International Journal of Obesity, The European Journal of Obesity, Obesity Reviews and Obesity Surgery) were hand searched, and reference lists of relevant trials and systematic reviews identified were examined, up to 7th November 2015. Several authors were also contacted to obtain additional information for five unpublished trials, four of which were listed as completed. The fifth trial recently finished recruitment and is in follow-up [43]. Only one of the authors [44] from the four completed unpublished trials responded, stating the trial was in the process of data analysis.

Data collection and analysis

Selection of studies

One reviewer independently screened through all the titles and citations retrieved from the database searches. Eligibility criteria were applied to the full article using a standardised form by two reviewers independently. Studies not available in English language were excluded due to lack of funding for translating services.

Data Extraction and Analysis

Data on participants, interventions, outcomes and quality of the studies was extracted from all included papers and tabled. Specifically, information on changes in QoL from baseline (before surgery) to post surgery and weight change (e.g. BMI, percent excess weight change) was collected if reported. Study characteristics and outcome data were extracted by one reviewer (SJ) and checked independently by another (CN or SLJ).

Study quality was assessed using the Effective Public Health Practice Project (EPHPP) “Quality Assessment Tool for Quantitative Studies”, developed for use in public health

research [45] a robust tool with appropriate psychometric properties to adequately assess quality of evidence [46]. Included studies were assessed for homogeneity and synthesis via meta-analysis ruled out due to the extreme heterogeneity in participant selection criteria, interventions e.g. two different BS procedures within a surgery group) and QoL outcome measures therefore pooling results according to any of these characteristics would leave highly heterogeneous groups. Moreover, a meta-analysis could not be done because of variations in study design and lack of RCTs amongst the included papers. Indeed not all healthcare questions can be addressed by RCTs, and meta-analysis in systematic reviews is not always possible or sensible [47, 48]. Ignoring issues of heterogeneity and assuming homogeneity in order to justify meta-analysis often results in misleading findings [49]. Instead a narrative analysis was conducted as a best case alternative, able to cope with this variation [50] using methodological guidance outlined in Thomas et al [45] and reported according to the framework recommended by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (www.prisma-statement.org), providing an analysis of the relationships within and between studies and an overall assessment of the robustness of the evidence.

Results

Firstly an overview of the included studies is provided including study quality and participant characteristics, followed by analyses of QoL outcomes following BS compared to non-surgical treatments with specific focus on psychosocial QoL components.

Out of the 4383 references yielded from the electronic databases search and 49 references from other sources, de-duplication and removal of irrelevant titles provided 1443 references. From subsequent screening, selection against set criteria and independent reviewing of 127 full papers (see Supplementary Material 1) by three authors [SJ, CN and SLJ] for inclusion and quality, 11 studies fulfilled the inclusion criteria (Figure 1). These studies compared contemporary bariatric procedures (Gastric Bypass, Gastric Banding and Banded Gastroplasty) to several non-surgical weight loss treatments, obese treatment seeking groups or obese control groups. Table 1 shows a descriptive summary of all included studies.

Quality

Two of the eleven included studies were RCTs [51, 52]. Six of the studies included in this review had a strong overall quality rating, according to the EPHPP quality assessment tool used (Table 2). The other five were rated as moderate. Drop-out rates for each group and reasons for drop-out were reported by all of the studies apart from Batsis et al [53], as study

data was collected using a onetime retrospective survey. The strength of scientific quality for each individual study is covered alongside findings in the narrative synthesis.

Representativeness

All participants from included studies were severely obesity, with a common definition of BMI being greater than 40 or the additional criteria of BMI equal or greater than 30 with co-morbid disease. One participant in Buddeberg-Fischer et al [54] with a BMI of 31.6 kg/m² had special indications for BS. The most commonly cited co-morbidities were diabetes and cardiovascular disease. The individual study sample size ranged from 43 to 1276 [52, 39]. The majority of participants in the studies were female and mean age ranged from 39 years [55] to 48 years [39] which is representative of the BS population in the UK [14]

Group differences in baseline characteristics were noted in most of the studies apart from the four controlled trials [51, 52, 56, 39] and Buddeberg-Fischer et al [54]. The general trend being that the surgery group tended to be significantly younger, with greater weight or BMI than the no surgery group [55] or population based obese control group [57-60]. Batsis et al [53] reported more males, lower incidence of diabetes and lower BMI in their no surgery group compared to the surgery group. Buddeberg-Fischer et al [54] also found within group differences in their surgery group where all patients with BMI equal or greater than 50 received Roux-en-Y gastric bypass (RYGBP). The rest of the surgery group received laparoscopic adjustable gastric banding (LAGB).

Outcomes measures

Measures of weight change reported by studies ranged from BMI, change in BMI, weight, weight loss, percent weight loss and percent excess weight loss. All the studies reported measures of variability such as confidence intervals or standard deviations. However, the direct comparison of values between studies is questionable due to the different measures reported.

Similarly QoL was assessed using various measures, most commonly the SF-36 Health questionnaire and Impact of Weight on Quality of Life-lite (IWQoL-lite) questionnaire. Other measures used were the EuroQol 5 Dimensions (EQ-5D) scale [51, 52], Linear Analogue Self Assessment (LASA) questionnaire and SF-12, a short form of the SF-36 [53], the Psychosocial Stress and Symptom Questionnaire [54], the Current Health Scale, Mood Adjective Checklist (MACL), Obesity-related Problems Scale (OP) and Sickness Impact Profile (SIP).

Long term follow up

Duration of QoL follow-up ranged from 12 months [51, 52, 55] to 10 years [39] however, most studies followed up participants between 2 to 6 years (Table 1). To assess long term effectiveness of BS on psychosocial QoL, QoL outcomes between BS and non-surgical interventions were compared over time. Two subgroups were identified in the non-surgical group, namely; those receiving lifestyle modification or conventional treatment and population controls who received no treatment. Therefore analysis was split further into BS vs. non-surgical weight loss treatments and BS vs. controls. As described in Table 1, the included studies predominantly used (laparoscopic) gastric banding and gastric bypass.

Quality of Life in Bariatric Surgery vs. Non-surgical Weight Loss Treatments

Four studies were identified in this group, namely two RCTs [51, 52], a prospective cohort study [55] and one controlled trial [39], reporting QoL outcomes over a 1 year follow up period [51, 52, 55] and at 10 years [39]. Canetti et al [55] examined psychosocial factors on the treatment outcomes of BS and a weight-loss program (which combined diet, behaviour modification and exercise). The RCTs assessed QoL outcomes in obese Type 2 Diabetic patients following LAGB [51] or RYGBP [52] compared to an intensive diabetes medical weight management program (WhyWAIT). QoL was measured using the SF-36 health questionnaire in all three studies although the RCTs also used the EQ-5D and IWQOL. At 1 year follow up, all three studies found that both the BS and non-surgical treatment groups experienced QoL improvements over time and evidenced more significant weight loss in the BS groups. Specific to SF-36 scores, the BS patients in Canetti et al [55] showed significantly greater improvement in every QoL subscale compared to the diet group. The diet group showed significant improvements in three of the eight SF-36 subscales (subscales unspecified) and the total score over the year. In Halperin et al [52] QoL improvements based on SF-36 scores and EQ-5D visual analogue scores were similar between groups. However a significant change in mental health scores from baseline to one year was noted within the WhyWAIT group. The paper also states no significant change within or between groups for EQ-5D index scores (figures unreported). Again with the IWQOL, QoL scores improved significantly following both RYGBP and Why WAIT after a year, however the magnitude of improvement was significantly greater in the BS group. The other RCT [51] also found QoL scores from baseline to one year across all measures improved similarly between the two groups. However, a significant within group QoL improvement in total and mental health scores of the SF-36 scores for the WhyWAIT group was observed after one year. Overall, these studies show moderate quality evidence of similar improvements in QoL from BS and non-surgical weight loss treatments in obese individuals with some inference of more positive impact on psychosocial QoL following

medical weight management and more positive impact on physical QoL after BS at one year follow up.

Results from Karlsson et al [39] who assessed health related QoL in 1276 participants using a battery of generic and obesity specific measure over ten years, showed significant improvements in all health related QoL measures in BS patients compared to patients receiving conventional treatment (described as unstandardised and varied treatment regimens according to local practices) overall. In the BS group, QoL improvements peaked during the first year of weight loss, whereas the weight regain phase (mainly between 1 and 6 year follow-up) was accompanied by a gradual decline in health related QoL. The latter period of 6 to 10 years saw relatively stable observations in both weight and QoL. Overall at 10 years increases in all health related QoL domains in the BS group were noted compared to baseline. The conventional group observed small initial improvements which were mostly lost within 2 years with some health related QoL domains like obesity-related psychosocial problems and anxiety improving at the end of the observation period. However long-term outcomes were mixed for the conventional group. This study provides strong evidence that BS has a significantly positive long term effect on health related QoL (including psychosocial functioning) when compared to conventional weight loss treatment.

Quality of life in Bariatric Surgery vs. Control Groups

Studies in this group comprised one controlled trial and six prospective longitudinal cohort studies reporting QoL results over a follow up period from 2 to 6 years. There were two studies that assessed QoL in BS participants against controls for two years [57, 58]. Both studies along with Koloktin et al [60] and Adams et al [59] form part of the Utah Obesity Study, an ongoing prospective study of GB patients that includes 2 obese control groups; those seeking but not undergoing GB (primarily due to insurance cover restrictions) and a population based obese group not seeking BS. Both studies [57 & 58] reported significantly greater improvements in overall QoL in the GB group than the controls with moderate to very large effect sizes for the GB group in psychosocial QoL compared to small to moderate effects sizes for the other groups [57]. However, the group difference in mean QoL scores between BS and control cohorts was less significant in the SF-36 mental component ($p<0.01$) compared to the physical component and overall QoL ($p<0.0001$) [58]. Overall, both studies show strong quality evidence that BS significantly improves psychosocial QoL when compared to no treatment.

A prospective trial by Nickel et al [56] looking at QoL after gastric banding found generally reduced QoL and health state for people with a high BMI at baseline regardless of which group they were in. At 3 years post-surgery, the gastric banding patients showed significantly greater

improvement in all eight SF-36 scales than the no surgery group. Moreover, a reduction in BMI showed a prolonged positive effect on both psychological and physical symptoms. The lack of group differences in baseline characteristics and the high follow up rate of 88% of this trial provides strong quality evidence of a significantly positive effect on psychosocial QoL following BS when compared to no treatment.

Two studies assessed QoL following BS up until four years. Batsis et al [53] examined the relationship between QoL and psychological status following RYGBP using the LASA and SF-12. The LASA QoL score improved from baseline to follow up after 4 years by 138% (surgery) and 31% (no surgery), a significant percentage difference between the groups. The surgery group also had considerable symptomatic improvement and higher self-reported exercise tolerance at follow up. Reported SF-12 scores at 4 years also showed significant improvement in overall QoL in the surgery group compared to controls. However it might be worth noting that the LASA was the only QoL measure taken at baseline and follow up. Considering the fact that it only asks one global QoL question, one can question the tool's ability to specifically assess psychosocial QoL. Interestingly, the study reports that when comparing SF-12 scores in all patients between the follow up periods of <2 years and >2 years, no significant difference in mental component score was found between the BS and no surgery groups. However, the study reported a positive correlation between the two scales and overall, it provides moderate quality evidence that BS significantly improves general QoL compared to no treatment but not psychosocial QoL necessarily.

Buddeberg-Fischer et al [54] investigated weight loss, psychosocial stress and psychosomatic symptoms between patients undergoing and not undergoing BS over a four and a half year period. 69 out of 131 participants from two specialised surgery units chose to have LAGB or RYGBP. All patients were followed up at two years, and four and a half years via telephone interviews. At 4 years, all patients seemed to rate their psychosocial wellbeing as 'good' regardless of whether they had undergone surgery or not. This is despite a significant reduction in BMI in the surgery group compared to the no surgery group. Both groups also showed a significant improvement in depressive symptoms. This study provides moderate quality evidence of no significant difference in long term psychosocial QoL following BS when compared to no treatment.

In the longer term Utah Obesity Group studies [59, 60] there was an absence of significant improvement in the SF-36 mental component score for the GB group after six years, contrary to marked significant improvements in the physical component scores and overall QoL score [59]. Significant improvements were evident in all the physical domains of QoL measures but

only some of the psychosocial domains significantly improved after 6 years in the GB group compared with the controls [60]. QoL scores remained stable from 2 to 6 years, where small decreases in QoL were linked to some weight gain. Overall, both studies show strong quality evidence that BS does not significantly improve long term psychosocial QoL when compared to no treatment.

Overall four out of seven studies comparing BS to control groups found good evidence that long term psychosocial QoL does not improve following BS compared to no treatment at all. Figure 2 outlines the post-surgery trajectory of psychosocial QoL from the studies using the SF-36 and SF-12 between BS and control groups over time. Five of the seven studies had an overall strong quality rating.

Quality of Life Outcomes in relation to Type of Procedure among Included Papers

An attempt was made to look at the relationship between type of surgical procedure (gastroplasty, gastric banding and gastric bypass) and reported QoL outcomes (Table 3). Three studies [39, 54 & 55] used two types of BS within their surgery group according to the surgeon's discretion or patient's choice. None of these studies reported or made QoL comparisons in relation to type of surgical procedure. However studies have shown gastric bypass to be associated with better quality of life outcomes compared to gastric banding and gastroplasty [61-63]. Data available for both within study comparisons and across study comparisons showed more percentage excess weight loss (%EWL) for gastric bypass participants compared to the other two procedures. This again is in line with previous statistical findings in weight loss surgery literature [18, 62, 64-65]. Weight loss tended to slow down with longer follow up and in some cases weight regain occurred [59]. No percentage weight loss (%WL) or %EWL was reported in Nickel et al [56].

Quality of Life Outcomes in relation to Gender among Included Papers

An attempt was made to look at the relationship between gender of participants and QoL outcomes following BS (Table 3). None of the studies included in this review conducted such analyses. Batsis et al [53] who conducted a regression analysis looking at predictors of increased QoL amongst their gastric bypass group suggested gender was not a significant predictor.

Discussion

General findings from four studies of moderate to strong scientific quality show that psychosocial QoL is initially better within the first year of follow up in non-surgical intervention

cohort. However this trend is not sustained after ten years, with the BS cohort showing significantly better overall QoL outcomes compared to non-surgical interventions. However in the 10 year follow up study [39] the degree of improvement in psychosocial QoL in the surgery group was minimal after 6 years despite the significant improvement in physical QoL, weight loss and co-morbidities, bringing into question the ability of BS to impact mental and social issues in this patient group and raising the need to improve theoretical pathways around psychology issues, obesity, cause and effect. When compared to no intervention, long term psychosocial QoL does not appear to improve following BS, despite significant improvements in physical QoL over time. Overall these results demonstrate moderately strong evidence to suggest that BS is not more effective at improving psychosocial QoL in the long term when compared to obese control groups, even when coupled with positive outcomes like significant weight loss and improvements in co-morbidities like diabetes and cardiovascular disease. Therefore, it seems inducing significant weight loss alone by means of BS may not address longer term psychological issues like depression, body dissatisfaction and problematic eating behaviours [66, 67] that may be initially present in the individual suffering from obesity.

This review demonstrates how persistent psychological factors linked to obesity can be and reinforces recommendations from the NICE commissioning guidance to provide psychological support after BS [11]. More crucially it shows that there is no clear study comparing the health outcomes of psychological treatment and physical treatment (BS) of obesity. Overall, more long term studies in this area are needed that focus on psychosocial QoL and wellbeing of individuals following BS and a greater potentially useful adoption of theory building across life course approach around obesity.

The variety of measures used amongst the included studies means validity of QoL ratings comparisons are difficult to ascertain. The measures ranged from ‘generic’ scales, which are used and validated across a broad range of chronic diseases, to ‘specific’ scales, specifically designed for a disease, in this case obesity. Although specific scales are seen to be well adapted to the disease they are designed for and better at recording even minor QoL changes, they are sometimes considered to be quite tautological, producing repetitive and difficult to interpret results. In contrast, generic scales may be poorly adapted to particular conditions of a disease and lack sensitivity. These issues not only bring about the debate of which scales are best to use when, but also bring into question whether together these two types of scales provide coherent information [68]. Moreover, there is a general lack of consensus on the definition of QoL despite its importance for evaluating quality and outcome of health which means there is no gold standard for its measurement [69-71].

A number of reasons have been attributed to persistent psychological issues post-surgery including unrealistic patient expectations [72]. These findings point to a need for greater modelling of the psychological pathway to obesity in order to potentially improve treatment outcomes. Work in this field is currently limited and unfortunately, there is no single set of psychological characteristics that are consistently predictive of success or failure following BS as different psychological characteristics are likely to be associated with weight maintenance and relapse in obesity [73]. This review points to potential for exploratory work with both patients and health professionals around psychological pathways in the use of longer term quality of life measures, the adoption of a life course view of obesity. The work also confirms the value of existing psychological work with this group when treatment costs require clear evidence of effectiveness. There may also be a role for enhanced psychological support to address post-operative mental health issues. More recently, studies have reported elevated suicide rates following bariatric surgery [74-75] in BS groups when compared to control groups [76].

Limitations

Several limitations to the review findings must be noted. Firstly, the limited number of RCTs may explain for the high risk of allocation bias of participants to intervention and control groups in the review studies, but also contribute to selection bias. Allocation of participants to groups presented the most common risk of bias to the review studies, as participants generally chose which group they could go into. For example in Karlsson et al [39], participants could volunteer for conventional or surgical treatment. Thereafter the type of surgery they had was up to the surgeon's preference. The retrospective collection of data in Batsis et al [53] meant participants had already previously undergone RYGBP or not when they were approached to participate. Buddeberg-Fischer [54] included patients applying for BS. However, comparability of the surgery and no-surgery groups was unclear because baseline characteristics for each group were not reported, although the study mentions that all but three participants met the criteria for surgery (one had BMI 31.6, two were aged > 60 years). There was a lack of evidence on the standardisation of the surgical interventions given i.e. whether one surgeon was conducting a surgical procedure similarly to another. This problem was also evident for the non-surgical interventions which included a mixture of unknown conventional treatments [39] and a weight-loss program [55]. Differences like these reduce true comparability between surgery and no surgery, increasing the risk of selection bias [77] potentially influencing skewed significant results, and affecting generalisability of findings. As for the RCTs a high percentage of potential participants refused to participate in the trials which contributed to small sample sizes therefore reported results should be considered preliminary [51-52].

Other overall problems of studies in this field include variation in sample sizes, follow up periods and study design. Such statistical and methodological heterogeneity limits the ability to provide quantitative synthesis of the results as caution has to be raised over comparability of the studies' results [78]. The risk of language bias is also quite prominent in this review as studies published in English only were included. Lastly this review aimed to look at long term psychosocial QoL following bariatric surgery, however, only five out of the nine studies included follow up data for more than three years. All the above issues potentially weaken the strength of evidence within this field therefore there is a need for more longitudinal prospective studies to be conducted in this area.

Conclusion

- From the small numbers of strong to moderate quality studies found in this review, no strong conclusions can be drawn regarding the effectiveness of BS compared to non-surgical interventions on improving long term psychosocial QoL of obese adults due to limited data.
- More research needs to be conducted in this area to gain greater understanding of the effects BS has on psychosocial QoL using higher quality study designs like RCTs and controlled trials whilst accounting for ethical issues that randomisation could present, for example denying some participants clinically indicated surgical treatment.
- There is a need to clarify the definition of (psychosocial) QoL to enable researchers to develop and establish a set of valid and reliable questionnaires in this area.
- Aside from time, additional patient attributes like race, gender, socioeconomic status and mental health status may influence psychosocial QoL outcomes post-surgery therefore greater specificity on the predictors of post-BS QOL may help produce clearer findings.
- In future it would be good to pull together data on trends in QoL verses weight loss following BS and map out specific time points were QoL peaks or significantly drops. This data would be useful for health professionals to map out appropriate timescales for psychological interventions.

Disclosure Statement

The authors declare no conflicts of interest.

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Figures and Tables

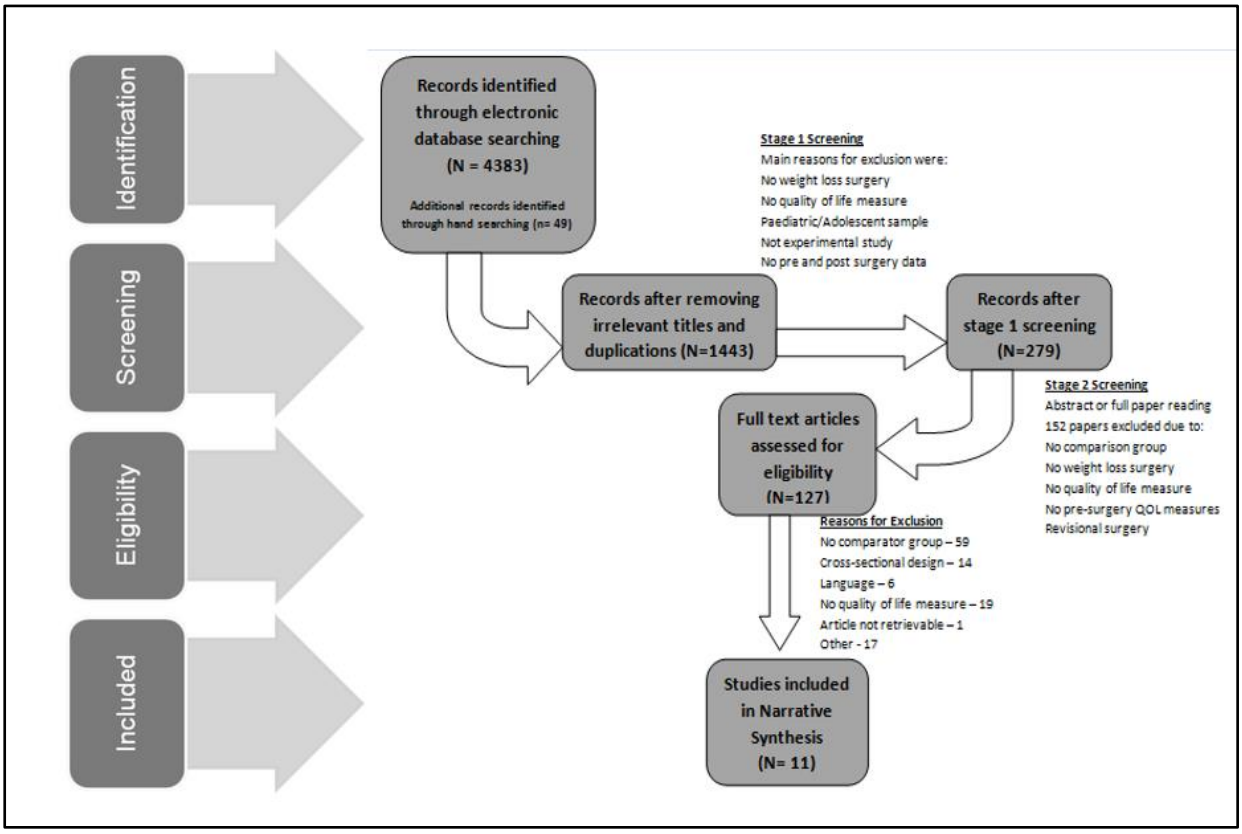

Figure 1 Flow chart of study selection

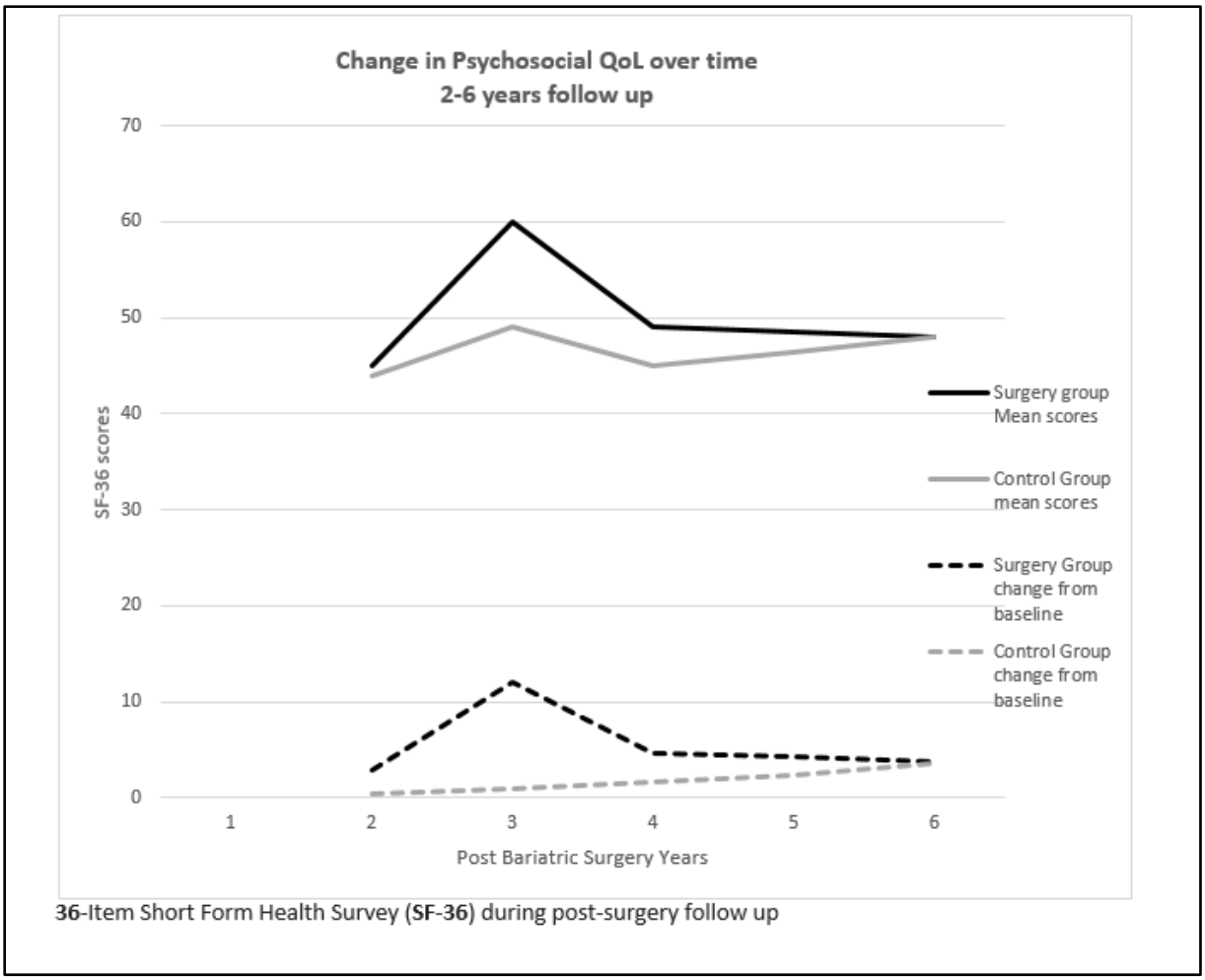

Figure 2 Changes in Quality of Life scores over time in bariatric surgery cohort versus control group

Table 1: Descriptive Characteristics and Quality Ratings of Included Studies

Authors	Country	Study Design	Sample Size	Follow up Period	Assessment Measures	Drop-out Rates	Overall Quality	Changes in QoL
Nickel et al 2005	Germany	Prospective controlled trial	57 (female only sample)	3 years	Short Form Health Survey (SF-36)	12%	Strong	Sig. correlation between BMI reduction and PHFU, ROPH, PSYC and VITALITY on the SF-36 scales. Initial SF36 ratings showed reduced state of health and HR-QoL for people with high BMI. Post surgery group showed sig. greater rate of change (improvement) than no surgery group on all 8 SF-36 scales. BMI reduction showed a prolonged positive effect 3 years later on psychological symptomatologies.
Karlsson et al (2007	Sweden	Prospective controlled trial	1276	10 years	Current Health Scale Mood Adjective Checklist (MACL) Obesity-related Problems Scale (OP) Sickness Impact Profile (SIP)	25%	Strong	Peak HRQL improvements were seen during the 1st year of weight loss in surgical group. Weight regain phase (mainly 1 to 6 year follow-up) was followed by a gradual decline in HRQL. The 6 to 10 year follow-up showed relatively stable observations in both weight and HRQL. Net gains were noted in all HRQL domains compared to baseline at 10 years. Small initial improvements were mostly lost within 2 years in the non-surgery group. Some HRQL domains improved at the end of observation period but long term outcome on HRQL was mixed.
Batsis et al (2009)	USA	Population based cohort	236	4 years	Linear Analogue Self Assessment (LASA) Short Form Health Survey (SF-12)	N/A -1 time survey 44% response rate	Moderate	LASA QoL score improved from baseline to follow up by 138% (surgery) and 31% (non-surgery). This difference was significant between groups. Worse QoL in 3% surgery and 15% non-op group. This difference was significant between groups. Significantly higher QoL ratings were noted on both scales for surgery group compared to non-surgery group. Surgery group also had greater symptomatic improvement ($p<.001$) and higher self reported exercise tolerance ($p=.01$) at follow up compared to the non surgery group.
Buddeberg-Fischer et al 2009	Switzerland	Cohort longitudinal	131	2 years	Psychosocial Stress and Symptom Questionnaire (PSSQ)	19% surgery group 40% non surgery group	Moderate	No significant change in psychosocial stress from T0 to T2 but depression and eating behaviour improved significantly. One correlation in non surgery group where lower scores at T0 in mood and binge-eating scales linked with greater BMI change. BMI significantly reduced in BS group compared to the non surgery group. |
Canetti et al (2009)	Israel	Cohort analytic	102	1 years	Short Form Health Survey (SF-36)	14%	Moderate	Surgery patients showed significant improvement in mental health, QoL and self-esteem. Diet group showed significant improvement in 3 SF-36 scales and total score. Surgery group lost significantly more weight and showed significantly greater improvement in wellbeing, QoL and self-esteem than diet group.

Koloktin et al (2009)	USA	Prospective longitudinal	833	2 years	Short Form Health Survey (SF-36) Impact of weight on quality of life-lite (IWQoL-lite)	38%	Strong	Both QOL measures showed greater improvements for surgery group. 97% surgery group had meaningful improvements in IWQoL-lite total score compared with 43% non surgery group and 30% in pop obese group. Effect sizes for changes in psychosocial HRQOL were moderate to very large for surgery, but small for other groups. Very large effect sizes for changes in physical and weight related HRQOL for surgery but small to medium for other groups. Percentage weight loss was 34.2% for surgery group, 1.4% for non surgery group and 0.5% gain for pop obese group.
Adams et al (2010)	USA	Prospective longitudinal	1156	2 years	Short Form Health Survey (SF-36) Impact of weight on quality of life-lite (IWQoL-lite)	6%	Strong	Health-related quality of life and physiological variables improved significantly in gastric bypass group compared with each control group (all $P < 0.0001$, except for diastolic blood pressure and SF-36 mental component score at $P < 0.01$
Adams et al (2012)	USA	Prospective longitudinal	1156	6 years	Short Form Health Survey (SF-36) Impact of weight on quality of life-lite (IWQoL-lite)	27%	Strong	Absence of improvement in the SF-36 mental component score in the surgical group during this period in contrast to marked improvements in the SF-36 physical component score and overall quality of life score.
Koloktin et al (2012)	USA	Prospective longitudinal	852	6 years	Short Form Health Survey (SF-36) Impact of weight on quality of life-lite (IWQoL-lite)	28%	Strong	Compared with controls, GB group showed sig. improvements in all domains of weight-specific and most domains of general HRQOL (all physical and some mental/ psychosocial). 6 year percentage of excess weight loss correlated significantly with improvements in both weight-specific and physical HRQOL. HRQOL scores fairly stable from 2 to 6 years for the GB group, with small decreases in HRQOL linked to some weight regain.
Halperin et al (2014)	USA	Randomised controlled trial	43	1 year	Short Form Health Survey (SF-36) EuroQol 5 Dimensions (EQ-5D) scale Impact of weight on quality of life-lite (IWQoL-lite)	12%	Moderate	SF-36 – similar improvements in QoL scores in both groups. Significant within group change in Mental Health score WhyWAIT group at 1 year EQ-5D – similar improvements in VAS at 1 year with no significant differences between groups IWQOL – QoL improvements within both groups. But Bypass group showed significantly better scores than WhyWAIT at 1 year
Ding et al (2015)	USA	Randomised controlled trial	45	1 year	Short Form Health Survey (SF-36) EuroQol 5 Dimensions (EQ-5D) scale Impact of weight on quality of life-lite (IWQoL-lite)	6% in LAGB and 18% in WhyWAIT	Moderate	SF-36 – no overall effect between groups for change in total, PH and MH scores. Within group QoL improvement in total and mental health scores for WhyWAIT group at 1 year EQ-5D – similar improvements in scores from baseline to 1 year between groups IWQOL – similar improvements in scores from baseline to 1 year between groups

Table 2: Quality Ratings of Included Studies using the EPHPP Quality Assessment Tool

	Selection Bias	Study Design	Confounders	Blinding	Data Collection Methods	Withdrawal & Dropouts	OVERALL Rating
Nickel et al 2005							
Karlsson et al (2007							
Batsis et al (2009)						N/A - survey	
Buddeberg-Fischer et al 2009							
Canetti et al (2009)							
Adams et al (2010)							
Koloktin et al (2009)							
Adams et al (2012)							
Koloktin et al (2012)							
Halperin et al (2014)							
Ding et al (2015)							

Table Legend

Strong

Moderate

Weak

Footnote: Using guidance from the EPHPP quality assessment tool for quantitative studies, the 'Overall rating' is based on the number of components rated as WEAK per paper. STRONG = no WEAK ratings, MODERATE = one WEAK rating and WEAK = two or more WEAK ratings

Table 3: Quality of Life Outcomes According to Type of Procedure and Gender

Type of Procedure	Author	BMI Percentage change	QoL change	Gender	Other comments
Gastric Band	Nickel et al 2005	N/A - Only one type of surgery used No % weight loss or EWL reported for gastric group	N/A - Only one type of surgery used Improvements in all SF-36 scales at final evaluation	Female only sample	
Gastric Bypass	Batsis et al 2009	N/A - Only one type of surgery used % Weight lost = 31 (11) % excess weight lost = 59 (21)	LASA score changed from 3.4 to 8.1 (138%) 4/148 op pxs QoL worsened at follow up	No gender comparisons/ analyses made Regression analyses showed gender not to be a sig. predictor among pxs evaluated for GBP	
Banded Gastroplasty, Gastric Bypass and Gastric Band	Karlsson et al 2007	Significant differences in 10-year weight loss were noted for the surgical subgroups: 13.2% (13) for banding (n=161), 16.5% (11) for vertical banded gastroplasty (n=457) and 25.1% (11) for gastric bypass (n=37).	No results on HRQoL reported in relation to type of surgical procedure. Results in relation to percentage weight loss showed HRQoL improved significantly after 10 years in surgical pxs with higher weight loss than lower weight loss	No gender comparisons/ analyses made	Strong correlation between weight loss and HRQoL over the 10 year follow up period, especially in surgical group. Peak weight loss at year 1
Gastric Bypass and Gastric Band	Buddeberg Fischer et al 2009	Bypass: % BMI change = -27.7 %EWL = 52.8 Band: % BMI change = -17.2 %EWL = 36.0	No results on psychosocial stress between surgery groups reported. However, no difference between surgery and no-surgery group in terms of course of psychological and psychosocial symptoms	No gender comparisons/ analyses made	Bypass group initially heavier; may have triggered easier weight loss
Banded Gastroplasty and Gastric Band	Canetti et al 2009	Surgery participants lost a mean weight of 45.07 kg (SD 23.87) compared to a mean weight of 10 kg (SD 10.85) diet group lost	Surgery group showed a statistically significant improvement in mental health (MHI total score and well-being scale), quality of life (all SF-36 scales and total score), and RSE.	No gender comparisons/ analyses made	Surgery group has higher number of women, BMI and lower QoL at baseline compared to diet group
Gastric Bypass	Koloktin et al 2009	See Koloktin (2012)			
Gastric Bypass	Adam et al 2010	Bypass group Weight change = -44.83kg (0.88) BMI change = -15.77 (0.29)	IWQoL change = 58.90 (1.22) SF36 Mental change = 2.82 (0.44) SF36 Physical change = 9.39 (0.39)	No gender comparisons/ analyses made	Figure in brackets is standard error (SE) Higher BMI in surgery group but adjusted for in analyses
Gastric Bypass	Adam et al 2012	Weight loss from 0-2 yrs = 34.9% Weight loss from 0-6 yrs = 27.7% Shows 7.2 % weight regain between 2-6 yrs	IWQoL change = 42.8 SF36 Mental change = 3.4 SF36 Physical change = 11.6	No gender comparisons/ analyses made	Figures differ slightly according to time point due to adjusting per analysis
		These are unadjusted figures	0-6 years (propensity adjusted)		
Gastric Bypass	Koloktin et al 2012	%EWL AT 6 YRS = 56.4 (21.4)	Meaningful improvements in IWQOL-Lite at 6yrs. SF-36 PCS change at 6yrs= 1.17 SF-36 MCS change at 6yrs= .33	No gender comparisons	%EWL correlated with IWQOL-Lite & SF-36 PCS changes at 6 yrs. Not SF-36 MCS changes
Gastric Bypass	Halperin et al 2014	Bypass mean BMI change = -10 WhyWAIT mean BMI change = -2.5	**Score changes = Bypass vs WhyWAIT** SF-36 Total at 1 yr = 2.5 vs 7.5 SF-36 PCS at 1 yr = 4 vs 6 SF-36 MCS at 1 yr = 5 vs 11 EQ-5D VAS at 1 yr = 18 vs 15 IWQOL change at 1 yr = -32 vs -17	No gender comparisons/ analyses made	Small sample for RCT Feasibility trial No EQ-5D index scores at 1 year reported
Gastric Band	Ding et al 2015	**Weight loss at 1 year** LAGB = 13.5kgs WhyWAIT = 8.5kgs LAGB mean BMI change = -4.5 WhyWAIT mean BMI change = -2.5	**Score changes = Band vs WhyWAIT** SF-36 Total at 1 yr = 2.5 vs 6.5 SF-36 PCS at 1 yr = 5 vs 6.5 SF-36 MCS at 1 yr = 2 vs 7 EQ-5D index at 1 yr = 0.15 vs 0.11 IWQOL score at 1 yr = -13.5 vs -11.5	No gender comparisons/ analyses made	Small Sample for RCT Feasibility trial

ABSTRACT FOR QUALITATIVE STUDY

Background: Little is known about the psychological effects on life after weight loss surgery. Results from the systematic review above showed some persisting disordered psychosocial quality of life and wellbeing in longer term follow up periods in participants after the procedure when compared to control groups. This highlighted potential need for psychological intervention post-surgery and further research to provide more data on long term psychosocial impact of weight loss surgery. Even clearer was the lack of patient perspective on their experience and needs after having the surgery. Generating qualitative post-surgery data is vital as it gives health professionals detailed information on whether patients feel psychological care is needed after surgical obesity treatment and, if so, specifically what kind of care. Therefore, the study aims were; 1) to explore patients' experiences of life after weight loss surgery, discussing perceived benefits and limitations of the procedure, and realisation of patients' expectations AND 2) compare patients' experiences with the views of health professionals involved in surgery and ongoing care to examine concordance between the cohorts.

Methods: Ten individuals who had had weight loss surgery between 2 to 6 years ago and eight health professionals were recruited within an NHS bariatric surgery service through purposeful sampling and individually interviewed by the researcher. The semi-structured interviews were transcribed and analysed using thematic analysis.

Findings: Patients reported drastic weight loss and improvements in a range of co-morbidities in the first year that coincided with better psychological and social function. However, long term experiential narratives revealed postsurgical cliffs in patient care, highlighting a need for psychological aftercare to support patients through physical and psychological changes. Specifically, issues of excess skin, acceptance of non-obese self and perceived prejudice following drastic weight loss were highlighted.

Discussion: Overall, it would seem that weight loss surgery is a great catalyst for weight loss in those suffering from severe obesity. However, this tool needs to go hand in hand with psychological support post-surgery to aid long term optimal results. In relation to health psychology, suggestions for theoretical application and health interventions to facilitate patients through postoperative adjustments after surgery are outlined as well as recommendations for better service provision.

CHAPTER 1 – LITERATURE REVIEW

Obesity as a worldwide epidemic

Obesity is a major health problem worldwide and has reached epidemic proportions in both developed and developing countries (Ng et al, 2013; Chang et al, 2014), making it an extremely important public health issue. Obesity is clinically defined in terms of body mass index (BMI), calculated as a person's weight divided by his or her height squared (kg/m²). The UK healthy range is between 20kg/m² and 25kg/m² and a person is considered obese if their BMI is above 30kg/m² (Flegal et al, 2016; Flint et al, 2015). Evidence shows that obesity is also a major risk factor for significant morbidity and mortality (Song et al, 2015) including diabetes mellitus, cardiovascular disease (Dawber et al , 2015), non-alcoholic fatty liver disease (Fabbrini & Magkos, 2014), reduced lung function (Salome et al, 2010 & 2013; Forno et al, 2016) and increased risk of cancers (Gallagher & LeRoith, 2015; Deng et al, 2015). Obesity can also be a psychosocial burden often resulting in social stigma, and underlying mental health and self-esteem issues (Griffiths et al, 2010; Wang et al, 2009); reduced mobility may result in a generally poorer quality of life (Bryant et al, 2009). Despite these negative health effects, obesity continues to rise in the United Kingdom. According to the Department of Health (2011) Health Survey for England, 61.3% of the population is either overweight or obese in the UK, thus ranking as one of the most obese nations in Europe.

Obesity can be managed using dietary advice, exercise, lifestyle changes and medication to induce weight loss, which reduces the risk of co-morbidities worsening and improves long term survival. Weight loss of 5 to 10% has been associated with significant reductions in co-morbidities and mortality (Maggard et al, 2005). There are a range of psychological interventions used within weight management that have been shown to enhance weight reduction in people who are overweight or obese, particularly interventions using behavioural and cognitive-behavioural strategies (Shaw et al, 2005). They have been found to be predominantly useful when combined with dietary and exercise strategies (Shaw et al, 2005). Cognitive behavioural therapy (CBT), an approach that aims to help people cope more effectively with problems by equipping them with a framework for thinking, feeling and behaviour (Cooper et al, 2003) is one of the most researched psychological interventions in the field of obesity (Snowdon-Carr, 2016). While CBT interventions alone do not seem effective as a weight loss treatment, this approach has been found to be useful in reducing relapse in the long run when compared to solely diet and exercise treatment (Werrij et al, 2009) and treating eating disorders (Nathan & Gorman, 2015, page 641). Mindfulness is the ability to attend in a non-judgemental way to one's own physical and mental problems during

ordinary everyday tasks (Epstein, 1999). Mindfulness-based interventions (MBIs) have gained popularity in recent years, particularly in the area of obesity related eating behaviours, with studies reporting improvements in binge eating and emotional eating (O'Reilly et al, 2014). There is also preliminary evidence that eating focused MBIs can result in significant changes in weight and psychological distress in obese individuals (Dalen et al, 2010; Daubenmier et al, 2011). Like CBT, evidence for the effect of MBIs on weight loss is mixed (Katterman et al, 2014) and possibly mediated by improvements in eating behaviour (Tapper et al, 2009). Another popular psychological intervention used in weight management is motivational interviewing which is a client-centred method of intervention focused on enhancing intrinsic motivation and behaviour change (Barnes & Ivezaj, 2015). A clinical review has found motivational interviewing to be a supportive weight management approach for a range of obese adult populations, with studies reporting positive results like increased physical activity, when used as a standalone treatment or an adjunct to other approaches (Christie & Channon, 2014).

However, there has been an increasing amount of evidence in current literature for weight loss surgery as a more effective treatment for severe obesity within the weight management strategy (Picot et al, 2012; Chang et al, 2014, Colquitt et al, 2014). Weight loss surgery defines a group of surgical procedures that are performed to facilitate weight loss; open or laparoscopic roux-en-Y gastric bypass (RYGBP), adjustable gastric banding (AGB) and sleeve gastrectomy (SG) being the most commonly performed in the UK (Buchwald & Oien, 2013; Dent et al, 2010). The AGB is currently the least invasive procedure and is considered purely restrictive. It involves placing a synthetic band around the upper portion of the stomach, creating a small pouch. This dramatically reduces the amount of food one can eat. There is no stapling or division of the stomach. Adjustments to the bands are done via a port in the subcutaneous space. The SG involves removing the lateral 80% of the stomach, leaving a narrow tube of stomach. Like the AGB, the SG is also considered a purely restrictive procedure, although changes in ghrelin levels may also affect satiety. Expected weight loss exceeds that of an AGB and somehow less than that of the RYGBP. The RYGBP has become one of the most common surgical procedures for weight loss and can be accomplished laparoscopically and via an open incision. Although its primary mechanism for weight loss is caloric restriction, macronutrient malabsorption is also a factor. RYGBP is based on three components: creating a small gastric pouch by stomach reduction, dividing and rerouting the small intestine to create a 'Roux limb', and gastrojejunostomy, which involves connecting the limb to the new gastric pouch in an intentionally restrictive manner to slow emptying of the pouch. The RYGBP is the gold standard in obesity surgery procedures as it provides reliable long-term weight loss (Miller & Choban, 2011). Laparoscopic procedures generally show

better surgical safety outcomes than open methods (Reoch et al, 2011). It was previously thought that weight loss surgery procedures worked by changing the digestive system so that the body takes in fewer calories by use of two techniques, namely restriction and malabsorption. In restriction, the functional size of the stomach is reduced to make one feel full quicker after having smaller meals, and in malabsorption bypassing of some of the intestine limits the amount of calories the body absorbs (Sherman, 2013). However recent research suggests that although caloric restriction seems the dominant mechanism in the early period of having weight loss surgery, long term reduction in body weight and maintenance of weight loss appear to be due to the rearrangement of gastrointestinal hormones and neural elements of the gastrointestinal tract alongside caloric restriction, resulting in secondary changes in food intake like increased satiety, appetite suppression and aversive conditioning due to negative side effects (Ionut & Bergman, 2011; Tadross & Le Roux, 2009).

The efficacy of weight loss surgery is often expressed in terms of postoperative weight loss, reduction of co-morbidities and mortality. Current literature suggests that the procedure is more effective for achieving significant weight loss in people with a BMI of 30kg/m² (including those with more severe obesity), longer term maintenance of weight loss and improvements in co-morbidities compared to non-surgical obesity management, especially in some obese patients who are resistant to behavioural interventions such as physical activity and diet (Gloy et al, 2013; Ribaric et al, 2014). Evidence from studies and systematic reviews assessing the efficacy of weight loss surgery have shown the procedure results in significant long-term loss of weight, recovery or remission from diabetes, significant improvement in cardiovascular risk factors and a reduction in mortality (Colquitt et al, 2009; Picot et al, 2009). This growing evidence has contributed to increased popularity of the procedure over the last decade (Welbourn et al, 2014) and led some renowned obesity experts to see the procedure as the solution to the looming obesity epidemic (Mechanick et al, 2013).

Psychological Aetiology of Obesity

The question for health psychologists is whether this physiological approach and measurement of weight loss surgery outcomes addresses underlying psychological conditions that result in overeating. This is an important inquiry because as previously highlighted obesity does not just affect individuals in a physiological manner but also has negative psychosocial consequences which may be precursors to the weight gain itself (Blaine, 2008; Singh et al, 2014). The etiological basis of problematic eating behaviours that lead to obesity is very complex and usually lies in some combination of psychosocial, environmental, and genetic or biological attributes. Individuals who suffer from psychological disorders (e.g. depression,

anxiety, and eating disorders) may have more difficulty controlling their consumption of food, exercising adequately, and maintaining a healthy weight (Collins & Bentz, 2009). Scholars looking at the cause of obesity seem to infer a perpetual cycle of mood disturbance, overeating, and weight gain in obese individuals, where food is adopted as a habitual coping mechanism, particularly when the individual is experiencing low mood or feeling distressed (Vandenbroeck et al, 2007) However, there is a general lack of theoretical understanding in this field (Markey et al, 2016).

Obesity Theories

A key area that health psychology can contribute to understanding obesity is the development of theoretical understanding. One prominent approach to theorising the obesity phenomenon is based on the notion of viewing certain eating behaviours as an addiction. This idea first came around in the 1940s when endocrinological theories of obesity begun to fall into disfavour following evidence that showed that most obese people had normal metabolisms (Rasmussen, 2015). This was contrary to previous common belief that obesity was a result of reduced metabolic rates due to glandular dysfunction, bringing a shift in thought of obesity aetiology from being solely biological to more of a behavioural issue (Rasmussen, 2015). According to Robert West, addiction is an 'impaired control over a reward-seeking (usually drug-taking) behaviour from which harm ensues', and presents itself in varying extents (West & Hardy, 2006). At its most basic, from a behavioural neuroscience approach, obesity, in addiction theory is conceptualised as a result of addictive eating behaviour akin to substance abuse. Specifically, the theory purports that the human 'brain reward system' has developed over time to reinforce behaviours geared towards survival like sex and eating (Hyman, 2005) which prompt the release of dopamine, producing sensations of pleasure. Addictive drugs are said to hijack this reward system by binding to the same receptor sites in the brain, producing similarly intense feelings of pleasure (Robinson & Berridge, 2008). This results in a systemic change where the brain adapts to the presence of the drug which further reinforces the effects of the drug and its continued use. This unhealthy powerful motivation to engage in a particular maladaptive behaviour, which can be driven by many different factors such as physiological, psychological, environmental and social, becomes chronic over time (West & Brown, 2013). Therefore, in the context of obesity, highly palatable (or junk) foods would be framed as the 'drugs' that takeover the individual's brain reward system, leading to weight gain due to continuous consumption of the junk food, reinforced by pleasurable sensations following dopamine release over time (Everitt & Robbins, 2005). The theory of addiction has gained prominence since the last half of the 20th century, mainly because it offers a tangible explanatory framework to a complex phenomenon for the medical and public health communities to utilise. It is particularly appealing in the realm of (health) psychology as it is

often presented as a theory of motivation and how the motivational system is distorted in the case of addiction.

However, the application of this theoretical framework may not be constructive for those working in weight management. In particular it may prejudice people's perception of people who are overweight and obese. Addiction has longstanding negative connotations mostly linked to historically social perceptions of drug addicts as deviants to stability and morality (Van Boekel et al, 2013). Therefore the 'food addict' label may cause the obese population to be stigmatised, being seen as disordered individuals, lacking in self-control (DePierre et al, 2013). This perception has also promoted the culture of thin idealisation. For example, there is evidence of social pressure to be thin and, of a weight bias especially for women that coincides with the increasing obesity trend (Brownell et al., 2005; Owen & Laurel-Seller, 2000) which has consequently led many people to explore weight control practices, ranging from weight loss diets to pills (Weiss et al, 2006; Dragone & Savorelli, 2012). Unfortunately, some of these practices may influence unhealthy weight control behaviours, which are found to be associated with an increased risk of the onset of eating disorders (Neumark-Sztainer et al, 2006). This approach has also driven prejudice between social classes with current literature linking obesity to low SES background (Shahar et al, 2005; Dastgiri et al, 2006; Darmon & Drewnowski, 2008). This is interestingly despite evidence that many low-income populations are still able to maintain a healthy weight despite obesogenic environments (Dressler & Smith, 2013; Berenson et al, 2015).

Another issue with the theory of addiction in the context of obesity is that its focus on the individual at times diminishes the complex social aspects that influence how people relate to food and adopt eating behaviour. Eating often occurs in a social context therefore the food choices of others and the amounts that those around us eat may have a powerful effect on our own consumption decisions (Robinson et al, 2014; Higgs, 2015). This can greatly affect one's ability to control one's weight regardless of personal desires. Critics of the addiction approach to obesity have importantly questioned the validity of framing food as an illicit drug (Fraser et al, 2014). How right is it to label something so normative and socially embedded in this light, particularly when consumption of junk food is not limited to the obese? However, as pointed out by Schulte and colleagues (2015) if certain foods (e.g. highly processed) are addictive, the identification of possible risk factors for food addiction is an important step, especially if those foods provide little health benefits. Lastly, the theory purports behaviour is changeable because it is directly influenced by internal and external environments in a continuous manner (West & Hardy, 2006). This brings into question how realistic it is to utilise the gradual decision making and action plan approach to tackling overeating and increasing

exercise (Resnicow & Vaughan, 2006) especially because our attitudes, readiness to change and self-efficacy towards one behaviour can be so heterogeneous and transient.

Another theoretical focus in obesity has been on eating as a habitual form of coping mechanism, drawing attention to the various ways in which past experiences influence our behaviour. Habituation, which is the reduction of responses due to repetition of specific stimuli, associative learning (most notably Pavlovian and operant conditioning), and explicit memory all have profound effects on our habit formation (Neal et al, 2012) and influence subsequent autonomic behaviours in certain environments (Gardner et al, 2012; Wittrock, 2013 - chapter 3). Therefore, when aiming to change these behaviours, the intentions need to be powerful enough to override the existing habits (Ouellette & Wood, 1998; Wood et al, 2005). In line with this, studies of behaviour change in obesity have tried to incorporate the role of habit. For example, Verplanken and Faes (1999) who conducted a study on healthy eating, found a negative relationship between counter-intentional habits and performance of health behaviour. Other studies indicate that habit strength considerably adds to the extent of variance in healthy eating behaviours across a range of age groups (Raman et al, 2013). This implies that a key reason why long-term behaviour change may be difficult for the obese population is that the behaviours that individuals want to change, like poor dietary habits and limited physical activity, are relatively habitual. In the context of eating as a coping mechanism, research has found that emotional habitual eating interacts with executive functioning and can influence overeating or binge eating behaviours that lead to obesity (Raman et al, 2013). Stress or increased mental load can bias cognition toward increased emotional activity and degraded executive function, causing formed habits (like emotional eating) to be used rather than a cognitive appraisal of responses. Stress also induces secretion of glucocorticoids, which increases motivation for food, and insulin, which promotes food intake and obesity. Emotional eating psychologically induces feelings of pleasure, reducing activity in the stress–response network, and reinforcing the feeding habit (Dallman, 2010). The above emphasises the importance of teaching mental reappraisal techniques to restore responses from habitual to thoughtful, in order to tackle emotional eating in obesity. Consequently, researchers are working to further understand the role of these concepts in eating behaviour (Olsen et al, 2013; Burger & Stice, 2014) in order to develop effective cue-exposure treatments that potentially decrease food cue reactivity and urges to overeat (Boutelle & Bouton, 2015).

In the context of bariatric treatment, research shows that bariatric surgery candidates take longer to be satiated due to slower salivary habituation to food and taste stimuli compared to normal-weight individuals (Bond et al, 2009) which may influence greater caloric or energy

intake. However, bariatric surgery seems to trigger a change in eating behaviour, particularly changes in taste response where patients find sweet and fatty meals less pleasant, which facilitates adoption of healthier foods and subsequent weight loss (Miras & le Roux, 2010; Mathes & Spector, 2012). Habituation theory therefore may be a useful tool for helping our understanding of eating regulation in morbid obesity and the mechanisms behind postsurgical changes in taste. This could potentially aid development of novel weight loss maintenance interventions following bariatric surgery (Jumbe et al, 2017).

More recently, a new theory of obesity has been proposed by Marks (2015) based on homeostasis, a well-known self-regulatory process which is automatic or built into many biological and neurological systems for health protection and illness prevention. This theory suggests that imbalances in homeostatic processes could explain weight gain and obesity. Marks (2015), proposes that over-consumption of high-caloric, low-nutrient and low satiating foods, combined with a stressful environment, is the origin of weight gain. Once that weight gain occurs, an individual experiences body dissatisfaction and negative affect leading to continued over-consumption over a prolonged period. This causes the homeostatic feedback loops to drift away from equilibrium towards a dysfunctional state, unable to control weight gain and subsequently forms a vicious 'Circle of Discontent' (Figure 3). This notion of vicious circles of discontent emulates the experiences of weight loss surgery patients encountered in clinic assessments and during interviews. For instance, they frequently described their weight loss journey as a perpetual cycle of failure, having tried endless diets and lifestyles programmes over the years. Each weight loss attempt would start with initial success but over time they would struggle to keep the weight off. This weight regain would bring feelings of disappointment which in turn led them to overeat again and subsequently give up.

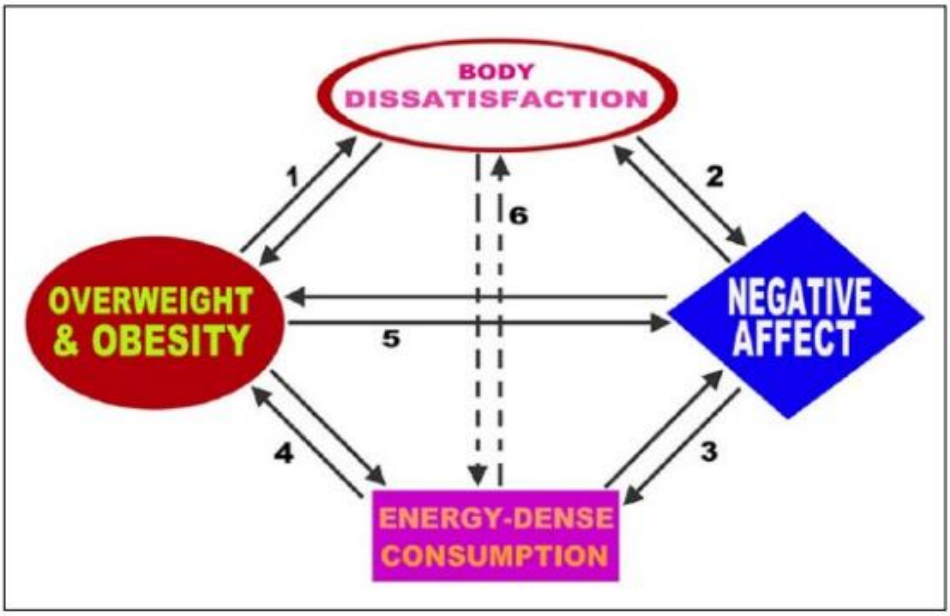

Figure 3: The Circle of Discontent (Marks, 2015) - used with permission from the author

The theory condenses the wealth of evidence into a framework that facilitates understanding of obesity from a satellite view whilst attempting to incorporate biological, psychosocial and environmental factors to obesity, meaning it is extensive. Specific to psychological elements, the important role of body image in the COD pathways is explained using examples of research findings that show the well-established positive and reciprocal relationship between body size and body dissatisfaction (Markey & Markey, 2005), and that general negative affect (depression, low self-esteem) is associated with body dissatisfaction, patterns of consumption and directly with weight status. For instance, a recent study found emotional eating and binge eating behaviours to be commonly reported by obese adults with elevated depressive symptoms compared to those without (Goldschmidt et al, 2014). Although these forms of emotional eating may result in temporary reduction in distressed mood, the weight gain that follows may cause a dysphoric mood due to an inability to control one's distress and subsequent feelings of guilt may reactivate the cycle, leading to a continuous pattern of using food to cope with emotions. This pattern is particularly applicable if there is a genetic predisposition for obesity or an environment in which calorically dense foods are readily available and physical activity is limited (Swinburn et al, 2011). Unfortunately, such environmental circumstances are becoming common in the UK (Burgoine et al, 2014; Cetateanu & Jones, 2014; Giskes et al, 2011; Vandenbroeck et al, 2009), being particularly linked to poorer areas.

Research literature seems to suggest that people with lower income and levels of education exhibit less healthy dietary habits compared to those with higher incomes and education (Shahar et al, 2005; Dastgiri et al, 2006; Darmon & Drewnowski, 2008). Over the years, reviews in this area have shown the highest rates of obesity occur among population groups with the highest poverty rates and lower education, with trends of low fruit and vegetable consumption, and lower-quality diets (Drewnowski & Specter, 2004; Drewnowski & Darmon, 2005). Evidence from the Low Income Diet and Nutrition Survey shows adults from lower income groups are more likely to mention affordability as a barrier to healthy eating than those from all income groups (Nelson, 2007). Although not fully understood, their findings infer a higher priority for price and familiarity rather than for healthy eating amongst low SES groups as a key motive for increased likelihood of unhealthy eating (Drewnowski, 2009; Darmon & Drewnowski, 2008). The above backs up Marks' suggestion, vying for policy changes that target food industries that foster obesogenic environments where passive over-consumption is pervasive. However, reflecting upon the obesity systems map by Vandenbroeck and colleagues (see figure 4) this is too reductionist a summary of socioeconomic status as a driver of obesity and may not account for other factors that are potentially at play.

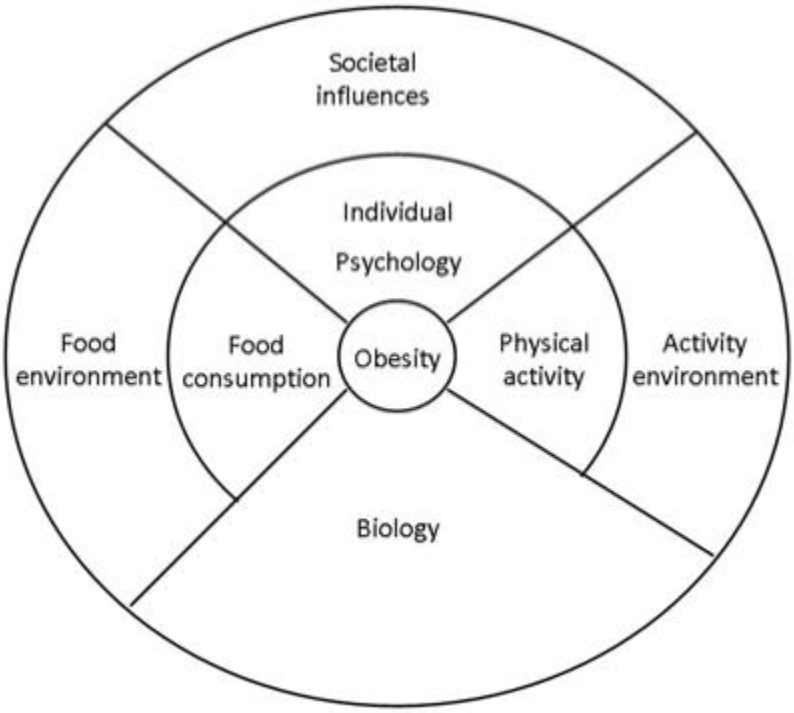

Figure 4: Predominant themes of the Foresight Obesity Systems Map (Vandenbroeck et al, 2007) - used with permission from the copyright holder

Interestingly, research findings also suggest that an individual's socio-economic characteristics play a more important role in shaping diet than the socio-economic characteristics of the area in which they live (Giskes et al, 2005). In a sense, this finding

perhaps highlights the influential role of upbringing on individuals' subsequent attitudes to healthy eating as more pertinent than the influence of the environment where one lives. Adding to this school of thought on the influence of upbringing on eating behaviour later on in life, a recent large survey study by Russell et al (2016) conducted in the United Kingdom, drawing from 11243 participants from diverse socio-demographics found that independent of demographic factors like gender, age and ethnicity, preference for generally healthy foods was significantly linked to reported happy, nonviolent childhood experience. Also the CARDIA study by Miedema and colleagues (2015) also adds to research evidence around the importance of eating healthy across the life course, finding that higher intake of fruit and vegetables during young adulthood was associated with lower prevalence of coronary artery calcium (a good indicator of heart attack risk) after 20 years of follow-up. Moreover, and perhaps not surprisingly, participants who ate more fruits and vegetables in younger adulthood also tended to eat healthier diets overall, and this effect remained significant even after the researchers adjusted for other factors that can affect calcium in the arteries, such as levels of physical activity, smoking and whether they had high blood pressure. Overall, these studies show that individuals who grow up eating healthy are more likely to continue this into adulthood. This implies that the behaviours that lead to obesity may be learnt early in life and therefore, as similarly highlighted in the COD theory (Marks, 2015), obesity needs to be understood across the life course and consequently addressed in a longer timeframe.

The COD theory also reflects the interpersonal nature of obesity by highlighting that the negative public perception of large body size makes larger individuals more likely to be dissatisfied with their own body (Tiggemann & Zaccardo, 2016); high negative affect linked to body dissatisfaction is likely exacerbated by inappropriate or inadequate social support, and the influential role significant others have on our eating behaviour. Marks' theory highlights these elements by his consideration of attachment theory (Pietromonaco et al, 2013; Goldberg et al, 2013), importantly showing the need to understand obesity and its onset from a life span perspective, whilst accounting for the influence of formative relationships (Tabbachi et al, 2007; Mikulincer & Shaver, 2007; Faber & Dube, 2015; Molnar et al, 2010).

The notion of behaviour being regulated by homeostasis where people should be motivated to eat when hungry and stop when satisfied may be true, but many people find it challenging to regulate their eating behaviours and to sustain this over a long period of time. A key aspect of fighting obesity is determining the psychological factors that explain why some individuals may be less susceptible to the processes and how this relates to their motivation to regulate their eating behaviours (Patrick & Williams, 2012; Teixeira et al, 2012). The COD theory may fail to adequately address this aspect. Specifically, unlike the theory of addiction, it

underestimates the importance of motivation and skills and the management of the self-regulatory process by the individual (Ryan et al, 2008; DiClemente & Delahanty, 2016) which suggests that individuals have limited capacity to self-regulate (West & Brown, 2013). It also devotes very little attention to the psychological resources needed for long-term maintenance. Lastly, the strategies Marks proposes to prevent obesity, namely tackling issues of stigma, reduction of energy-dense food consumption and improving plant-based diet access; do not consider individuals as active agents of their own behaviours (Pelletier et al, 2016).

Overall, the outlined theories highlight gaps in the theoretical domain of obesity which as a consequence limits understanding on how to develop health interventions that work effectively over the long term. Perhaps this is the contributing factor to failure to tackle the obesity epidemic. A key issue with the addiction theory and COD theory is that they do not clearly explain why some people exposed to the same conditions like abundance of unhealthy foods or negative life events do not gain weight and become obese (Giskes, 2005). However, all three theories acknowledge the complex biopsychosocial nature of obesity as a health condition. In this regard, they do well to show multi-faceted intervention targets to obesity and illuminate the scope for health psychologists to consider and implement approaches that could greatly address these core issues. In the context of weight loss surgery none of the above seem to really fit so more work needs to be done around theory exploration and development in this field, a key contribution of health psychology.

Obesity and psychological comorbidity

In contrast to the lack of concrete theoretical underpinning around the aetiology of obesity, psychological comorbidity in obesity is well documented. For example, specific literature on weight loss surgery psychology indicates the higher prevalence of psychological co-morbidities like mood disorders and psychological distress in weight loss surgery candidates (Abiles et al, 2010; Karmali et al, 2013) along with anxiety, personality disorders, alcohol use and low self-esteem when compared to controls or other obese patients who do not seek the procedure (Kalarchian et al, 2007; Greenberg et al 2009; Pull, 2010). Other studies have also shown eating problems like Binge Eating Disorder (BED) to have a prevalence of 10% to 27% (Marek et al, 2013; Kalarchian et al, 2007) in presurgical candidates. This is why psychological screening at the pre-surgical stage is vital and commonly used in weight loss surgery clinics during clinical assessment. The screening process is used to identify potential contraindications for surgery and the need for additional education or mental health treatment prior to surgery and to offer recommendations that may optimize outcomes (Block & Sarwer, 2013). There has been controversy around active exclusion of weight loss surgery candidates

due to psychiatric disorders, with researchers pointing out that these individuals could still experience improvement of health status and well-being postoperatively if adequate support is provided after weight loss surgery (Peterhansel et al, 2014). However, screening remains common practice and from the above it is quite evident that a lot is known about the psychological profile of weight loss surgery candidates through this process. However, what this pre-surgical screening process does not seem to address is the sequence in events leading to such psychological comorbidity which leaves our understanding of the cycle leading to obesity and subsequent theory building limited. In this sense, Peterhansel and colleagues criticism of this process is valid as current practice is overreaching, that is, working on an assumption that those not presenting with significant psychological disorder worthy of exclusion at the pre-surgical stage will not experience negative affect after receiving surgical treatment for weight loss.

Pre-surgery psychological factors and weight loss surgery outcomes

As noted in the previous paragraph, evidence regarding the impact of pre-surgical psychological disorders on weight loss or wellbeing after weight loss surgery is limited. This is illustrated by the lack of framing of weight loss surgery within a psychological context over the life course for patients. A recent study examined the prognostic significance of depressive symptoms in weight loss surgery patients over a 24 month follow-up period (White et al, 2015). Their findings showed preoperative depressive symptoms as not predictive of postoperative weight outcomes. However, interestingly, higher post-surgery depressive symptoms were predictive of poorer weight loss outcomes within the 12 month follow up period, a greater degree of concurrent and subsequent eating disorder psychopathology and lower quality of life. This shows that it is perhaps important to focus on monitoring and managing depressive symptoms and other psychological problems in the postoperative period in order to optimize outcomes such as weight loss, quality of life and adaptations of positive eating behaviours. Specific to eating problems like BED, some studies found that prevalence of BED in pre-surgical candidates persists after weight loss surgery with patients showing either a return to loss of control overeating and binge eating (Kalarchian et al 2002; Saunders et al 2001) or the development of frequent eating, which has been labelled ‘grazing’ (Saunders, 2004). BED and other eating pathology have also been negatively correlated with weight loss and weight loss maintenance following weight loss surgery (Mitchell et al, 2001; Kalarchian et al, 2002 & 2007). So overall, current studies have not found clear evidence of psychological predictors of surgery outcome. A review by Pataky et al (2011) on several studies investigating pre-surgical psychological profiles which would affect weight loss after surgery found inconclusive results. That is, there were no particular psychiatric conditions before surgery that could be related to

weight loss after surgery. Another recent review looking into the psychological predictors of mental health and quality of life outcome following weight loss surgery found that certain psychological factors appeared to be important predictors for post-surgery outcomes (Wimmelmann et al, 2014). For example, psychiatric symptoms like depressive disorders and anxiety before surgery seemed to positively predict postoperative depression and anxiety (de Zwaan et al, 2011) whilst a negative body image prior to surgery predicted poor mental health at a one year follow-up (Ortega et al, 2012). However, as only ten studies met the Wimmelmann et al review's inclusion criteria, this also highlighted how sparse literature in the area of predictors of weight loss surgery prognosis is and the need for further research. Overall, these research findings point further to the poor theoretical articulation of psychological processes within a surgery intervention for a complex health condition like obesity. This gap in theoretical framing reflects the need for a qualitative approach to this research area to complement the wealth of quantitative research evidence. Qualitative research has a long standing history of contributing to understanding of social structures, behaviours and cultures (Ritchie et al, 2014 Chapter 2). However more recently qualitative methods have also become renowned for directly aiding the development of new theories or refinement of existing theories (Shah & Corley, 2006). Open-ended techniques such as interviews to collect data may provide detailed, diverse insights of individuals who have had weight loss surgery that can illuminate the processes underlying statistical correlations and inform development of more concrete obesity theories (Forman et al, 2008).

Post-surgery Psychological Outcomes

As previously stated, the superiority of weight loss surgery when compared to other weight reduction interventions in relation to improving medical outcomes in severely obese individuals remains undisputed (Herpertz et al, 2004; Colquitt et al, 2009 & 2014). Earlier reviews have also shown an improvement in mental health and psychosocial status including social relations and employment opportunities for the majority of people after weight loss surgery thus leading to an improved quality of life, as well as a general decrease in psychiatric comorbidity and disorders (Herpertz et al, 2003). However, most data on psychological outcomes following weight loss surgery is limited to the first few years of post-surgery follow up (Herpertz et al, 2015). Additionally, although evidence from recent systematic reviews in this area shows that weight loss surgery can result in drastic weight loss and maintenance (Colquitt et al, 2009; Picot et al, 2009), and some improvements in aspects of quality of life and psychological functioning (Bocchieri et al, 2002a) in short term follow up of typically two to three years, longer term studies show minimal improvements in mental components of psychosocial wellbeing after surgery compared to behavioural interventions and usual care despite overall significant

improvements in physical quality of life, weight loss and co-morbidities (Karlsson et al, 2007, Herpertz et al, 2015). A very recent study by Canetti (2016) looked at the mental health and psychological functioning of weight loss surgery patients before surgery, and after 1 year and 10 year follow-ups, compared with participants on a dietary program. Despite achieving successful weight loss outcomes and better health-related quality-of-life scores after 10 years compared to baseline, their general mental health, neuroticism, sense of control and fear of intimacy scores showed significant deterioration after 10 years in comparison to the pre-operative time point. However, the dietary group remained psychologically stable among all three points in time. This finding of persistent mental health problems regardless of weight loss compared to counterparts who received dietary intervention as an obesity treatment is similar to findings from the systematic review conducted prior to this qualitative study (Jumbe et al, 2016) as well as findings from Herpertz and colleagues (2015) that show a subset within the weight loss surgery patient community that do not do well on measures of depression, anxiety, self-esteem and psychological wellbeing despite generally positive medical/physiological outcomes. Moreover my review emphasised the need for further research in this area to provide more comprehensive evidence on long term patient psychosocial quality of life following weight loss surgery as only two randomised controlled trials, two controlled trials and seven cohort studies met the inclusion criteria. Overall, research findings in this area suggest that despite drastic weight loss and positive physical health improvements that are experienced by weight loss surgery patients over time, some psychological problems like the disordered relationship with food (Saunders et al, 2001; Kalarchian et al, 2002 and 2007; Sarwer et al, 2008) initially present in the individual suffering from obesity remain. The findings also highlight the importance of identifying this risk group among weight loss surgery patients for which the dietary and psychological follow-up may be of special significance in order to put interventional steps in place for them earlier on (McGrice & Don Paul, 2015).

However, identifying this risk group might prove quite difficult to achieve, a key reason being the general lack of psychological monitoring following weight loss surgery. In contrast to pre surgery screening, psychological assessment following weight loss surgery seems to be less evident therefore not much is known regarding the psychological outcomes of weight loss surgery. This seems rather counterproductive considering the amount of attention that is put on screening for psychological disorder and risk before an individual has the procedure. Furthermore, the extensive psychological screening before weight loss surgery means there is a lot of data on the mental health of weight loss surgery candidates. Therefore assessing psychological outcomes after weight loss surgery in this patient group would seem the natural course in order to effectively evaluate whether this physiological surgical intervention tackles

or facilitates resolution of the pre-existing psychological conditions. Moreover, it has been suggested that weight loss surgery candidates may underreport mental symptoms to ensure approval for surgery because of subsequent noted increases in self-reported depression soon after surgery (Fabricatore et al, 2007), prior to onset of weight loss. This was experienced by the study researcher when shadowing the clinic assessments in the bariatric surgery department, where patients who were keen to have the procedure presented very positively when asked about their progress and general wellbeing by clinicians. Reflecting on this and discussions with the bariatric surgery team, it highlighted the importance of the one to one sessions and group work over a 6-month period before surgery, as a space to potentially tease out those underreported symptoms. Moreover, encouraging assessment of mental health outcomes in the postoperative phase may help build on research data that will provide a better picture of psychological adjustment that follows surgery. Consequently, the lack of formal psychological assessment in the postoperative phase means quantitative evaluation on the effect weight loss surgery has on patient psychological outcomes is patchy. This might be because weight loss surgery and its outcomes are still very much framed within medical lenses, making psychological outcomes are less of a priority (Johnson, 2013). Unfortunately, weight loss surgery elicits a lot of postsurgical psychosocial challenges as a result of drastic weight loss and other physiological changes from having the procedure. Bagdade & Grothe (2012) highlighted body image concerns, relationship changes, changes in mood, stress, or substance use (Sarwer et al, 2008) and weight regain (Ames et al, 2009) as potential postsurgical psychological concerns. The evidence to date suggests greater research around this patient group after surgery is needed to better understand how psychology and surgery interrelate within a behaviour that has developed across the life course. Framing this interrelation over time beyond the surgical procedure is crucial as potentially relevant behavioural changes that influence weight loss like healthy eating and exercise do not occur instantly but gradually therefore warranting long term monitoring.

Body image after weight loss surgery

Body image, a key aspect of quality of life, is a multifaceted construct defined as “one’s body-related self-perceptions and self-attitudes, including thoughts, beliefs, feelings and behaviours” (Cash, 2004, p.1). Within the context of obesity, body image acts as an important illustrative agent as it helps our understanding the social and psychological experience of being obese, the medical consequences of psychological issues, and the psychological contributors to the aetiology of obesity (Schwartz & Brownell, 2004). For instance, as previously alluded to, research looking at obesity and body image has consistently found that one construct, body image dissatisfaction defined as a persons’ negative thoughts and

feelings about his or her body' (Grogan 2007) is reported as one of the most consistent outcomes of obesity. For example, a study by Wilson and colleagues (2013) found higher BMI to be positively correlated with body image dissatisfaction and that subsequently higher body image dissatisfaction was associated with poorer psychosocial functioning. In relation to weight loss surgery, body image dissatisfaction or appearance concerns are cited as key reasons people seek weight loss treatment (O'Brien et al, 2007; Vartanian et al, 2012). We can therefore assume that most weight loss surgery candidates suffer negative body image. In relation to post weight loss surgery outcomes, quantitative studies have documented that body image improves after weight loss surgery, probably due to significant weight loss (Sarwer et al, 2010). A recent qualitative study seeking to understand the lived experience of body image in young women after the surgical obesity treatment found that their participants' reported constantly feeling on the edge of control in the post-surgery stage, which made the authors conclude that perception of control may be a vital aspect of body image and key to understanding individuals' feelings of empowerment, self-efficacy and therefore subsequent improvement in quality of life and body image after surgery (Jensen et al, 2014).

However the extent to which body image improvement persists following weight loss surgery is unclear. The percentage of body contouring surgeries among those who have had weight loss surgery suggests that many are still dissatisfied with their body shape (Sarwer et al, 2010; Kitzinger et al, 2012a & 2012b). Current research strongly suggests that massive weight loss which leaves patients with a huge amounts of excess skin can trigger major body image dissatisfaction, especially if the individual had a greater BMI at the onset of the procedure (Steffen et al, 2012; Gilmartin, 2013, Lyons et al, 2014). What the above evidence shows is that despite studies reporting general psychological distress at the disfiguring effect of excess skin, the implications for body image after weight loss surgery are not thoroughly considered or understood (Gilmartin et al, 2014). When talking to both patients and health professionals in this specific clinical setting, the issue of excess skin was a contentious one because even though both parties acknowledged the psychological distress excess skin caused, several barriers were noted. Firstly, contouring surgery was not readily funded by the service and secondly, the eligibility criteria for contouring surgery was inexact, involving input from primary care. This gave the impression that this issue was not being thoroughly considered from the top down even though it was an issue people were experiencing on the ground. Nonetheless, health practitioners who care for weight loss surgery patients need to be mindful of this patient group's potential body image concerns and avenues of support in the post-surgical phase regardless of individual's extent of weight loss (Lyons et al, 2014).

Patients and health professionals' perspectives on post-surgery outcomes

The literature reviewed shows that over the years, very few research studies examined psychosocial health outcomes following weight loss surgery quantitatively (Jumbe et al, 2016). A key reason for this may be the short term nature in which the procedure is delivered and assessed as an intervention for obesity. This seems counterproductive especially as research suggests trends in weight regain after long term follow up (Adams et al, 2012) implying surgery alone may not be a sustainable obesity intervention. Moreover, weight loss surgery as an obesity treatment is predominantly framed within a medical context despite research showing obesity onset as a resultant combination of not just biological attributes but psychosocial and environmental factors (Vandenbroeck et al, 2007; Marks, 2015). This may be a reflection of the approach of health professionals involved in the weight loss surgery process. However, this potentially overlooks patients' psychosocial needs. The majority of quantitative research work in this area has primarily focused on physical measures such as weight and reduction in co-morbidities (Jumbe et al, 2016). Assessment of psychosocial functioning has been limited to pre-existing validated self-report measures which do not allow the opportunity to adequately capture detailed insights into the experience of having obesity surgery as defined by the patient themselves (Jumbe et al, 2017). Although self-report measures are seen as practical and low cost, generally easy to administer and useful for data collection in large samples, they are also subject to certain limitations. For example, some questions may be misunderstood, participants may not accurately recall past events, and response bias due to social desirability or response acquiescence is not uncommon. This is especially true when measuring sensitive topics such as obesity and weight loss, where trends of under reporting for weight and over-reporting for height in relation to BMI have been observed (Gorber et al, 2007). Furthermore individuals with obesity suffering from self-directed weight stigma are more likely to report poorer health on self-report measures (Pearl et al, 2014). Another limitation of using self-reported measures to capture psychosocial outcomes after weight loss surgery is that the rigidity in responses makes it difficult to collect data over a long period of time rich enough to adequately encapsulate the disease trajectory of obesity alongside psychological experience. This limitation is illustrated in this literature review, which shows a lack of research looking at eating behaviour and obesity over the life course, leading to gaps in theory building around obesity. A qualitative approach to this research may narrow the gaps in knowledge highlighted and potentially inform theory that can develop post-surgical interventions that promote long term weight loss.

To date several studies have focused on qualitatively exploring the impact of weight loss surgery on people's lives and have shown that the rapid and comprehensive bodily changes

following the procedure are complex. For instance, studies indicate that people decide to have the procedure as an external way of bringing control to their weight and eating (Ogden et al, 2011). In turn, the physical enforcement of reduced food intake and limitation of food choice brings about a new sense of control amongst this cohort which individuals seem able and happy to adjust to and embrace (Ogden et al, 2006). Whilst exploring fifteen patients' experiences of weight loss surgery and post-surgery consequences, Ogden and colleagues (2005; 2006) found the procedure had a positive influencing effect on eating behavior, where new experiences of fullness and reduced hunger was reported. Although reporting negative feedback like nausea and pain, this study found a reduced role of food in participants' lives and re-established a sense of perceived control over their eating behavior (Ogden et al, 2005). More recent qualitative studies report similar changes in eating behavior. For example, in Engström & Forsberg (2011) all sixteen participants described starting with little or no control towards eating before surgery and moving to established eating routines a year after surgery. However, it seems the physical control mechanism imposed by the surgical procedure faded for these participants 1 and 2 years post-surgery, and maintaining control became a struggle with lingering fears of weight regain linked to fading physical restriction on food intake post-surgery ensuing. In this study, control seemed to be a central theme that ran through changes in eating behaviour experienced following this drastic obesity treatment. It seems this demand for control over eating and other health related habits expressed by patients as they progress into their postoperative journey may remain an ongoing psychological struggle (Natvik et al, 2013).

Further research has reported emotional and social changes, such as feeling vulnerable and experiencing imbalance in family and relationships (Meana & Ricciardi, 2008). Recent studies have commonly found the phenomenon of emotionally coming to terms with the drastic changes to their body over time particularly challenging amongst their participants (Warholm et al, 2014; Faccio et al; 2016). In Warholm et al (2014), a study of two participants reported that the physical changes to their body due to drastic weight loss were complex because they triggered strong ambivalent feelings. In relation to mobility, participants reported that even though they were more physically agile and therefore active in a smaller body, actually starting a regular exercise routine was hampered by memories of past negative experiences of being stared at when doing exercise. Similarly in Faccio et al (2016) participants reported thinking, behaving and relating to others as though they were still obese even one year after surgery. Another consequence of drastic weight loss articulated by this patient group is the resultant excess skin, flaccidity, and scars that patients see as therapeutic failures which can lead to a constant quest for plastic surgery and potentially reignite body dissatisfaction (Magdaleno et al, 2011). These studies show that perceptual acceptance and self-acceptance of a non-obese

identity for this group is challenging and takes time to embrace regardless of weight loss. They also illustrate the complexity of psychological processes faced by individuals once they have received the surgical intervention in adapting to both positive and negative physiological changes, which warrants postoperative psychological support.

Specific to social changes, Bocchieri et al (2002b) reported that although patients considered the process of surgery as one of rebirth and positive transformation, they also described some life changes that generated tensions which needed to be negotiated. These tensions seem to be related to embodied change which alters how patients relate to the social world (Natvik et al, 2013). For example, participants reported an altered self-concept following surgery which subsequently influenced a more active role within the family and general society where they felt more confident and respected (Engström & Forsberg, 2013). Magdaleno and colleagues (2010) also reported the experience of acceptance and social reinsertion amongst their participants following surgery, which motivated upkeep of the challenge of weight loss. However, some people also reported feelings of disillusionment (Magdaleno et al, 2010) where they experience jealousy, fear and mistrust within previously stable relationships following their new found confidence and improved self-esteem; something that had not existed until having weight loss surgery (Meana & Ricciardi, 2008). Generally negotiating social 'fat' stigma whilst adjusting to one's new 'thin' body and new 'normal' identity is another challenge (Meana & Ricciardi, 2008). Perhaps weight loss surgery patients' ability to cope with these complex emotional and social tensions might have a strong impact on long-term results

To date, limited research looking at physicians and nurses attitudes towards obese patients suggests they view obesity as mainly as a behavioural problem (Ogden & Flanagan, 2008) that is the patient's responsibility, rather than a medical problem requiring a medical solution (Epstein & Ogden, 2005). Studies also demonstrate that health professionals hold broadly negative stereotypical views towards obese people (Harvey & Hill, 2001; Foster et al, 2003; Poon & Tarrant, 2009) similar to general society (Stuart et al, 2015). Qualitative studies specifically exploring health professionals' views towards obese people who undergo weight loss surgery or their working experience with this patient group are near absent. A search of the literature revealed two studies. In the first study based in Texas, Whitfield & Grassley (2008) interviewed 12 nurses asking them to share their experiences of caring for bariatric patients postoperatively. Their phenomenological data analysis revealed challenges related to power struggles between nurses, patients and families within two themes. In the first theme about helping patients ambulate for the first time, nurses described navigating between patients who feared hurting themselves or falling and those who did not want to be helped. The second theme about 'negotiating with families' illustrated the complex family dynamics

the nurses dealt with whilst supporting patients with their self-care and eating. In particular nurses gave examples of obstructive family behaviours, like 'doing everything for them' as damaging to patient recovery because it delayed ambulation. Interestingly, notions of health professional prejudice towards obese patients were not supported. Likewise, the second study also found that registered nurses held positive attitudes toward obese adults, recognizing the complex care needs of bariatric patients but also the increased workload associated with meeting these demands (Zuzelo & Seminara, 2006).

It is important to understand health professionals' experiences working in this area in order to gain insight into issues they feel are central to effective weight management following the surgical intervention and hopefully improve treatment and patients' satisfaction (Whitfield & Grassley, 2008). Also, similar to other chronic conditions, the nature of obesity places considerable emphasis on the ability of patients to manage their own weight loss in the long term (Kennedy et al, 2013) whilst using the surgical intervention as a tool. This requires effective communication between health professionals and patients, in order to create an environment free from stigmatizing attitudes where patients feel empowered to manage their weight loss independently after weight loss surgery (Malterud & Ulriksen, 2011). Research is needed to explore if health professionals feel they the tools to enable them to provide this environment to patients.

Generating more rich in-depth data in this area is vital as it gives health professionals and research community alike information on whether patients feel psychological support is needed after weight loss surgery and, if so, specifically what kind of support is most amenable. Specifically, there is a need to add more insight into longer term life course antecedents to obesity. Moreover, it is important to shed more light on the complexity of psychosocial factors in order to build a theoretical pathway for obesity and its management. A missing piece of the puzzle in current obesity management is around how surgery for obesity might fit into that pathway. Qualitative data from patients and health professionals' understandings may show us how to maximise the effectiveness of weight loss surgery within a behaviourally driven issue using a health psychology perspective.

Context of Weight Loss Surgery Data

Taking into account the worldwide impact that obesity has on health outcomes, it is important to acknowledge the context of empirical data on weight loss surgery presented within this thesis and how it applies to a UK NHS setting. Data from the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) infers regional differences between

Europe, USA/Canada, Latin America and Asia/Pacific in the provision of surgery, apart from the universal increase in sleeve gastrectomy (Buchwald & Oien, 2013). For example, whilst the percentage of RYGBP procedures has increased over time in Europe between 2003 and 2011 (11.1 to 43.5%), a marked decrease in the USA/Canada has been noted (85 to 47%). Saying this RYGBP, SG and AGB are still the most commonly performed procedures both worldwide as well as within the UK context. Although northern European countries, particularly Norway and Sweden, seem to pioneer research looking at long term psychological impact of this procedure, the majority of large scale quantitative studies in this area seem to come from the USA, (Jumbe et al, 2016) possibly because the USA has the highest prevalence of obesity and also therefore greater number of procedures and largest participant pool. There seems to be more of a balance when it comes to qualitative research across Europe and the Americas. Therefore, it is worth noting that much of the above empirical data is set outside the UK where delivery of weight loss surgery is different. For example, a majority of USA based cohorts would have accessed their procedure through private medical insurance (Davis et al, 2006) whereas this thesis focuses on NHS healthcare free provision. Other countries seem to present more mixed proportions of private and public funded service provision (Sørensen et al, 2016; Lazzati et al, 2014; Klemensberg et al, 2011). Despite generally shorter waiting times in private clinics, patient care seems to be less comprehensive compared to public hospitals (Klemensberg et al, 2011) which raises the question of long-term value for money. In Australia, which accounts for the largest percentage of procedures in Asia/Pacific, Sharman and colleagues (2016) also found publicly funded bariatric surgery policies and guidelines were highly variable and lacking in consistency with national guidelines, particularly in the areas of patient eligibility and follow up services. Considering these variations in service provision, it is important to find out whether participants within a UK context report certain postoperative experiences raised by patients from other countries.

Research Aims

To build on previous qualitative research and findings from the author's systematic review (Jumbe et al, 2016), alongside the gaps in knowledge highlighted around sequence of psychological outcomes following weight loss surgery in this literature review, this study aims to gain more understanding of the experiences and psychological needs of patients who have undergone weight loss surgery and health professionals who provide psychological care to patients undergoing weight loss surgery, by incorporating the following objectives;

1. Explore patients' experiences of life in the longer term, after weight loss surgery, discussing perceived benefits and limitations of the procedure, and realisation of patients' expectations.

2. Explore the views of health professionals who provide weight loss surgery, focusing on their experience of caring for patients in the postoperative phase
3. Compare patients and health professionals' accounts to investigate the extent of concordance between the two parties. This is crucial for assessing health professionals understanding of their patients' experience of the procedure and their awareness of subsequent health needs.

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CHAPTER 2 – METHODOLOGY

Design

This study aimed to gain an understanding of the experiences and psychological needs of patients who had gone through weight loss surgery. We also wanted to explore the views of health professionals providing psychological and medical care to these patients. This is because we know that obesity and general ill health negatively impacts people in physical, mental and social well-being. Therefore in line with the biopsychosocial paradigm of health and illness it was felt necessary to encompass psychological and medical care, and explore how health professionals prioritise these elements to ascertain the recommended holistic approach to patient care (Adler, 2007). As previously mentioned health professionals' views would then be compared with the patients' experiences to see if similar themes or patterns emerge, to gauge whether health professionals understood and empathized with their patients' weight loss surgery journey and health needs (Adler, 2007). Disparate questionnaire ratings have been reported between health professionals and patients in a recent study investigating how the two groups prioritise outcomes of weight loss surgery (Coulman et al, 2016). For example 'feeling able to live a normal life' and 'excess skin following weight loss' were patients only priorities whereas weight and re-admission rates were solely health professional priorities. It is therefore necessary to explore patient and provider experiential views in the post-surgical phase to inform clinical practice guidelines.

Paton (2005) states that a study that uses qualitative inquiry generates rich and detailed understanding of naturalistic real world settings, communicated through participants' narratives. Given the aims of this study, particularly the need to gather information about the reality of life in the longer term after weight loss surgery based on patients' experiences, I employed a qualitative research design in order to aptly address the research goals.

Qualitative interviewing is the most common technique used to gather experiential qualitative research information because it is particularly useful for getting the story behind a participant's experiences whilst giving the interviewer flexibility to pursue in-depth information around the topic (Seidman, 2013). Specifically, guided or semi-structured interviews allow the researcher to structure the discussion around themes or topics rather than direct questions enabling the participant to take control or ownership of the discussion whilst the researcher present keeps things on track (Grbich, 2012). I therefore felt semi-structured interviewing would be the most appropriate way to capture individuals' stories of their lives after weight loss surgery journey, gain insight into psychological wellbeing in the post-surgical phase, and hopefully use participants ' narratives to build a comprehensive picture of psychological trajectory over time

(Jumbe et al, 2016). In particular, face to face interview were the chief approach as one can take advantage of social cues such as voice and body language of the interviewee which can add extra information to the interviewee's verbal answer of a question (Opdenakker, 2006). For example, it would be easier to gauge when to stop an interview prematurely if a participant found some of the questions upsetting, thus facilitating patient wellbeing (Wengraf, 2001). Another benefit of face to face interviewing is the synchronous communication of time where the interviewer and interviewee can directly react to what the other says which leads to the advantage that the interviewee is more spontaneous in their response and does not deliberate too long. In saying this, face to face interviewing as a technique is not without its challenges. Specifically, it can be time consuming due to the logistics involved when contacting people to arrange a venue and suitable times for interviews, plus managing cancellations due to various reasons. It can also be expensive for the researcher and participants if your potential cohort are spread out across a large geographical area as this requires extended travel (Seidman, 2013). This was the case with the recruiting site for this study where the bariatric surgery service covered several counties in the region. Taking this into account participants were given the option to do a Skype or telephone interview if more convenient and more importantly to avoid alienating individuals who did not feel comfortable travelling to the recruiting hospital. Despite limitations to visual cues, researchers suggest these two approaches are viable alternatives as the lost visual cues allow the researcher to 'stay at the level of text' which avoids them imposing contextual information on the data, and practically both offer more flexibility when scheduling interviews and shifting time changes at the last minute (Rohde et al, 2006; Holt, 2010; Hanna, 2012). As such, two broad interview schedules (outlined in the data collection section) were developed by the researcher after a review of research literature, consultation with academic supervisors, multiple discussions with health practitioners in this field (specifically two psychologists) and an individual living with a gastric band for contextual insight.

Thematic analysis was chosen as a qualitative analysis method because of its ability to pinpoint, examine and review themes within data. In this context a theme captures something important about the data in relation to the research question (Braun & Clarke, 2006). Other approaches including grounded theory and interpretative phenomenological analysis (IPA) were considered as both also seek patterns in the data. However, they are both theoretically bounded which limits their flexibility in approach to data analysis. Specifically, IPA is wed to a phenomenological epistemology (Smith & Osborn, 2015) where the goal is to study how people make meaning of their lived experience whereas grounded theory which comes in different versions (Charmaz, 2002) essentially aims to develop explanatory theories of basic social processes studied in context (McLeod, 2011; Stark & Trinidad, 2007). In contrast

thematic analysis is without theoretical binding and this more flexible allows the researcher to independently and clearly set a plan of action free of pre-existing notions, hopefully generating more data driven findings (Braun & Clarke, 2006). Considering the above, this study took on an inductive approach to thematic analysis where data coding was conducted without trying to fit it into a pre-existing framework or the researcher's preconceptions in an attempt to generate authentic interpretation of answers to the research question from the participants' standpoints and subsequent rigour to research findings. Moreover thematic analysis was conducted within a realist paradigm where one can theorise motivations, experience, and meaning in a straightforward way, because of the simple assumption that language reflects and enables us to articulate meaning and experience (Roulston, 2001).

Patient and Public Involvement (PPI)

As stated above the patient facing documentation was partly developed following consultation with health practitioners who work within the field of weight loss surgery and an individual living with a gastric band.

Specifically I met with the individual with lived experience of weight loss surgery to discuss what their experience of having the gastric band surgery was like and how the procedure has impacted their life to date. As they had the procedure for 5 years they were particularly useful at providing a long term perspective. They also provided feedback on the interview schedules before the documents were submitted to research approval bodies (see Appendix 1). However I was wary that because they had the procedure a while ago, their experience might be different to that of more recent patients, especially if there had been changes in service provision over time. Another thing I was cautious about regarding this feedback was the fact that it was from one person. Perhaps consultation on the study materials from a focus group would have generated a wider range of opinions particularly from people who had had other procedures like a gastric bypass or sleeve.

Feedback from the health professionals' perspective came from two psychologists from a local NHS hospital. I met with them individually at the hospital to discuss the current situation with regards to psychology support following weight loss surgery and how the psychology team was integrated in the service. I was coming at this blind, with no working experience in this area and minimal knowledge based on reading current guidelines (National Institute for Health and Care Excellence, 2014). I also asked them about current research work within the area. This was to avoid designing a study that had already been done. Their advice was very helpful in shaping the study design and recruitment approach. I have included notes made following these encounters (Appendix 2).

There was general concordance in views and feedback between the individual and health professionals that I consulted. This gave me confidence that potential participants would connect with the materials, especially the interview questions.

Recruitment Approach

Methods of purposeful sampling, a type of nonprobability sampling in which the researcher selects only those persons that satisfy the needs of the study as they evolve across time were used. It was felt this approach would adequately generate a productive diverse sample to answer the research questions (Marshall & Rossman, 2014). Specifically two strategies to this method were used. Snowballing was used to recruit health professionals, where new participants came to know about the study through their colleagues who had already participated in a research interview or expressed an interest to take part in the study. The Bariatric Psychology Service from a local NHS hospital was approached in the first instance about the study with the intention to conduct key informant interviews with a number of health professionals who provide psychological and medical care to patients who are going through weight loss surgery. This sample covered the range of professional backgrounds within a NHS multidisciplinary bariatric surgery service (dieticians, nurse specialists, psychologists and surgeons) to provide a rich information source. These health professionals were invited to take part following a study talk by the researcher and/or receipt of an email from the principal investigator (with a participant information sheet and a copy of the consent form attached), inviting them to take part in the study. Those interested in taking part in the study emailed or called the researcher to arrange an interview date at the NHS hospital at a time of their convenience.

Semi structured interviews were also conducted with individuals who had the lived experience of undergoing weight loss surgery between 1 and 10 years ago, identified through the bariatric surgery service. Convenience sampling was used to recruit these individuals because of the already available patient database that obtained contact details of individuals who had gone through the service over the last 10 years. Specifically the service administrator sent a list of all eligible patients (94) to the principal investigator via email. The principal investigator would then contact the researcher indicating potential participants. Both parties would subsequently arrange a suitable date and time to meet at the service and together, send out invitation letters along with a reply slip (see Appendix 3) and a prepaid envelope to return the slip in, the participant information sheet and a copy of the consent form (see Appendix 4) to the identified patients. This process was seen as adequate for protecting patients' identifiable data in line with the data protection act. The researcher subsequently contacted responders who sent

back a reply slip and expressed an interest to take part in the study by telephone or email to firstly confirm that they still wanted to take part and then arrange an interview appointment. As another recruitment avenue local patient weight loss surgery support groups were also approached. To maximise study awareness through this route, a study poster (Appendix 5) was sent to local support groups to advertise the research to potential participants. It was thought that interested parties would contact the researcher using contact details on the poster.

Unfortunately this recruitment approach proved to be unfruitful as no participants were recruitment through support groups. As a result all participants, bar one, were recruited through this one service. Recruiting through more than one service was considered. However, several restrictions such as time and expense had to be realistically deliberated. Specifically this study had to be delivered within the timeline of a professional doctorate research module and there was no funding that could cover for logistical elements like researcher travel costs, travel reimbursement for participants and paperwork costs. Recruiting from one site does have limitations. For example, Bellomo et al (2009) suggests one is more likely to acquire a less heterogeneous sample. However, this service covered a large geographic area with a range of socioeconomic background. There may also be issues raised by this group of participants that are very site specific or only prevalent in the geographical area the service covers. These limitations will be reflected upon in light of the study findings. Moreover the focus of qualitative research is not to find generalizable results but to acquire diverse personal perspectives from individuals that are pertinent to the research topic at hand (Ritchie et al, 2014). In this regard, recruiting from this service offered a solid starting point for evidence synthesis.

Participants

In view of the recruitment methods described, participants approached and recruited to this study had to meet the following inclusion/exclusion criteria:

Participant	Inclusion Criteria	Exclusion Criteria
Patient	Aged 18 years and above Undergone weight loss surgery at least 1 year ago or longer	Acutely unwell Has severe communication problems Participants for whom English is not a first language or that do not have sufficient understanding of English to consent Has had revisional weight loss surgery
Health Professionals	Aged 18 years and above. Actively providing psychological or medical after care to people who have had weight loss surgery. Working in the post for at least 6 months	Providing care in a personal rather than professional capacity

NHS Research Ethics and local R&D approvals were obtained on 13th January 2015 and 30th January 2015 respectively prior to commencing with recruitment at the local NHS hospital on 2nd March 2015. A total of 10 people who had had weight loss surgery and 8 health professionals participated in the study. All the interviews were conducted between March and October 2015 by the researcher. Most of the interviews were face to face, at the NHS hospital or university settings although participants were also given the option of a telephone interview. The interviews generally took between 30 to 60 minutes to complete. There were 12 responders from the study invitations mailed out to patients from the hospital. Of those twelve respondents, one no longer wished to be interviewed when contacted by the researcher as they were between jobs which limited their availability. One other respondent agreed to be interviewed but subsequently did not attend their scheduled interview, and did not respond to further contact from the researcher. All health professionals who were approached about the study responded positively to the study invitations and were subsequently interviewed apart from one who was unable to make their scheduled interview at the last minute because they were required for an emergency procedure. Fourteen out of the eighteen interviews were face to face, with all but one taking place at the hospital. The latter took place at the university premises. The other four participants opted for a telephone interview as this was more convenient for them (2 lived outside the core geographical area of the recruiting site and 2 lacked time due to work commitments). Only one telephone interviewee was a health professional.

Patient cohort

The general characteristics of this cohort are reported in Table 4. Please note one patient participant did not return their demographic form. The average age of the patient cohort was 54 years, with most participants being 50 years old and above. There was only one male in the patient cohort. These characteristics generally reflect the wider weight loss surgery patient group as reported by the recent UK National Bariatric Surgery Register (Welbourn et al, 2014) where people who have the procedure tend to be older and female, although since 2009 UK national reports have shown the proportion of men seeking surgery has been increasing. Unfortunately, the only other male respondent subsequently did not attend his scheduled interview. The majority of the group was in employment (56%). Five participants stated they had a diploma or similar qualification; the others did not disclose information on educational background.

In the United Kingdom, gastric bypass is the most popular type of weight loss surgery through public funding, followed by the sleeve and band. Within the current patient cohort there was representation of all three common procedures. Specifically, five participants reported having a gastric banding, three had a gastric sleeve and one had a gastric bypass. It was felt the variety in weight loss surgery procedures attained within the sample group would be adequate to gain depth of understanding around the experience of having weight loss surgery.

Table 4 Details of Patient Interviewees

Pseudonym	Age	Sex	Time since surgery	Type of Surgery	Discharged from service
Sarah	51	F	6 years	Gastric Band	Yes
Pauline	-	F	3 years 2 months	Gastric Bypass	Yes
Hazel	60	F	2 years	Gastric Band	No
Gail	53	F	2 years	Gastric Sleeve	No
Frank	56	M	2 years 3 months	Gastric Band	Yes
June	62	F	3 years	Gastric Band	Yes
Anna	49	F	2 years 2 months	Gastric Sleeve	No
Fran	35	F	2 years 6 months	Gastric Sleeve	Yes
May	60	F	2 years 2 months	Gastric Band	No
Harriet	60	F	5 years	Gastric Bypass	Yes

*information based on participant's transcript as demographic form not returned

Recruiting follow up patients at different time points in their postoperative journey was crucial to gain understanding of experiential psychological trajectory following weight loss surgery. When weight loss surgery was initially set up as an intervention within the NHS, no set follow up period was assigned because the general assumption was that patients would be followed up for as long as needed (National Institute for Health and Care Excellence, 2002). However,

the health professionals from where the study took place explained that following recent changes to National Institute for Health and Care Excellence (NICE) guidelines, this NHS service has adopted the new recommendations which state that patients should be offered a follow-up care package for two years after having weight loss surgery within the bariatric service (National Institute for Health and Care Excellence, 2014 section 1.12). An obvious reason for the time limit is the increase in people eligible and seeking weight loss surgery which makes it impossible for the service to follow up everyone indefinitely. In light of this change, five patient participants were officially discharged from follow up because they had had their surgery more than two years ago. Overall, this patient sample hit the target population for research in weight loss surgery in terms of type of weight loss procedure received and length of follow up years considering trends in the latest report from the UK National Bariatric Surgery Registry (Welbourn et al, 2014).

Health Professionals cohort

The recruited health professionals covered a range of roles; namely a physician, a surgeon, three psychologists, one bariatric practitioner and two dieticians, reflective of all vital clinical staff within an NHS bariatric surgery service. Besides formal clinical training, this group also encountered a lot of informal on the job shadowing to increase their general professional clinical experience in the area of weight loss surgery. It was felt that 6 months as a minimum period working in this particular service was sufficient time for one to settle within a job role and start to gain experience of a particular patient group.

Overall because there was a good representation of all roles present within the bariatric service multidisciplinary team (MDT) and length of experience working with weight loss surgery patients amongst this cohort that ranged from 18 months to 9 years, it was felt that these eight health professionals would have sufficient diverse perspectives and knowledge of this NHS service to allow them to give very informative real life depictions of how the service operates and insight into patients' experience of weight loss surgery from their standpoint.

Data collection

Written informed consent was obtained from each participant before doing each interview. A conversational style of interviewing was used, supported by the interview schedules (shown below) to guide the researcher through each interview session whilst exploring key issues, providing general structure but not rigidly dictate the line of questioning. To strengthen the data capture process, interviews were audio taped (with the participant's permission) and

transcribed verbatim by the researcher within 3 days of being conducted. At the end of each interview, participants completed a short demographics form (appendix 6). The researcher also informed each participant that they may be contacted during the course of the research study to feedback on preliminary findings and approve the use of anonymised quotes from their interview transcripts that are chosen in the research write up.

In further consideration of research ethics during debriefing, the researcher reconfirmed contact details to participants and encouraged participants to make contact should they have any concerns or queries concerning the research, before or after participation. In addition, participants were encouraged to contact their healthcare providers and were signposted to support organisations listed on the participant information sheet to contact should they experience any psychological or emotional distress during or after the research. Participants were also informed of their right to withdraw from the research at any point during the informed consent process. It was made clear that the information generated within the interviews would only be used for research purposes and that data would be held securely and confidentially in line with NHS Research Governance Framework (Department of Health, 2005). Moreover, data included in any reports would not have any identifying features. This had to be especially well managed for the health professionals' cohort as a small specialist multidisciplinary team that worked closely therefore the possibility of being identified by their peers was likely. This issue was addressed by recruiting more than one person per role to minimise the ability for others within the team to identify each other. Moreover, instead of pseudonyms, codes were assigned to quotes from health professionals instead. The geographical location of the recruiting site is also not mentioned in the thesis.

Patient Interview Schedule:

1. Please tell me when you had weight loss surgery and the aftercare support you received after the procedure?

- Who was involved? How long was follow up?

2. How has weight loss surgery affected your quality of life now that you are ... years post-op?

3. What is different for you now compared to the first year after weight loss surgery?

4. How has weight loss surgery impacted your (physical) health?

- Positives and negatives

5. How has weight loss surgery impacted the way you feel emotionally?

- Emotional / psychological health? Positives? Negatives?

6. Has weight loss surgery impacted your personal relationships?

- In what way?

- What (other) cultural/social implications you experienced since WLS?

7. Do you participate in any types of weight loss surgery support groups or online communities?

- If any...why OR if none... why not? What have you gained from them?

- Other sources of support?

8. Are there any other things you would like to say about weight loss surgery and how it has impacted your life that we haven't covered?

9. Overall, are you happy with the results you have experienced from weight loss surgery?

10. Overall, how are you doing now?

- Would you say you feel in control of your weight? Eating? Physical activity?

Health Professionals Interview Schedule:

1. Please tell me about your role within the weight loss surgery team.

2. How is aftercare for a service user planned by yourself (and the Team) after they have had weight loss surgery?

3. On average how long would you be expected to see a service user for after they have had weight loss surgery?

4. Is the service user's aftercare reviewed within the team?

5. There is a term being used in health care now called Personalisation. For many people, personalisation is often seen as putting service users firmly in charge of their care and support and that care is designed with their full involvement and tailored to meet their own unique needs. Do you think your approach to aftercare and treatment planning with service users is personalised?

6. How do you consider issues of safety and risk for service users after they have had weight loss surgery?

7. Are family members/carers/friends involved in the aftercare process?

8. How has the provision of weight loss surgery and aftercare changed over the years?

9. Do you think weight loss surgery is a good treatment for your service users in the long term?

10. Can you suggest an intervention that would improve the aftercare provided to service users after having weight loss surgery?
11. Is there anything else you would like to say that we have not covered?

Data Analysis

The interview transcripts were analysed thematically in accordance with Braun's and Clarke's thematic approach (Braun and Clarke,2006) which outline a series of phases through which researchers must pass in order to produce a thematic analysis, providing a clear, well-defined explanation of what it is and how it is carried out whilst maintaining the "flexibility" tied to its epistemological position. An inductive approach to the analysis was employed where identified themes were strongly linked to the interview data due to assumptions being data-driven (Boyatzis, 1998) rather than trying to fit the data into a pre-existing model or frame. This approach offers a systematic procedure for analysing qualitative data where the analysis is guided by specific objectives as outlined in the set research and purposefully allows research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by structured methodologies (Thomas, 2006).

Initial thoughts and ideas were noted down throughout the research process, this being considered an essential stage in analysis (Riessman, 1993). Using guidance by Braun & Clarke (2006) transcribed data was re-read and listened to several times by the researcher to ensure the accuracy of the transcription and closeness with the data. Subsequently, the notes and ideas generated through transcription and data immersion were coded to identify features of the data that the researcher considered pertinent to the research questions. Repeated patterns within the data set were also noted. The third stage involved searching for themes; these explain larger sections of the data by combining different codes that are considered very similar or the same aspect within the data. Braun and Clarke (2006) suggest the development of thematic maps to aid the generation of themes to help researchers visualise and consider the links and relationships between themes. The mapping of themes was done in several stages. Primarily the coded interview data (Appendix 7 - interview codes table) was grouped into eight initial themes derived from the whole data set of both the patient and health professional interviews (appendix 8). This represents the first attempt to synthesise the themes into a meaningful pattern and to develop a broader understanding of the entire data set. This initial attempt to derive thematic meanings across the data from the participants' responses is also a very tentative stage of data analysis. The preliminary main themes are shown within coloured ovals to indicate relative importance. Text descriptions in the rectangular boxes represent the meanings behind the suggested themes; these are linked to

respective themes by colour coded arrows. The boxes with dashed lines hold text that describes pertinent sub-categories within the meanings they are aligned to. Once a coherent pattern was formed 'higher level' themes were considered in relation to the patterns noted in the data set as a whole to make sure the themes accurately reflected what was evident in the interview transcripts (Braun & Clarke, 2006). In phase five, these themes were clearly defined and later accompanied by detailed analysis. In the final stage (the report production) examples from the transcripts were chosen to illustrate elements of the themes, help identify issues within each theme and present clear examples to points being made. Where relevant, patients' interviews were compared with the views of health professionals involved in weight loss surgery and ongoing care to help establish validity of study findings using these diverse viewpoints. NVIVO was used to facilitate this data analysis process.

The problem of bias in qualitative research particularly is still debated in methodology texts and there is a lack of agreement on how much researcher influence is acceptable, whether or not it needs to be "controlled," and how it might be accounted for. In order increase rigour in the qualitative analysis process I sought feedback on the themes from the study supervisory team and the principal investigator on an ongoing basis to verify my analysis and general interpretation of data attained from the interview transcripts. Similar to Ortlipp (2008) I also kept a reflective journal throughout the recruitment and data analysis process in order to increase transparency of my preconceptions and biases in the research, and to explore the impact of critical self-reflection on research design (see journal extract in Appendix 9). In addition, I have included a personal reflection on my influence on the research process later on in chapter 5 of this thesis based on notes I made in my reflective journal and professional skills log over the duration of the research process. I mostly used the reflective journal to make notes of recruitment progress, poignant participant interviews and lessons learnt when shadowing the bariatric surgery service. The journal was a vital learning tool for me as a researcher. In particular, the notes were helpful during the process of interpreting the transcripts and writing up as I could look back over events, consider what I have learnt and how I have learnt it. The journal was also a useful account of my professional development, as I could use it to read over challenging experiences I had gone through.

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CHAPTER 3 – RESULTS

Before going into the detailed exploration of the themes identified from the interview transcripts, it was felt necessary to provide an overview of the operational patient pathway of this particular NHS bariatric surgery service. This is because after reading through the interview data it became apparent that having weight loss surgery through the NHS involved going through a lengthy and complex process. Specifically, an important revelation that became apparent as I interviewed both patients and health professionals about the weight loss surgery experience was that the delivery of this procedure required input from a multidisciplinary team which essentially existed across two services that are organised within a tiered NHS weight management system as illustrated below in figure 5. In the tier 3 service, health professionals provide support to people to lose 5% of their weight before they go forward to having weight loss surgery, and in the tier 4 service, the primary aim is the delivery of weight loss surgery and the post-surgery element of the patient's care. Within the thesis, I may occasionally refer to tier 3 and tier 4 to describe the preoperative and postoperative stages.

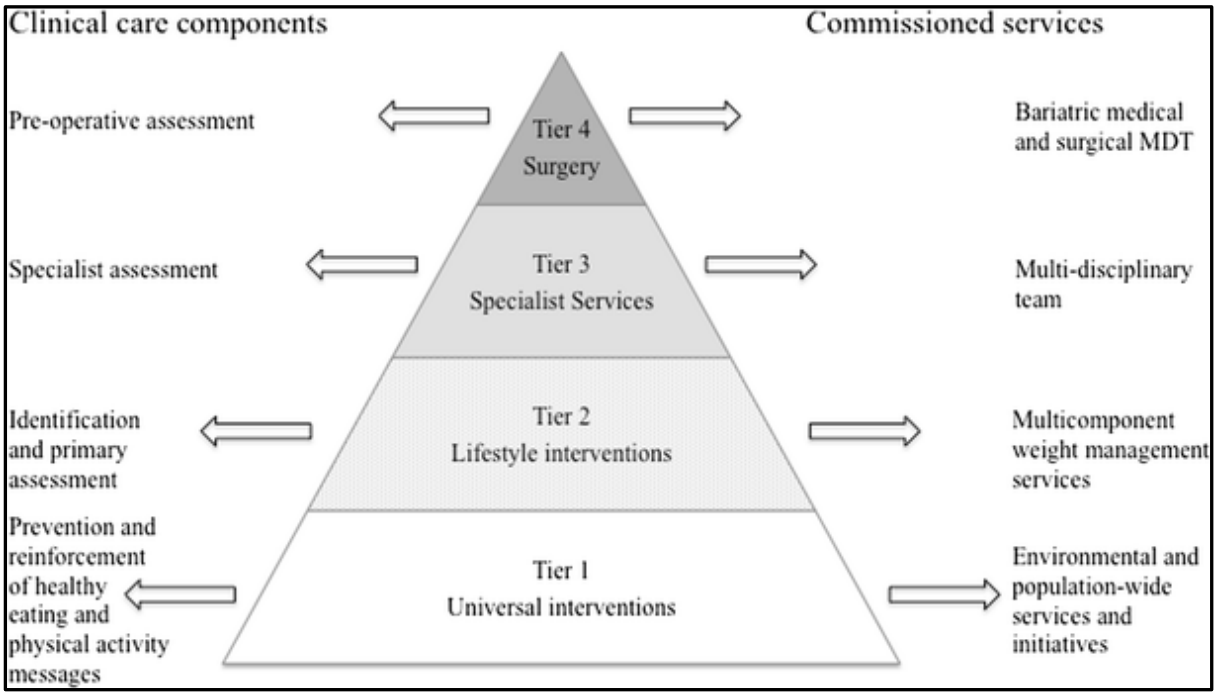

Figure 5 The tier structure of weight management in the English NHS (Welbourn et al, 2016) - used with permission from the author and copyright holder

The pathway I have drawn up is a reflection of this multifaceted patient journey from the point of an individual's contemplation of having weight loss surgery through to post-surgery follow up discharge. This is based on information from all the participants' transcripts to help those outside of this working environment to better understand the general stages involved in the

delivery and management of weight loss surgery within the NHS. It also illustrates the various health professionals that a typical patient will encounter before and after having weight loss surgery whilst in this particular service. Moreover, in light of the research questions, the patient pathway in figure 6 will hopefully help readers contextualize issues raised in some of the themes identified along the weight loss surgery timeline, or where comparisons are made between the pre-surgery and post-surgery phases.

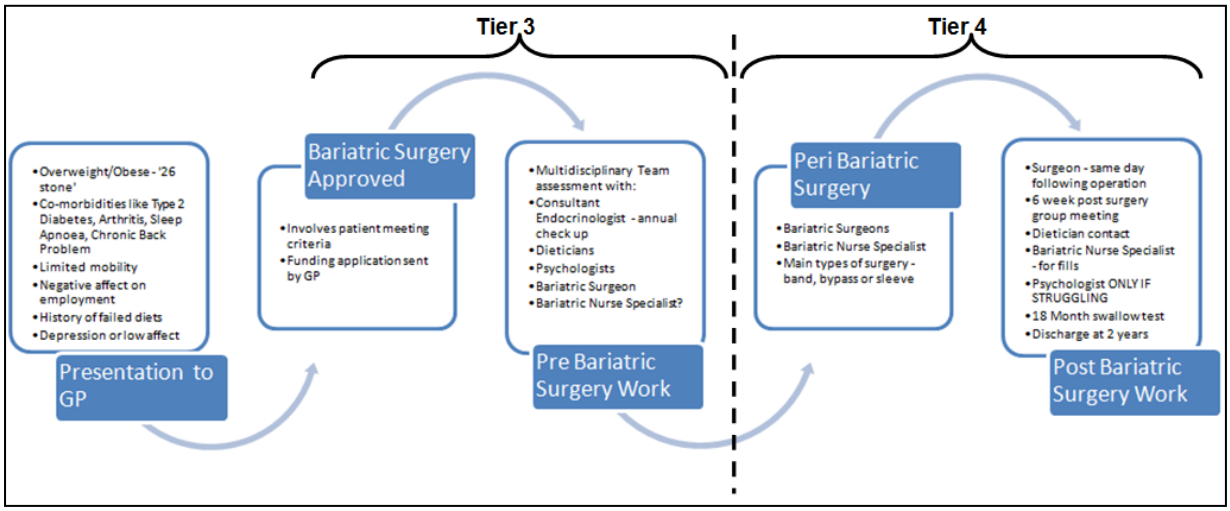

Figure 6 Weight loss surgery patient journey based on study participants' narratives

For ease of distinction between the two cohorts I will refer to the individuals with lived experience of having weight loss surgery as patients. However, it is worth noting that this may not be the best description for this cohort, as over half of these individuals had been officially discharged from the service and those who were still officially under follow up care within the service did not see a health professional on a regular basis.

Before presenting the themes, it is also worth pointing out my position as a researcher during the conduct of this research, especially how I made sense of the interview transcripts. I started this process as someone naive to the clinical aspect of bariatric surgery. Saying this, I had extensive experience of conducting research interviews with a range of patient groups within other clinical areas of health research. As such I was comfortable in the hospital environment and felt able to empathise with participants' situations and the circumstances that had brought them to this point. I felt people opened up to me easily during the interviews. This feeling was reinforced by a few patients explicitly saying I was 'easy to talk to' and 'good at listening' to their life accounts. Respecting the fact that the transcripts contained willingly shared life accounts of my participants, during the process of interpretation I approached these

transcripts as participants' 'truth' and iteratively pulling together concepts that were commonly shared across multiple transcripts.

Identified Themes

Based on individual narratives from patients when exploring their experiences of life after having weight loss surgery, health professionals' viewpoints on the impact of this surgical intervention for obesity, and the meanings attached to rhetoric from both cohorts, thematic analysis elicited a key finding around 'postsurgical cliffs in patient care' within a heavily structured service. This finding permeated through three main themes; (1) navigating health changes (2) contrasting perspectives and (3) perceived prejudice. These are set out in the final thematic map (figure 7), where each theme is outlined with its associated illustrative subthemes. As a general format, each main theme is defined, followed by descriptions of its associated subthemes, with a detailed analysis and illustrative examples of how and why each subtheme is associated with the main theme. Interconnections between subthemes are also highlighted where relevant. Throughout the analysis, areas where postsurgical cliffs in patient care feature in accounts are highlighted. For example, the theme about 'navigating health changes' is broken down into the chronological phases of the weight loss surgery journey in order to emphasis and highlight the point at which participants report experiencing the 'cliff' in patient care. To further illustrate the themes, quotes from participants' transcripts have been used along with appropriate pseudonyms for the patient cohort. As previously mentioned, codes instead of pseudonyms in the format of *HP#* have been used for health professionals' quotes for increased anonymity.

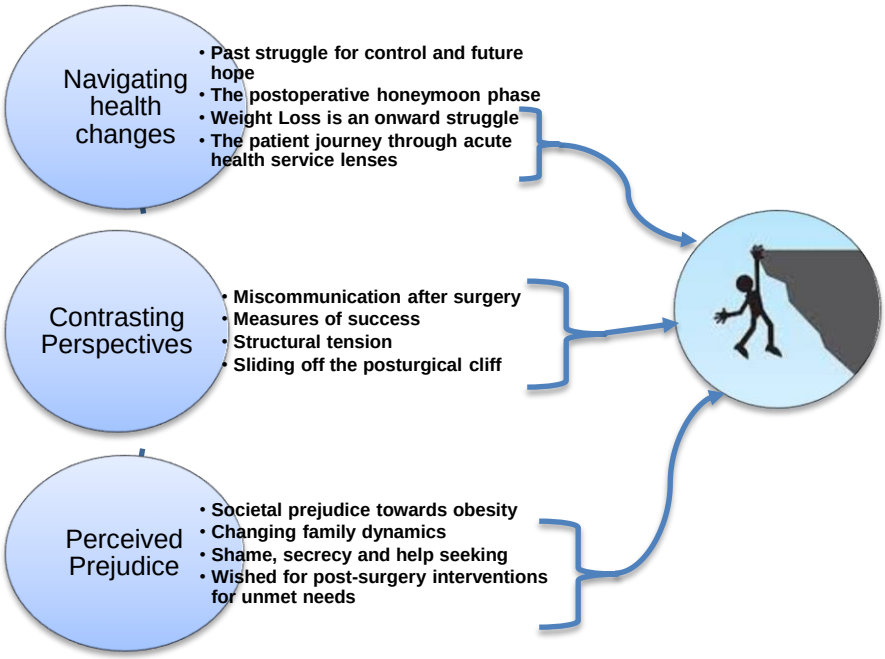

Figure 7 Final Thematic Map

Navigating health changes

This theme is about the experience of health changes patients went through along the weight loss surgery journey, from before having the procedure to the postoperative phase. In this sense when discussing health changes, patients looked back on their health state before surgery and compared this with their current state as well as future expectations. Pre-surgical health had a big influence on individuals' decision to have weight loss surgery. Importantly, this theme also highlights the influence of timeframe, where patients saw the actual procedure in the context of their complete weight loss journey. Lastly this theme reflects on how health professionals attempted to support patients as they went through these health changes within an acute service structure, and the challenge of condensing patients' lifelong perspective of their weight loss journey so that it fits in with service delivery time lines.

Past struggle for control and future hope

Narratives showed that from the patient perspective, having weight loss surgery was a long process that required a lot of contemplation, decision making and big life changing steps to help treat their long standing chronic condition. It therefore extended beyond the specific delivery period, starting before they even decided to have the procedure.

'I'd be disappointed if I have to have it removed I think because it took me so long to actually get it. I had to apply for the funding, and then it was nearly a year before I actually had it so it was like is it ever gonna happen. I mean I don't not honour the National Health Service.

They gave that operation where people pay thousands for it which you know, I am very grateful of.' (Hazel)

'Quite a long process. Yeah but I think that gives you the time to think if it's the right thing for you. I don't think it's a bad thing.' (May)

As a result, the way in which these patients perceived health outcomes changed over time as they moved through from preoperative to postoperative stages, but also within the postoperative phase. Their account also tended to link identified health outcomes directly to implications within their life journey. For instance, they all naturally looked back upon their previous struggle to lose weight before having their surgery and how the procedure was like a second chance at life. It seems this constant reflecting to the past helped them to see a light at the end of the tunnel when assessing weight loss surgery expectations and outcomes. Therefore, reflections of the past influenced current and future health expectations.

'It's been life changing without a doubt. It's given me a second chance at life. Before having bypass, I used to be so miserable. Well, I was so large.' (Pauline)

Many described themselves as always being overweight or severely overweight since childhood or early adulthood prior to having weight loss surgery. This was despite trying many different avenues such as diets and joining groups like Weightwatchers to lose weight. This provides insight into the lifelong struggle to manage weight in this patient group and therefore supports evidence of the chronic nature of obesity as a condition.

'So I've been overweight most of my life. So from various categories, from being overweight to severely overweight really from middle childhood' (Frank)

Four patients explicitly reported being 26 stone or more at their heaviest before having weight loss surgery. This excess weight brought along several common co-morbidities like diabetes, sleep apnoea and hypertension as well as increasingly limited mobility which in some cases affected the individuals' ability to work and participate in everyday activities. The severity of these co-morbidities was at times serious, as illustrated in the quotes below.

'He diagnosed me with severe sleep apnoea which was caused by the fact that I was so overweight and the fat that had built up around my neck practically suffocated me' (June)

'I've got 2 crumbling discs which I've had for 30 odd years that absolutely kills and I thought the only way to help it actually is to lose weight' (Anna)

Patients also reported that the excess weight also brought limitations to social aspects of their life. For example, the excess weight significantly limited most of the patient interviewees' mobility, and this not only affected their ability to perform daily tasks but it also made them avoid socialising with family and friends.

'I had a good circle of friends but I tended not to go if they said let's go shopping because I couldn't walk for too long and I could never find things that could fit me. So I'd just be despondent.' (Sarah)

Aside from the physical effects of being overweight or obese, many patients reported a lot of negative emotions before having weight loss surgery, that were strongly connected to frustrations of being overweight and the negative functional repercussions. It seems that in most cases people had reached the point where they felt a sense of helplessness before they considered weight loss surgery. A few patients said they felt they would die if they did not do anything serious about losing weight.

'I was like just so sad and had quite suicidal kind of feelings. Just getting bigger, more ill and psychologically I think I've been through leaps and bounds a lot in the past' (Fran)

The above shows that at the start of the weight loss surgery journey, patients commonly reported a state of hopelessness, and they had reached a point where having this surgical intervention was seen as a last resort to help bring control to their weight and eating. The subsequent ultimate hope was to regain better health.

The postoperative honeymoon phase

Moving along the weight loss surgery journey to the postoperative phase there was a big change in health state reported by patients, which generally seemed to be triggered by weight loss, typically within six months to one year after surgery. Many reported drastic weight loss of up to 7 stone within the first year following their procedure, which was fundamental in increasing mobility and enabling more physical activity.

'The first year was great. I lost about 4 stone and obviously that helped me a lot' (Hazel)

Many patients also reported not feeling hungry or being uninterested or not controlled by food anymore after having weight loss surgery. This was a significant change considering most of the patient interviewees identified food as having been a big part of their life. For example, Sarah described herself as being 'obsessed with food' before weight loss surgery. The general physical restriction to the amount of food people could take in following the procedure certainly contributed to the weight loss.

'I am not controlled by food anymore. Sometimes I am not even interested in food. I can't believe I am saying that really because food used to be my life' (Sarah)

Alongside the short term positive perceived physical health changes, the patient cohort also reported short term emotional benefits. Firstly, they all said they were generally in a better place emotionally following weight loss surgery. They seemed to attribute their feelings of increased confidence and positive outlook post-surgery to their perceived better physical appearance following weight loss. Specifically, a large majority of the patient group strongly linked weight loss or being thinner to increased beauty. This is in line with the strong and contemporary socially constructed idea in the western society where being thinner is more attributed to beauty at times regardless of health state (Kwan, 2009; Bonafini & Pozzilli, 2013). There was a sense in which this group conformed to that ideal.

'I mean I've always been a very positive person. Very sort of happy bubbly person but I think if you look better, you feel better' (Anna)

Conforming to this ideal is rather understandable considering the amount of disapproving remarks towards their former heavier appearance from the public that this group reported. Perhaps the stronger notion here is that these participants seemed to be searching for greater

self-esteem from their new appearance because they felt it matched other people's idea of what they should look like.

'I brought my son out of play school and I'd get called a fat cow, you know, you fat bitch, just by people walking by' (Anna)

When sharing their experiences of the weight loss surgery journey, the health benefits in the first year follow up period reported by this patient cohort were very focused on weight and physical appearance. However, as they moved further on into the post-surgery phase beyond the one year follow up mark, they began to report other significant health benefits to having the procedure. For example, things like a reduction or absence of the pre-existing obesity related co-morbidities that they had before their surgery, increased physical mobility as well as more social interaction. At this stage, there was a general sense that patients had much better health and quality of life following weight loss surgery compared to their life before having the procedure.

'I had high blood pressure when I was at my heaviest and although I'm still taking blood pressure tablets the dose has just come right down now' (Sarah)

'I no longer have sleep apnoea. I don't use the sleep ap machine anymore. I don't need it anymore' (Frank)

'The weight loss is brilliant. Really good and I am much more active, much better, much more mobile and just having a great time taking on new activities, new hobbies and just much much much improved quality of life' (Frank)

Weight loss is an onward struggle

On the other hand, when patients also looked back on their longer term post-surgery experience in the context of health changes, there was a unanimous sense of struggle that they seemed to go through as their journey continued, where they felt it became more difficult to lose and maintain weight especially when they compared it to the first few months post-surgery where the weight just 'dropped off' their bodies.

'the first year was really very good and very straight forward but last year has been a bit of an ordeal' (Frank)

'The first year was great. I lost about 4 stone and obviously that helped me a lot. It helped with the joints and things like that but I haven't lost much else since the first year because of

this problem I've got now. So I've sort of tried to keep stable if you know what I mean. Keeping stable with the weight. Trying to keep it a bit level (Hazel)

Those who had had the procedure a longer time ago described the weight loss process as 'a big learning curve' because there were many things the body had to adjust to.

'It was a big learning curve I think. You know, trying to push the band a little bit because I think could I eat that? Could I get away with that? Then you think 'oh no, that's too painful', I will never do that again. But you do. It does take a year or 18 months to actually get used to what your body can take and what it won't.' (June)

Moreover, weight loss surgery came with some side effects, despite being and feeling healthier. For example, seven people specifically reported there were certain foods they were no longer able to eat because the food would get stuck somewhere in the gastrointestinal area or cause bad indigestion which resulted in pain. It would seem the procedure reportedly resulted in some permanent limits to food choices. Generally, these limitations enforced adjustment towards eating healthier foods through physical negative reactions like pain, indigestion and vomiting.

'Like I can't eat anything doughy, bread, anything like that. All the things I shouldn't eat I can't because it gets stuck and it's really painful' (June)

'For a long time there were a lot of things that I found I couldn't eat after the surgery and there are things now that I still can't eat. You know, my stomach just doesn't like them anymore. It's silly things like sausages' (Harriet)

However, these adjustments were not always positive. As illustrated in the quotes below, there were a few instances where the procedure also restricted eating healthy foods.

'If I want it I'll have it but occasionally I do get a bit of indigestion which is probably because I'm eating things I shouldn't be eating. An apple is mainly what it is. I think an apple is maybe too acidic and it just upsets my stomach which is a shame because I used to like an apple' (Gail)

'I have had a problem with the band so I'm virtually living on liquids which is not ideal at all. So I can't eat things like vegetables and fruit cause it will just get blocked up and then I

spend 20 minutes after that with my head down the toilet which is no fun at all but the weight loss is brilliant' (Frank)

Moreover, like Frank, two other people (Pauline and Hazel) reported experiencing problems keeping any food down and living on liquid diets as a result. With Hazel specifically, it was due to a blockage of the oesophagus, which meant she was unable to eat normal food. All three individuals recognised that these problems had affected their ability to eat normal food or follow their healthy eating plans. For them, this meant that two years after having weight loss surgery they still had not achieved healthy eating habits as intended. However, interestingly for both patients, their reported concerns about potential maladaptive eating behaviour and not being able to eat properly were somehow overshadowed by fear over having their band removed and the potential consequences of the removal. In this sense, they were subconsciously viewing weight loss surgery as the catalyst for adopting good eating habits rather than their own personal behavioural change. At this point a postsurgical cliff in patient care was noted because despite patients reporting these problems to me, their health professionals remained unaware and therefore unable to help their patients with these issues.

'I am concerned that if they take the band out, what will happen then. I haven't been eating well or good things lately. That's the issue. I haven't ended with the good eating habits' (Frank)

Despite the gastrointestinal problems, they were adamant that having weight loss surgery was still a good thing and that the post-surgery problems were just unfortunate.

'things are very difficult but I have talked to my wife about this and basically if I had to eat like this for the rest of my life or put weight back on, I would still do this. It's made that big of a difference to me. I would do it again despite having all these problems and they're not insignificant' (Frank)

'I am happy. Obviously this problem I have got with my oesophagus is just one of those things. It's happened and it is unfortunate but that's just the way it is.' (Hazel)

A particularly strong topic that came out from the patient interview data when discussing long term physical health changes along the weight loss surgery journey was excess skin, which came as a result of the drastic weight loss. This issue was reported by all patients and some health professionals also acknowledged it as a major concern for patients following surgery.

Specifically, many of the long-term patients expressed feeling horrible and ashamed by the appearance of the loose skin. The reported strong feelings of negative self-concept also seemed to result in frustrations reported by five people.

'If you take 7 stone out of someone there's gonna be droopy bits even if there weren't droopy bits before. They're even bigger the droopy bits now so I definitely need to do something about that now cause it's not making me feel nice at all' (Gail)

This negative self-concept subliminally appeared to border on regret over having had weight loss surgery in the first place as illustrated by Fran below. This is because the excess skin made them feel so unattractive that it was almost like they were back at the start of their weight loss surgery journey.

'I know they're saying to me you've lost loads of weight but if you lose more what's the point? You've got all this loose skin and you're kind of feeling rubbish about that. It's going to affect things' (Fran)

Several people also mentioned that the excess skin was affecting their spousal relationships.

'The excess skin bothers me and it probably bothers my husband but it bothers me which then bothers us. I know I don't like it and it makes me feel unattractive' (Gail)

Even patients who said loose skin was not yet a problem for them expressed looming fears of the excess skin and were actively making efforts to avoid this from happening to them. For example, excess skin was a big motivator for exercising and regularly going to the gym for one person as they felt increasing their muscle tone would minimise the extent of loose skin.

'Negative is what I definitely tried to avoid and that's saggy skin. So, that's the reason, one of the reasons for going to the gym. Obviously to burn fat and speed up my metabolism but the other is to tone up as I lose weight. At the moment I'm doing okay. I haven't got anything hanging' (June)

In addition, those affected by the issue of excess skin voiced frustrations over the fact that funding for weight loss surgery did not come with plastic surgery as a combined package. There was a sense in which dissatisfaction expressed in this group around this issue were

linked to frustrations from previous experiences of perpetual cycles of temporary or incomplete solutions to weight management.

'The only thing I don't understand about weight loss surgery in this country is why the skin removal isn't a part of the package. I know they do that in other countries and I know they're saying to me you've lost loads of weight but if you lose more what's the point?' (Fran)

This is where another postsurgical cliff in patient care was evident. This issue of excess skin is important because it has been caused by an intervention that was supposed to be a solution for tackling one appearance related issue, namely feeling unattractive because of being overweight. Unfortunately, in the process of solving the issue of obesity, this intervention ironically led to another appearance related problem caused by drastic weight loss. Moreover, all the long-term patients who reported seeking funding for plastic surgery to remove the excess skin had been unsuccessful in acquiring this funding which was another big blow. Psychologically, particularly for this group, this experience led to a vicious cycle of negative emotions in those affected where a weight related problem had been replaced by another. This cycle may potentially further reinforce or amplify levels of distress in certain individuals as it mimics previously reported cycles of failure to lose weight, where initial success in weight loss was subsequently followed by disappointment when the weight is regained.

Alongside longer term adjustments to the physical health changes that patients had to go through following weight loss surgery, patients also talked about the emotional process of coping with all the physical changes.

'initially I lost loads of weight and as I say because it happened so fast I don't know but the visual perception and the brain's vision of the self was really odd. Because I knew I was losing weight but when you look in the mirror you still see that fat person even when you're not and it takes time. I used to walk past and think "Who the heck is that walking past with me" and not realise it was me because I was so used to seeing someone twice the size and as I say that that's something maybe that people pre surgery ought to be more aware of because it does take time' (Harriet)

There was, predictably, greater insight from patients who were further into the postoperative phase in the way they recounted their post-surgery experience. For example, when Harriet talked about her life after the surgery, she touched on a wider range of elements aside from

weight loss and physical changes, including the impact the procedure on what she could eat and the psychological experience of the journey.

'It's very odd the way, you know I've talked to people who had it post-surgery and the differences. Silly things you know where your stomach just will not deal with at all. There are things that I know I really like but if I eat more than a dessert spoon I know I'll have a seriously negative after effect. The wonderful as they call it 'dumping syndrome' or whatever but it works fine. It takes a long time I think, and I don't think you find this out beforehand I don't think. It takes a long time for your head to catch up with your actual body. Because for a long time I have walked past the mirror for example and I'd still see the old me.' (Harriett)

Similarly, when Fran described her experience of the postoperative phase, she also focused on the psychological impact of the physical changes and how in retrospect she was in a precarious state despite achieving weight loss. For both participants, the unusually fast rate at which their weight was loss occurred seemed to be a factor for feelings of psychological uncertainty and instability.

'The first year after my surgery I think I was feeling quite uhmm I was very confused even though I was losing weight and I was changing I kind of felt, literally felt like it wasn't me. You know as you'd expect it was quite a lot psychologically and I still felt like I was that bigger person. I would be going down the road and I was almost expecting to still be treated that way...bigger. My head was weird, I can't really explain it to you but apparently it is quite common actually, quite a common thing that your brain doesn't cope or catch up with the change. So looking back I was quite wobbly' (Fran)

Many described instances where they felt a strong sense of dissociation or detachment from their body as it changed following the drastic weight loss. Because of the brain adapting to the drastic procedure, it seems people were switching off from reality as a defence mechanism to help them cope with the physical changes their body was going through after the procedure. However, an even stronger feeling from patients regarding emotional adjustment was the gap in support from the weight loss surgery team that they felt during this time when their brain was trying to visually catch up with one's smaller physical appearance.

'I feel like I have done it on my own … you do feel like they don't equip you enough really' (Sarah)

Overall, the longer participants progressed into the postoperative phase, the more they relayed holistic experiential narratives that incorporated biopsychosocial elements. These findings emulate the weight loss surgery trajectory in the systematic review by Jumbe et al (2016). It also mirrors findings from qualitative studies in the literature review (Warholm et al, 2014; Faccio et al; 2016) that illustrated the complexity of psychological processes faced by individuals once they have received the surgical intervention such as acceptance of a non-obese identity after weight loss and improvements in comorbidities, warranting post-surgical psychological support.

The patient journey through acute health service lenses

All interviewed health professionals took the view that weight loss surgery was generally a good procedure. Many described experiences were certain patients had done remarkably well with the procedure, stating the health benefits of weight loss, reduction in co-morbidities and increased physical mobility as previously acknowledged by patients themselves.

'I think there's lives that have been transformed by losing the weight and I think it has been proven to be very effective' (HP1)

'Certainly there are patients that have done remarkably well with weight loss surgery. Their diabetes has gone away and you see them completely transformed' (HP8)

Several individuals within the multidisciplinary team noted that weight loss was the initial focus for patients despite reporting that not all the health benefits of the weight loss surgery process were necessarily due to weight loss. This viewpoint was more consistently expressed by the dieticians and psychologists, who assessed more behavioural elements of this patient group both before and after surgery. They felt that the weight loss surgery journey also helped patients to gain a better understanding of themselves which in turn influenced better lifestyle choices.

'There's the all-encompassing important weights for people. For patients, that often is the most important thing, initially at least. But it's not just that' (HP5)

Like the patient interview data, the health professionals also recognised the issue of excess skin and the negative consequences this issue had on people's self-perception.

'there is also people getting loose skin, the issue of excess loose skin after surgery that can have negative effects on their self-perception' (HP4)

'I suppose one thing they do often talk about is that isn't a positive is the excess skin and the impact of how that has been for them and a lot of people find that very horrible, and shameful.' (HP5)

They also recognised that the many physical changes to the body that patients' experienced following the procedure required mental adjustment which was psychologically challenging.

'It's all well and good saying fantastic, you've lost 70% of your excess body weight but they're psychologically in a really difficult place' (HP1)

'Long term it is really good for people but I think it's important that those changes are made before, the change in the mind' (HP3)

However, in contrast to the patient interview data, health professionals tended to view patients' health changes in light of the procedure, associated medical risks or prevention. That is, their overall viewpoint towards health changes and outcomes was more contextualised within the service. This was especially true for the surgeons and bariatric practitioner who worked specifically on the delivery of weight loss surgery. This approach caused a postsurgical cliff in patient care. For instance, from the quote below prioritising the first 6 months of the postoperative period meant it potentially neglected patients during periods of weight loss struggle and excess skin highlighted in the previous subtheme.

'Where I think the importance lies is, there is the acute bit in hospital. Where I feel is most important is actually maybe that first initial period, the 6 month follow up appointments' (HP6)

When reflecting upon the issue of adjustment after surgery, several staff reported that the group work and one to one therapy sessions delivered prior to surgery hopefully gave patients enough self-management skills to buffer and facilitate the process of mental and emotional adjustment from the physical changes following weight loss surgery. The point of refocusing on pre-surgery screening as a way to overcompensate on the service's inability to minimise risk and relapse through post-surgery work was particularly strong amongst those working in

pre-surgery roles. This point was reiterated as staff described many rules and procedures in place during the pre-surgery phase that were used as pre-emptive attempts to minimise 'risky' people that were perceived as having the potential to relapse if they progressed on to having the procedure. The result of this viewpoint was that patients had to put in place the key behavioural adjustments that the procedure dictated by the time they had their weight loss surgery. This negated consideration for postoperative weight regain as the expectation was patients would subsequently cope with the consequences of postoperative changes independently. The result again is a postoperative cliff for patients who struggle.

'Helping people to self-manage their condition in the long-term through groups because of the power of groups is quite an efficient way of running things' (HP1)

One dietician reported that weight loss surgery opened more social circles and opportunities for people, because they became more confident and happier in themselves. However, this was mostly based on progress seen within that short pre-surgery phase as she did not see many of the patients during the two year follow up period. There were several instances were other health professionals reported that some patients tended to get lost over the follow up period. Dieticians reported raising alerts for people who did not attend follow up appointments. However, it was not clear how this was done considering the general follow up process was based on patients contacting the service. This raises the question of the multidisciplinary team's awareness of the real life impact the procedure had on patients' social life considering they do not closely monitor everyone who had the procedure, let alone follow people up beyond the time in the weight loss surgery service.

'It opens up more social circles, better opportunities, just more confident and happier in themselves but all of that isn't necessarily just down to the weight. I think it's having a better understanding of themselves' (HP7)

Like the patients, health professionals described the process of having weight loss surgery as a complete life transforming occurrence. However, despite the significant physical and social health benefits highlighted by these health professionals, there was also a strong sentiment amongst the group that weight loss surgery was only good for those who were ready for it. For example, there were several instances where a health professional stated the provision of weight loss surgery needed to be done carefully to ensure that only 'the right patient' had the procedure. Tied into this sentiment was the idea that the patient had to embark on the weight loss surgery journey at the 'right time' to reap the benefits of both the pre-surgery support and

the actual procedure. From this viewpoint, it was clear that they felt the procedure was not for everyone and that not all individuals who went through the service came out with a success story. However, more importantly these statements implied that when weight loss surgery did not work, health professionals rationalised the predicament by focusing on the unsuitability of the patient or their lack of readiness as opposed to the possibility that perhaps the procedure was not the best intervention for them. This illustrates competing priorities within the service, where the health professionals are forced to focus on fitting to the timeframe of the procedure which limits focus on impact of weight loss surgery in the wider context of the patient's weight management journey, across their lifetime. This limited their ability to work on the postsurgical cliffs in patient care highlighted in this study.

'I think for the right patient it's good. There are some patients though where it is not appropriate' (HP7)

'Sometimes people just enrol at the wrong time. We've had people who are in the process, so having contact with the dietician and psychology and it's not been right. Then they'll come back in and pick up everything the second time round cause actually they are in the right space and things start to fall in the right place' (HP7)

To conclude, in line with the first aim of this study, both patients and health professionals' interviews show that people experience many benefits from having weight loss surgery, most especially their main desire to lose weight. However, the interviews also reveal that over time, as patients' postoperative period extends, perceptions of their health change towards a more holistic view. Specifically, in the longer term postoperative phase, patients start to experience a range of physical and emotional changes that are triggered by drastic weight loss which health professionals are generally privy to but do not actively support during the post-surgery phase. Reflecting on this insight, the current minimal postoperative support provided, coupled with patients' increasing behaviour adjustment needs after surgery, results in postsurgical cliffs in patient care which caused some patient distress and unaddressed needs. Moreover, the delivery focused approach from the health professionals' means there is a gap in knowledge concerning what happens to patients who go through the service, have weight loss surgery but fail to lose weight and do not subsequently come back to the service for help during and beyond the two year follow up period. The increase in revisional surgeries reported by a few of the interviewed health professionals might be a consequence of this forgotten group of patients.

'Bariatric surgery (you might have heard this sentence a couple of times now) is not a magic wand and if you refer to patient-centred care and personalisation and patients making decisions over their care, this is why it is important to have some ownership from a healthcare professional point of view because we have individuals that fail following bariatric surgery, and we have patients that regain weight following bariatric surgery' (HP6)

'It would be good to see actually whether 2 years could be enough. Again, we are seeing a lot of people who had bands at the beginning and years down the line they started struggling and want some revisional surgery. So the 2 years before, as long as it's had some good support structure in place should be enough initially but you need to have the ability for someone to come back if they need the support later because over time the weight does creep back on and old habits come back' (HP5)

In context of the first theme about navigating health changes along the weight loss surgery journey, examples given within the four subthemes highlight this notion of 'changes' for patients within the context of a lifetime experience which extends beyond their time in the weight loss surgery service. This clashes with the health professionals' perspective, which tends to focus on health changes in the context of the time patients spend within the weight loss surgery service. This acute focus presents a potential point for a postsurgical cliff for patients that struggle to manage these health changes once discharged from the service. The above also shows that patients' experiences of life after weight loss surgery are very complex right from the first day of having the procedure. The procedure can elicit unexpected problems that are unique to each individual.

Contrasting Perspectives

Overall, it was evident from the patient interviews that having weight loss surgery was a dramatically life changing experience. There was a very strong sense of gratitude expressed by patient interviewees at being given the opportunity to have the procedure on the NHS, as having the procedure privately is a big expense.

'It's changed my life completely. I have never been happier than I am now' (Sarah)

'It's been very positive like a new lease of life. All the people who've known me for years, old friends sometimes they don't even recognise me now. It is that drastic' (Fran)

However, it was also evident that for this patient group, individuals' expectations of what having weight loss surgery within the NHS would be like was different to their actual experience of having the procedure in this service. This brings us to the second theme which is about the contrasting views towards various aspects of the weight loss surgery experience between patients and health professionals and how these contrasting perspectives directly led to the formation of a postsurgical cliff or somehow amplified the presence of a postsurgical cliff. These contrasts were notable at several points along the weight loss surgery journey although predominantly in the postoperative phase. Firstly, there was some disconnect between what patients were expecting to happen and what health professionals provided or thought their patients needed. Contrasting perspectives were also prominent in the way the two cohorts defined success following weight loss surgery. Finally, the divide in perspective was to some extent exacerbated by the highly-structured nature of the service which struggled when using a blanket approach to accommodate every patient's unique needs. These instances are elaborated upon further below in the specific subthemes.

Miscommunication after surgery

A core issue that came out within this theme of contrasting perspectives was that of miscommunication following surgery. For example, both health professionals and patients reported that following weight loss surgery the aftercare support was reliant on the patient contacting the service to set up appointments or seek help. However, even though there was consensus from both parties around this concept, there were different assumptions about this message between the two groups. As highlighted in the quote below, health professionals assumed that all who were indeed having problems with their band or sleeve would contact the service as advised.

'*We kind of also have an open door policy where we are able to be contacted at any time during post op by patients if they are concerned or worried about anything. Our communication channels are very good. Patients can refer back into our service if there's things that they are worried about*' (*HP4)*

As a result, if they did not hear from a patient they assumed this meant that the patient was okay. In this case health professionals generally felt that their communication with patients following weight loss surgery was good.

'Most people are happy with the post-operative route. A lot more often people will say "I don't want to be seen anymore"' (HP4)

However, this assumption is not borne out in reported reactions from this group of patients. Unfortunately, narratives from patient interviewees had a negative outlook towards this hands-off approach to communication from the service.

'I kind of felt like you had the band and then they basically pushed you out of the door and said get on with it' (Sarah)

'I thought someone would have contacted me about some sort of follow up appointment and they said 'oh no. We sort of leave it to you. If you've got any problems you come to us otherwise we leave you to it. Which again I though hmmm' (June)

This relaxed communication approach from the service also led to some reported instances where people did not contact the service and seek help when they should have, illustrating a postsurgical cliff.

'I was hoping I would be a lot further than I am now. And I think quite possibly if there was more aftercare available, I think I would not have got to this stage now where I can't even eat or drink' (Hazel)

'Hmm there is the shortfall I would say in that the support you get afterwards is very little. Except for … I had had no communication except for having fills. There was no real advice. I had one meeting with the dietician. My doctors followed up with some blood tests, that sort of thing to make sure that I was getting all the nutrients that I should. Uhm but for the follow up of advice and that sort of thing I had to find out myself which I found a little bit disappointing. (May)

There was an interestingly sharp contrast in patients' perceptions of how the health professionals communicated between the pre-surgery and post-surgery period. Patients seemed happy with the level of communication from health professionals earlier on in their journey before they had the weight loss surgery. This was especially true when it came to the decision-making process about surgery.

'I was talking to the doctor and we both decided that I should go for weight loss surgery' (Hazel)

'It was my choice. If I remember rightly, they kind of said "well what do you think is right for you?" and I knew somebody that had had the sleeve years before and was doing wonderfully. I researched about it' (Fran)

This is despite several patients describing the process of deciding to have the procedure as big and complex, and being influenced by several key stages. These stages included sifting through different opinions from health professionals and relatives, and personal intuition. It seemed like even though these patients experienced a sense of information overload from the amount of information given, the shared decision making dynamic between the patients and health professionals made patients feel more in control of their choice of weight loss surgery procedure.

'It's quite difficult. You'll find people have loads of different opinions about it and my family weren't very comfortable with the sleeve for me but touch wood, it's been amazing for me so far' (Fran)

In particular, the perceived openness and honesty of the surgery team when explaining the risk factors and side effects of each procedure, as reported by patients, seems to have also contributed to patients' satisfaction of how they communicated. Patients also generally felt able to choose which procedure to have and that the surgeons only made choices on their behalf in cases where there was sudden or increased medical risk.

'I was actually wanting the gastric bypass but my surgeon told me all about the options that I had because she said if there wasn't the possibility of having the bypass, and they didn't discuss any of the other things with me, they wouldn't be able to do it' (Anna)

Interestingly, there was also a clear contrast in opinion amongst the health professionals regarding the issue of communication. As previously stated some health professionals felt the communication channels within the service were clear and good. However, this perception was specifically from those who worked in roles within the tier 4 service, which involved dealing with patients at specific acute points along the patient journey, i.e. surgeons and medics. Contrarily, health professionals' data from those who worked with patients in both the tier 3 and 4 services, which required more frequent contact over a longer period of time recognised that communication within the service was an ongoing issue, in particular when transitioning from before to after surgery.

'That gap between tier 3 and tier 4 I think communication between the two historically has been very poor' (HP6)

Those working in less acute roles predominantly psychologists and dieticians, also shed more light on the complexities of the decision-making process within the bariatric surgery service. There was a strong sense from this subgroup that it took a lot of consultation with patients to work out whether or not their failure to manage their weight was simply a behavioural issue or something a band could support. Taking this into consideration they felt that assessing weight loss alone in the post-surgery phase was not enough to truly understand an individual progress.

'On the surface of things it looks like they've done amazingly but actually now she can't eat food properly she's turned to alcohol and is saving all her calories for alcohol. So you have to look below the surface of weight loss results to really know and hear how somebody is really doing' (HP1)

In an attempt to resolve some of the complexities, dieticians and psychologists reportedly felt that the pre-surgery phase was a foundational step to building good patient practitioner relationships. They also saw this phase as very important in preparing the patient for the decision making process in relation to the post-surgery phase. They seemed to view this preparation phase as key to facilitating patients' motivation and empowerment, providing skills to make choices independently. To these health professionals the subsequent hope was that this empowerment would enable the patient to feel more confident about making independent decisions onwards onto the post-surgery phase and after being discharged from the service.

'It helps to know them preoperatively and the whole way through to build a good relationship with them' (HP1)

'It's not just telling people what to do… it's trying to motivate them and empower them to make choices' (HP1)

This whole idea about having all the behavioural work before the intervention and then leaving the patient to independently cope with the changes post-surgically felt counterproductive, considering the health professionals recognised that these physical and emotional adjustments could potentially put patients in a rather psychologically delicate place. This illustrates another postsurgical cliff that would be hard for patients who are particularly struggling to climb over.

'It can make an incredible difference but the person also has to be quite motivated because there are some people that… don't lose such a drastic amount of weight and they seem to be the people that don't lose the weight beforehand or haven't lost so much weight

beforehand. I don't know. I'm not saying for certain but our data seems to suggest that' (HP8)

In addition, the whole point of weight loss surgery is that it is provided to individuals who have not been able to lose weight by themselves in the first place, as the procedure forces weight loss through physical restriction. Taking this into consideration, it was interesting that the service expected people to suddenly be able to independently adhere to the behavioural adjustments like healthy eating and regular exercise required following the procedure without ongoing assistance. In a way, it seemed that perhaps some of the health professionals internally saw the procedure as the agent of change and themselves as purely providers of the weight loss intervention.

'There is less support after and I guess it's tricky. So do you put the money before to then make the change before and hopefully that is sustained and put less afterwards or do you do things the other way round? And I'm inclined to say before is better' (HP2)

However, it felt like for others with longer patient contact within the health professionals' cohort there was an undertone of frustration regarding this approach. The above clearly shows that the newly established structure with minimal aftercare clashed with these health professionals' stance and recognition for the general need of more aftercare support. It also caused a divide between certain roles in the multidisciplinary team. Particularly, those in the tier 3 service felt that at times when they stopped people from proceeding with weight loss surgery because they felt the individual would not cope with the physical and mental health changes afterwards, they were sometimes seen as slowing down numbers of patients progressing through to the surgical intervention by their tier 4 colleagues. This was challenging because to them, they felt they were acting in the individual's best interest.

'We would put a stopper sometimes because they're not ready … and I think that can be quite challenging and frustrating to certain members when they obviously want to operate on people. Obesity is a long term condition and if you view it as a surgical problem then it's not a long term condition and this limits the follow up in the long term' (HP5)

The disparity in viewpoints between specific roles regarding communication with patients along the weight loss surgery journey also understandably brought some underlying tensions within this multidisciplinary team. Overall the nature of communication in the pre-surgery phase which had a heavy focus on partnership between the health professional and patients

made the lack of communication at the post-operative stage starker. Perhaps if the communication approach used at the pre-surgery phase was similar or possibly mirrored up until a few weeks following surgery, patients would not experience such a postsurgical cliff soon after surgery. This cliff is illustrated by the perceived lack of staff communication and feelings of abandonment from the service during the post-surgery follow up period by patients. The minimal service led communication in the postoperative phase also potentially contributed to the general limited of knowledge around the nature of physical and psychosocial health changes (and outcomes) highlighted.

Disjointed communication especially from the point of surgery discharge appears to be a contributor to the (perceived) post-surgery cliff. This leads on to the next subtheme about current perceived measures of success and the effect this has on the gap between post-surgery patients' needs and service provision.

Measures of success

Another example of a contrasting perspective emerging from the interviews was around how progress was measured following weight loss surgery. As previously mentioned, there was a sense in which health professionals felt weight loss was the number one priority for patients, followed by assessment of co-morbidities and medication intake. This justified the focus on weight within the service as the main progress marker for success post-surgery for health professionals.

'For patients, that (weight) often is the most important thing, initially at least' (HP5)

'First and foremost weight... Physically, their other medical problems like diabetes and whether they are still required to take medications. Their functional ability where their mobility is concerned' (HP4)

In respect of post-surgery benefits, the health professionals in this service were generally very well informed and up to date on evidence based outcomes from sources like the UK National Bariatric Surgery Register (NBSR) and general empirical research around weight loss surgery. They reportedly used these forums to shape the work they delivered in their service. However, as previously illustrated these outcome measures were focused on biomedical aspects. There were no measures for assessing emotional wellbeing in the post-surgical phase. However, the

team that worked in the pre-surgery phase described a range of psychological assessments that they conducted with patients to measure emotional wellbeing prior to weight loss surgery as part of their risk and service assessment. Therefore, the tools to measure psychological wellbeing in the post-surgery phase were present in the service but not utilised. Within their interviews, almost all health professionals described an array of complex mental health problems within this patient group before and after weight loss surgery, as respectively illustrated in the quotes below.

'We always do quite a thorough psychological assessment (before surgery) in terms of mental health risk. Quite a lot of our patients do have mental health problems, a history of mental health problems. And really I guess in very practical terms where WLS is concerned, our biggest alarm bells are eating disorders and suicidal behaviours or excessive alcohol intake or drug use or kind of major depression' (HP3)

'The other thing to say is that this group, they have got so many comorbidities, some of them complex comorbidities. Some of them have caught mental health problems. They've got PTSD, we see a lot of depression and anxiety. We see a lot of abuse, many people with numerous abusive relationships. There's a lot of eating disorders, like binge eating. We see loads of alcohol misuse… And then we see people who don't go out' (HP2)

'So when people talk about some of the pre op screening tools some of the questions are about (cause post operatively people can suffer these symptoms) so we'll be asking questions about cutting or self-harming episodes because we find these behaviours increasing postoperatively. We see people developing alcohol problems postoperatively, obviously people using drugs, smoking going up. Sometimes people suddenly develop unhelpful or make unhelpful decisions about relationships' (HP5)

However, there was no formal or strategic assessment of mental health outcomes following weight loss surgery employed by the core post-surgery team, namely the surgeons, bariatric practitioner and dieticians. This was rather surprising as it meant they did not know what was happening to patients mentally in the follow up phase.

'We don't have any direct measures of emotional wellbeing post op. We don't strategically you know ask questions on that' (HP6)

Some health professionals involved in postoperative care acknowledged this shortfall, saying assessment of emotional wellbeing should become a priority because psychological disorder could potentially hinder or derail the benefits of the procedure. In a way, reasoning for the need of psychosocial outcomes at the post-surgery phase from these health professionals was in terms of psychological disorder potentially getting in the way of the procedure, and potentially causing problems in weight loss progress, or health. This infers a surgery focused approach as opposed to a direct focus on patients' emotional wellbeing.

Interestingly, data from most patients' narratives also echoed the notion of weight loss being the main precedence within the first year after having their surgery, influenced by the initial pleasure and surprise expressed around the ease of losing weight was.

'The first year was great. I lost about 4 stone and obviously that helped me a lot' (Hazel)

However, data also illustrates that in most cases being overweight was a small part of a bigger issue for patients. For example, when talking about reasons for being overweight, patient interviewees rarely mentioned overeating in isolation. Some attributed their weight gain as being a result of physical injury (back injury) which severely reduced their ability to be physically active. In cases where patients mentioned overeating it was linked to 'comfort' following experiences of pain or negative effect. Socially, many patients admittedly recounted avoiding many social occasions for fear of being looked at or spoken to in a negative way by 'normal' people. There was a strong sense from this patient group where it seemed like for them gaining control of their weight through weight loss surgery would help fix the other problems in their life i.e. look better, feel better and become better accepted socially. As shown in the quotes below, success in weight loss surgery was not was not just about weight loss or physical appearance but improving functional and social ability too.

'I was almost ashamed that I had to ask my 14 year old son to put socks on … and the first time I did that on the bed, I just literally sat there and cried. You know, it's little things like that … and it's just really good' (Anna)

'The weight loss is brilliant. Really good and I am much more active, much better, much more mobile and just having a great time taking on new activities, new hobbies and just much much much improved quality of life' (Frank)

'I'm finding I'm going out more with my friends. I'm very lucky that I've always had a very close friendship group. We've know each other since we were very little and I go out with them more now' (Fran)

In light of weight loss surgery success, in all these examples it was clear that the issue of obesity and successfully addressing the chronic condition was not just a physical or behavioural task for patients but one which required a change in mental attitude. It also reflects how tackling the condition through weight loss surgery affects all aspects of the individual's life. Therefore, using only biomedical measures to assess weight loss surgery outcomes seems reductionist because as outlined previously this approach leaves psychosocial aspects of obesity unaddressed. Another consequential problem that came out from this biomedical focus on success was that patients who did not reach their weight loss target or did not experience a reduction or absence in co-morbidities reported some disappointment, either towards their weight gain, their struggle to maintain their weight or from their persisting medical conditions despite some perceivably noteworthy weight loss.

'At the moment I'm having ups and downs with my diabetes so I'm a bit disappointed with that cause I was hoping; they couldn't promise it cause everyone is different, but they did say that it might go into remission if I lost weight. So the diabetes isn't as good as I was hoping for' (Sarah)

Therefore, the interview data revealed a need for widening scope of progress markers to include psychological and social factors to help people set more personalised expectations and look out for more realistic achievements and potentially dilute the focus on weight. There was also the sense that a joint patient and HP approach to success was preferred and perceived to be more beneficial by patients.

Overall these contrasting views of success measures between health professionals and patients are possibly a reflection of the rigid service structure which narrows focus on weight loss outcomes. This potentially influences the post-surgery cliff patients experience in the postoperative phase. Specifically, this points to the issue where, if weight loss is achieved, an assumption is made that the patient is doing well. As a result, other elements are not assessed and are therefore left unaddressed. Looking over both patient and health professional accounts, psychological disorder seems to be a common attribute amongst this patient group prior to undergoing weight loss surgery. This means that it could possibly feature after weight loss surgery too. Therefore, proposing routine assessments of both medical and psychosocial outcomes is paramount to informing satisfactory post-surgery patient aftercare. This leads to the next subtheme around structural tensions that widen the gap between patients' needs and service provision.

Structural Tension

As alluded to previously, another element of contrasting perspectives that emerged was around structural tensions which caused a subliminal divide between health professionals in the multidisciplinary team, as well as between health professional and patients.

Interview data from the health professionals' cohort described clearly defined roles with specific tasks that were aligned to one NHS service set up as a multidisciplinary team. For example the dieticians felt their role was to look at dietetic aspect of the patient which involved pre-surgery assessments of patients' dietary patterns and eating habits and post-surgery dietary planning, weight and nutritional monitoring follow up for up to 2 years. They also worked collaboratively with the psychology team before and after surgery, highlighting concerns and picking up any problems which needed referring to the psychologists.

The psychologists and physicians were mainly involved in pre-surgery assessment for six to twelve months alongside the dieticians. Physicians saw the main aspect of their work was to ensure that patients' medical conditions associated with their obesity were well managed to ensure they were suitable and safe for weight loss surgery. This involved screening of obesity related conditions like diabetes and blood pressure, as well as ensuring patients were on the right medications. Screening and assessments of these co-morbidities was done during the bi-annual pre-surgery clinic assessments in conjunction with notes and feedback from the psychologists and dieticians who saw patients more frequently. For the psychologists, there was a core focus on therapeutically assessing eating behaviours and disorders as well as screening for potential risk of weight loss surgery candidates. Therapeutic work with patients within the service was delivered in group settings alongside the dieticians as well as on a one-to-one basis; depending on patients' preference. This intense and frequent contact with patients in varied settings amplified the psychologists' perceived ability to screen adequately for safety and eligibility of patients to have surgery. It seemed like psychology input after surgery was only assigned to patients if things went wrong (medically or psychologically). Otherwise their presence at this stage was minimal or even none at all. The psychologists also did some indirect patient work within the MDT by supervising certain members of the team, and general psycho-education where they updated the team on psychological theory, particularly helping colleagues understand why people overeat and why they need weight loss surgery.

Contrarily, the surgeon and bariatric practitioner described their role as solely focused on the acute delivery of the surgical procedure plus medical (perioperative) screening and post-surgical outcome assessments. The outcome assessments over the follow up period were predominantly done by the bariatric practitioner alongside dieticians.

From the interview data, it became apparent that the delivery of weight loss surgery required input from a multidisciplinary team which essentially existed across two services. These two services, namely tier 3 and tier 4 were pulled together by a tiered NHS weight management system (see figure 5). In the tier 3 service, health professionals provided support to people to lose 5% of their weight before they went forward to having weight loss surgery, and in the tier 4 service, the primary aim was the surgical delivery element of the patient's care. This pulling together of the two services to form one multidisciplinary team is the first example of structural tensions. When reflecting, health professionals acknowledged that the service set up was difficult to understand and delineate in practice.

'The whole thing is difficult to separate pre and post because it all gets mixed in all in one go' (HP5)

Of all the professions interviewed, the dieticians did the most cross tier working. They were therefore seen as the most consistently involved with patients along the weight loss journey by themselves, patients and colleagues within the multidisciplinary team.

'I work as a bariatric dietician in the tier 4 weight management team. I do tier 3 work as well' (HP1)

The role of the psychologists as officially defined and as described in the quotes below was also supposed to be of a cross tier working nature.

'There's a well-defined pathway combining a range of outpatients assessments by a surgeon and dietician and a bariatric practitioner as well as a psychologist if needed for a period of up to 2 years after surgery' (HP4)

'I work assessing patients regarding their suitability for WLS and have done a lot of preoperative work up as a psychologist and also lots of work post operatively, offering therapy to people that are struggling' (HP5)

However, the interview data showed that in practice their input at the post-surgery phase was very inconsistent and minimal. In a sense, the psychology team felt that they were only

involved in the post-surgery process when a patient was struggling. This proved to be a frustrating working model as they felt they were only needed by the multidisciplinary team to pick up the pieces of failure.

'It can be 6 months down the line that they'll be struggling and then we'd be asked by the team for us to see them but we don't follow up after surgery' (HP2)

'So we come in to work on the negative stuff rather than the positive stuff because we often see people post weight loss surgery who have either not lost any weight at all and are still engaging in very unhelpful eating behaviours' (HP5)

In contrast, the other health professionals' input with patients seemed to be more siloed and concentrated at specific time points within the patient journey. For example, as shown in the extract below, input from the surgical team within the weight loss surgery journey was very acute, mainly involving delivery of the intervention, a review by the surgeon a few weeks or months post-surgery, and then follow up over the two years by the bariatric practitioner.

''Researcher – 'So what does the service user get from you as their surgeon … of the weight loss surgery team?'

HP4 – 'so they get the operation' ''

However, contact over the two years as reported by this patient group was very irregular. Moreover, it generally seemed the bariatric practitioner had more contact with banded patients than their counterparts in order to do their gastric band fills. A gastric band fill is when saline fluid is added to the gastric band to increase food restriction. However as reported by patients, this was typically done twice over the entire two year follow up period, so again very minimal.

'I only had my port flipped over so I could have an infill when I went for my first one. I had to wait for an x-ray to be run, they had to do the injection under x-ray condition so that she could manoeuvre the needle into the back of the port which had twisted round. It was dreadful, made me feel sick. In fact I think I've had 2 fills but they reckon that enough as the band is still working.' (June)

Similarly, the physicians did not seem to have much post-surgery input aside from occasional annual reviews, although this was again not a consistently reported pattern amongst this interviewed group of weight loss surgery patients. Therefore, like the psychology and surgical team, input from medics was concentrated in the pre-surgery and perioperative phase.

'They [dieticians and psychologists] have much more of a role than I do cause I only see them at uhm the start and at 6 months interval. So during the time of the intervention which for most people is group work, they [dieticians and psychologists] see them 8 times potentially over that period of time so they get to know them very well' (HP8)

'I don't do any work in the aftercare. I simply do the assessment clinic until they go on for surgery so I don't play any role at all in the aftercare stage.' (HP8)

Specifically, within the service's protocol, psychology input within pre-surgery clinic assessments was officially focused on screening weight loss surgery candidates for suitability and risk alongside the medics and dieticians. However, there was some underlying frustration amongst psychologists and dieticians to this approach, as it felt like they were trying to fit in therapy, behaviour change work and self-management skills on top of the screening assessments all within a six to twelve month timeframe with patients before their weight loss surgery. Many patients they saw were different, not just in their physical and mental medical history, but also in their mind-sets and attitudes towards weight loss surgery. This limited service structure brought challenges for these health professionals because they felt they were capable of giving so much more to their patients. However, an underfunded service and time restricted protocol did not allow for their obesity management work to be extended after weight loss surgery. This illustrated a contrast in approaches between the service structure and the health professionals that work in it, where the limited service structure effectively constrained certain health professionals from working to their desired full capabilities. This caused tensions amongst health professionals and resulted in a postsurgical cliff where some patient needs are unmet.

'What doesn't work is people having surgery who are never assessed properly and trying to kind of fix it all up afterwards' (HP2)

'It makes preparing patients for potential bariatric surgery harder because we're expecting them to make all the changes necessary with very little input' (HP1)

'The lack of funding has stopped us developing in the way we would like to develop from a psychological point of view' (HP5)

A second example of contrasting perspectives caused by structural tension focuses on the divide between health professionals and patients. It seemed like the siloed working approach of some of the health professionals with more acute input limited their ability to fully appreciate

the length of the weight loss surgery process from their patients' perspectives. For example, from this patient group's point of view the route to actually getting weight loss surgery was a long process. The typical length of time in which people spent in the pre-surgery work prior to getting onto the weight loss surgery list varied from anytime between six months to two years.

'*So for a year and a half talking to people in* [redacted] *and then I had to be referred to the people in* [redacted]*. Then that took another year after that so it was a really long process for me before I got in' (Gail)*

'*It took me 2 years, obviously coming back and forth to* [redacted]*' (Anna)*

Although the length of the process was initially frustrating for others, in hindsight people acknowledged the importance and benefits of the pre-surgery preparation. Patients reported feeling that the duration of the pre-surgery support was vital for their minds to mentally adjustment and mentally prepare for having the weight loss surgery and to gauge whether it was the right time for them to have the procedure. Therefore, patient interviewees highly appreciated the support they had received from the service before having weight loss surgery.

'*The 12 months I had to wait I think is the right amount of time because even though I would have liked to go ahead with it sooner it took me that long to get my head around what was going to happen if I'm honest' (June)*

'The members of staff, dieticians and all, they were absolutely brilliant. They've given me loads of support leading up to the surgery' (Anna)

However, moving on through the surgical journey to the post-surgery phase, there was a sense in which the process ended with the operation for most of the health professionals whereas for patients, their weight loss journey process was just starting, having just received their new surgical weight loss 'tool'. After having weight loss surgery, the lack of regular service led follow up appointments gave this patient group the impression that the service did not give adequate attention to aftercare support. Patients reported feelings of surprise in this regard, and resulted in a notable post-surgery gap in aftercare support from the patient perspective. This finding has already been illustrated in the previous example looking at contrasting perspectives within communication, but it is also pertinent in this section because this post-surgery cliff is caused by how the service structure is set up.

'I was quite surprised at the lack of support and my mum and dad said the same... Surely I should have been called back in to check that things had healed properly or something but yeah, as I say, not really much more post op unless I ask for it' (June)

There were several factors linked to the service structure that appeared to amplify this perceived postoperative cliff in healthcare following weight loss surgery. Firstly, regardless of surgical procedure, patients were typically treated as a day case in this cohort apart from two banded patients who stayed overnight and one patient who had a sleeve stayed in hospital for three days due to feeling unwell. Many patients recounted having strong feelings of abandonment during the initial months after surgery where they felt pushed out of the door soon after having the procedure and left on their own to get on with things. Following hospital discharge, this strong sense of abandonment in the postoperative phase led a majority of these participants to believe the service did not want to see them unless they were really suffering badly or having serious side effects from the weight loss surgery during the two year follow up period.

'I actually stayed in overnight because I wasn't very well but you're normally discharged in the day. As soon as you're awake, it's bye then. Predominantly it is like as soon as you have your operation, you wake up and they give you your cup of tea and off you go' (Hazel)

'Afterwards I felt abandoned. A bit more aftercare would be better' (June)

Secondly, the lack of routine follow up appointments also added to these feelings of isolation and raised some insecurity which made some patients anxious or hesitant about contacting the service when they were experiencing negative medical side effects because they did not want to be seen as a burden to the health service. Patients also felt the abrupt nature of how the surgical intervention was delivered failed to recognise that weight loss surgery was a permanent big decision that would bring significant changes they would have to live with beyond the three to four years they spent as patients in the service

'I think I worry about it cause they tell you that it's a life thing and once it's in basically it stays in unless there's complications but I don't think there's enough research to tell you whether it works or lasts forever. I wonder in years to come will it cause complications when I'm older' (Sarah)

As previously noted, most of this patient group said there was very little in the way of follow ups apart from coming to the hospital to get their bands filled or contact with the dietician if they were experiencing any problems with eating or keeping food down. However, the biggest factor that fuelled feelings of isolation and perceived lack of care from the patient viewpoint was that all these follow up appointments had to be initiated by themselves.

'If you want to see somebody you have to request it. It's not forthcoming' (Hazel)

This feeling was exacerbated by the considerable contrast in support provided during the pre-surgery phase, which was very service-led and frequent compared to the minimal support following surgery. The stark difference in the support levels between these two phases and the sudden way in which the support format changed was rather perplexing for patients. Therefore, most of this patient cohort felt that there was a general lack of aftercare support following their weight loss surgery procedure, a revelation that patients described as surprisingly unexpected.

'So the lead up to the operation was good. There was psychological counselling to make sure you didn't have anything that would circumvent the band or that that was the right option for you to go for, and getting other things sorted like sleep apnoea. So all that stuff sort of beforehand was good but afterwards, it seems to be very much that you're left on your own' (Frank)

Another issue that arose from the patient data when reflecting over their follow up experience after surgery, which seemed to add to feelings of abandonment, was that patients had unclear expectations to the follow up process in the service, especially with regards to how often they would be seen and by whom.

'I think that's the problem with having a gastric band. You didn't really know who you were going to see' (Sarah)

'I've lost tonnes of weight. I feel absolutely tonnes better but I think with the follow up I wasn't really sure what I should do if I had problems' (Frank)

This lack of clarity on what to expect as a bariatric patient in postoperative care was fuelled by poor communication within the very complicated service structure. In particular, six patient

interviewees reported that over their journey, they begun to get confused with the different roles within the multidisciplinary team.

'*I know it sounds a bit silly really cause I could have asked but I found because I'd seen so many different people I got confused as to who's role was who's' (Sarah)*

'I saw a chap called [redacted], I don't know whether he was a dietician or a psychologist. I'm not sure what he was' (Gail)

One potential reason for the role confusion was due to the length of time patients spent in the service from the preoperative to postoperative phase. This was a rather ironic finding as one would think that spending a longer time within a specific NHS service would result in patients getting to know the multidisciplinary team more. Unfortunately, the siloed nature of input from most health professionals dictated by this service structure seemed to make it harder for patients to familiarise themselves with the team and instead led to confusion. At times, due to logistical issues in a given geographical area, some people were referred between two weight management teams. This was the case for two patients in this cohort.

Another key reason that possibly added to role confusion was the evident interdisciplinary working as reported in both the patient and health professional narratives. Specifically, there were times when one profession would take on multiple roles during patient consultations. For example, dieticians reported doing some basic psychological work because they had completed first line psychological therapies training.

'Well I did quite a lot of training in CBT, you know low level CBT, motivational interviewing I will be looking at the behavioural side of things and trying to motivate change.' (HP1)

Some patients also mentioned instances where they went in to see a physician about their diabetes but subsequently ended up also receiving some counselling from them. This may reflect the strong multidisciplinary team working ethos set by the service structure. However, there was a sense in which patients felt this was at times inappropriate as they were not prepared or expecting this approach, and it further added to their confusion of who they were going to see and why.

'I always felt like he was also trying to counsel me and I just didn't feel like he was the right person to do the counselling. He always made me feel [pause] I always felt a bit stupid when I came out' (Sarah)

The service structure itself added to the problem of role confusion for patients, particularly the merging of the two NHS weight management tiers into one team to deliver patient support for weight loss surgery (figure 5). This structure allowed for some health professionals worked fluidly across both tiers, having contact with patients both before and after weight loss surgery whilst others worked in one tier, either before or after surgery. This on top of the interdisciplinary working of staff caused further distress and confusion for patients because it was at times difficult for them to know which health professionals were currently involved in their care. This ambiguity in team identity was also illustrated in the health professionals' narratives, where they sometimes described themselves as part of one multidisciplinary service, and then later identify as part of one specific tier or 'team'. This is exemplified in the dialogue below between myself and a health professional. Therefore, it felt like the identity of this multidisciplinary team a singular entity was not always natural.

"HP3 - I think it's a brilliant service. We are a really really good team. I couldn't ask for a better team of people to work with. We all get on get on really well and work really well together. There's really good communicate between us and it's a very supportive team.

Researcher – so when you said team, do you mean just your [redacted] team or do you mean the multidisciplinary team?

HP3 - The multidisciplinary team, so that's the tier 3 team which would be me, [redacted] (psychologist), [redacted] & [redacted](dieticians) and [redacted], one of the consultants...and [redacted] as well who is our administrator."

Moreover, the health professionals' way of talking about the service in the form of 'tiers' was highly structured and complex health service speak. As an outsider coming in, it was quite difficult to understand and therefore a potential barrier. One could therefore sympathise with patients' feelings of confusion over the different health professional roles and responsibilities as they went through this multifaceted service over several years. It felt like this service structure was not easy for health professionals to relay to patients. Moreover, the lack of service-led communication to patients in the postoperative phase potentially formed a

communication barrier as some individuals were really not sure who they should be contacting.

'I was expecting them to say here are your dietary restrictions, you can do this now, are you okay, you shouldn't have another fill within the next 3 to 6 months but I didn't get anything' (Hazel)

Reflecting over the interview data, the lack of aftercare support and unclear patient expectations fuelled by poor communication between the two groups in the post-surgery phase was a result of the service structure. Despite acknowledging how long it took someone to access weight loss surgery in the NHS, most health professionals saw patients in snapshots of this timeframe from pre-surgery to post-surgery, so they do not perhaps fully appreciate that the weight loss surgery journey went beyond the surgery delivery and the effect it had on the patient and their families even beyond the two year follow up period. This highly structured service meant that some patient expectations were not met because of clashing priorities between patients and health professionals, as well as between different health professionals within the multidisciplinary team. As illustrated, the structural tensions caused by the service structure amplified these postsurgical cliffs that left some unmet patient expectations.

Sliding off the postsurgical cliff

This section is about how the postsurgical cliffs in the postoperative phase that occurred following surgery due to contrasting perspectives between health professionals and patients, as highlighted in the three previous subthemes caused unmet patient needs. For example, the general lack of communication after surgery caused one reported unmet expectation for patients was around getting information from the multidisciplinary team about the extent of the physical and mental changes that they would experience after having surgery. Firstly, some patients reported being unhappy about the lack of information at discharge soon after having surgery. Specific to the discharge process, patients felt more could be done during the perioperative period to better prepare them for what was going to come. For example, two patients talked about a highly-restricted yoghurt diet they endured two weeks before surgery to shrink their liver which they were only told about very close to the operation. Both patients felt they managed the diet because it was so close to the operation. They were so desperate to have the surgery they would have done anything. However, on reflection it was quite a difficult experience for them and they would have appreciated more time to prepare themselves for this.

'another thing you're not told before the operation, quite close to the operation is that 2 weeks running up to the operation all you can eat is yoghurt really...because you want to shrink your liver to give them better access to your stomach' (Gail)

Another patient described how 'extremely painful' recovering from surgery was in the initial weeks. This was in addition to reporting being sent home with injections with no instructions on how to administer them. Overall it felt the way in which the service approached the patient discharge process after people had had their weight loss surgery was so abrupt that it did not leave much room for patients to ask questions or clarify unknown aspects of the follow up process. This made patients feel deserted.

'Very early days after the operation, extremely painful. I never thought it would be that painful…I suppose when I think back I felt deserted after the operation because I was sent home with all these tablets, these injections and I was never sort of shown how to do the injections' (June)

Another unmet expectation in the postoperative phase when reflecting upon patient interviews was the lack of standardised psychological support. This was caused by the highly-structured service which prioritised the acute weight focused six to twelve month period. This led to a postsurgical cliff because this service structure made it hard for health professionals to monitor patients who were psychologically struggling, especially in the longer term. Most of this patient group reported not receiving input from the psychology team after their surgery. This is despite health professionals contrarily stating that psychologists seeing patients postoperatively was part of the official aftercare pathway.

'Psychologists, dieticians, myself all review our patients both pre and post-surgery' (HP6)

Some health professionals corroborated that the service did not offer a standard postoperative package of psychology related input but implied that using it more could be beneficial.

'I suppose using the access to psychologists, dieticians post op. I mean, we do have pretty good access but they're under a lot of pressure so drop in sessions, group sessions post op where patients can come in if they're troubled and discuss things I think would be useful.' (HP4)

'Psychologically, I think we could do a lot more.' (HP6)

Only two people from this patient group saw psychologists after surgery within the service. Firstly Sarah, who had her gastric band 6 years ago, saw a psychologist after her weight loss surgery as part of a research study she took part in soon after her procedure. Fran, who had a gastric sleeve two and a half years ago, also saw a psychologist because she was struggling with coming to terms with how quickly she was losing weight, an experience she described as 'quite scary'. As illustrated below she found the support very helpful.

'The lady that I saw was wonderful and she really did help me. She said if I felt that I needed to have more counselling to say but at the time I felt no actually. I think I'm alright now...for now. They were amazing so probably can't fault them at all' (Fran)

The current service structure which seemed to only provide psychological input post-surgery if people were identified by the multidisciplinary team as 'struggling' formed a general post-surgery cliff which left those in need of support potentially sliding over the cliff. The psychology team felt this approach meant they got to struggling patients much later than desired.

'It can be 6 months down the line that they'll be struggling and then we'd be asked by the team for us (psychologists) to see them but we don't follow up after surgery. The team are very good at picking people up and saying that they are struggling but normally we don't see people until something has gone wrong' (HP2)

Health professionals' data reported empathy towards the need for psychological input post-surgery as they recognised that patients needed to make significant changes to their lifestyle and eating habits to maximise on the health benefits weight loss surgery could provide. Moreover, it was felt that this type of adjustment was an ongoing process which probably took longer than the two year follow-up period.

'Actually the reality is that they (patients) are only just settling after two years and the problem with the surgery is that old habits can creep in and the weight can regain, and if you've got no support with that then the surgery might not be as successful as it could be. So I think, we keep talking about this. It's ongoing, support could be more' (HP1)

In this context, health professionals also reported considerable understanding of how socially engrained weight management was, describing changes in weight and eating habits as a normal and integral part of life regardless of being obese or not, and that outside the experience of surgery, people continued to go through ups and downs in their lives in the real world.

'People go through ups and downs in their lives, and your weight and eating can change throughout our lives or following surgery' (HP1)

'By changing someone's eating and maybe affecting one's eating significantly sometimes can significantly affect the way that they are socialising' (HP6)

Two individuals seemed to further suggest that it was unrealistic to expect individuals who had struggled with managing their weight for a significant length of time to just lose weight, experience significant health gains and regain their confidence following surgery.

'if they're 20 years down the line, the benefit they're gonna get from surgery is gonna be limited and yes, you can say they'll still lose weight or etc. There will still be improvements in their quality of life but bariatric surgery brings huge restrictions on their eating. So if you've got someone who's already limited in what they can do, so you've got heart problems for example, you then put restrictions on them enjoying eating food more, I don't know if their quality of life is going to improve in situation.' (HP8)

'People don't just lose weight and then regain their confidence. It just doesn't work like that' (HP2)

In fact, as illustrated in the previously theme about 'navigating health changes' along the weight loss surgery journey, five out of eight of the health professionals reported witnessing an increase in revisional surgeries on patients two or three years following weight loss surgery because they had not complied with the post-surgery treatment plans and had failed to manage themselves dietetically after surgery. These five interviewees covered the range of the roles within the service. In this sense, health professionals generally identified with the need for more support in the post-surgery phase.

'We've had a couple of people who have not complied...and are not very good at managing themselves dietetically afterwards. Sometimes people change and their needs after surgery so it is something that we've often had a couple of times' (HP4)

It again felt like the strict service structure was dictating or imposing this approach on the health professionals because of limited resources. Specifically, as illustrated in the quote below, postoperative psychology support in this service has been thwarted due to the recent lack of funding because of an increased demand for the procedure which ultimately stops the team developing in the way they would like to from a psychological point of view.

'We have so little funding. Historically I used to see people much more. I used to be able to offer more postoperative input and could offer as much as the patient needed. But we have had more and more patients over the years and there was just no way I could. So eventually I got to the point where I was no longer able to offer as much input.' (HP5)

This clash between limited funds for the service and the roles that delivered psychological input caused tension and frustration for members of this discipline as well as other colleagues within the multidisciplinary team. One surgeon re-emphasised the limited resources in the service by pointing out that psychology input after surgery could be resource draining because everyone likes seeing a psychologist. From their perspective, patients may find it difficult to articulate when they are okay and no longer in need of the input. As a result of this clash, the psychologists integrated psychological approaches into the service in a number of ways; namely supporting the team with basic therapeutic skills via formal and informal training, providing supervision of the team, and helping inform the team on psychological theory applicable to weight management and weight loss surgery. There was a strong sense in which this was being done in an effort to overcompensate on the limited funding and resources directed to psychological input. This scenario illustrates the interplay of competing priorities and perspectives, where there is friction around how to best address patient needs whilst following service protocol amongst health professionals.

Perceived Prejudice

This third theme is about how weight loss surgery impacted patients' social relationships. In particular, it describes how individuals' relationships with family, friends and the general public

changed as they became a ‘non-obese’ person following drastic weight loss. Patients’ experiences of negotiating through identity change from an obese to a non-obese person whilst trying to deal with changing relational dynamics and obesity prejudice are recounted. Examples of postsurgical cliffs in the service in relation to social support and how patients looked outwards for peers to help prevent them from sliding off the cliff are also highlighted. Lastly, interventions for postsurgical social support from both patients and health professionals’ narratives, in view of these changing relational dynamics and perceived prejudice, are described.

There was a strong impression amongst patient interview data about the changing dynamics of family and social relationships as they began to lose weight following their surgery. Specifically, they felt a general improvement in how people treated them compared to before; when they were overweight. For example, there were several times in participants’ accounts where individuals described themselves as ‘proper’ following their weight loss. This implied that when many in this patient group were overweight they felt somewhat like an outcast or oddity when compared to the general public. Specific examples of this belief and subsequent consequences of such beliefs in relation to their weight loss surgery experiences are detailed in the upcoming subthemes.

'I feel as though I'm a proper person now whereas I didn't before. I can actually fit in' (June)

‘I got there. I got my weight down… I felt 10 years younger without a doubt. Yeah it was just, I felt more confident. All of those sort of things. I was like a different person’ (May)

Societal prejudice towards obesity

On a social level, a lot of people explicitly said they felt a clear difference in the way people treated them after weight loss surgery compared to before having the procedure. There was a strong sense amongst patient interviewees that since losing weight, they felt more socially accepted and people now treated them as ‘a normal person’ because they were not seen as fat anymore.

'They treat me differently, like a normal person cause that's the worst thing about being fat. I think people don't treat you as being a normal person' (Gail)

A few patients explained this phenomenon further, saying that they had not necessarily changed as a person but that people around them just treated them differently in a more positive or friendlier way. For example three (female) patients mentioned being more noticed or approached by men, something that had not happened to them in years. This was in contrast to accounts of negative experiences before having weight loss surgery where strangers and relatives alike would make very unpleasant comments about their weight or general appearance such as 'fat cow'.

'Previously [before weight loss surgery] on one of the rare occasions I was out with my friends in a club, a bloke came up to me and said what on earth is somebody as fat as you doing in a place like this, which completely finished me and I never went out again' (June)

Most interviewees were very open about generally feeling negatively judged by people when they were out in public before weight loss surgery, explicitly saying they always felt people were staring at them because of their weight. Many ascribed the negative experiences they went through to societal prejudice against obesity which encompassed stereotypical labels of obese people as lazy, stupid, disgusting and unproductive to society. There was a sense of frustration towards the general societal presumption that people were obese because they simply ate too much which patients highlighted was not always the reason.

'People see what's in front of them not what's inside the fat a lot of the times... People see a fat person and they think "God they're gross. They eat so much" and yet you don't necessarily. I mean it's not necessarily that' (May)

There was also a feeling that this negative presumption was at times present amongst health professionals. This made patients feel patronised and stupid. In fact, a few patients described instances where they left a hospital consultation very upset due to the inappropriate way in which they felt they had been treated by a health professional.

'He asked me loads of different questions about my childhood and growing up...it was awful. I was so upset by the time I had come out. He'd sort of bracketed me and said 'I suppose you know when you're at home at night you sit down and you eat lots of big packs of crisps and bars of chocolates,' lots of things. I didn't find it very useful (Sarah)

There was a noticeable and stark contrast in how patients felt other people viewed them after weight loss surgery, which in turn influenced their improved self-perception and esteem as many reported being less self-conscious. For example, three interviewees said they no longer cared about what people thought of them or if they were being stared at because they felt a lot more confident and happier about themselves following the weight loss they had achieved since entering the service. The examples in this subtheme highlighted persistent social prejudice towards obesity illustrated through individuals' lived experiences of moving from an 'obese' to 'normal' or ex-obese physical state.

Changing family dynamics

This group of patients also reported an improvement in relationships with their relatives and friends after weight loss surgery. This was especially the case where family members had previously expressed worry or had been openly critical about their loved one's weight and health prior to them having the surgery. Therefore, the improved relational dynamic in this context seemed closely linked to observed weight loss and general improved health, although it also seemed that the positive change in emotional outlook on life and increased social interaction reported by this patient group also contributed to the improved relationships with their significant others.

'My mum always was very judgemental. And now I've lost weight I feel I can cope with her better because she's not so judgemental now because she has seen that I have lost the weight' (Sarah)

'When I first started going to the surgeons about gastric surgery and I was told that hopefully after having the operation I could lose all this weight, my mother I would have hoped would say I'm really proud of you, you know. But her attitude was "oh, I hope you lose all your weight' (Anna)

'They are happier now that I am so much fitter and healthier cause obviously people who were closer to me were very concerned about my health originally' (June)

However, weight loss surgery also brought some issues to relational dynamics due to the big changes both the patient and their family had to go through behaviourally and emotionally. For instance, there was some reported strain put on a few spousal relationships where

patients' partners began to feel insecure about their loved one's newly regained confidence following their weight loss and healthier way of life.

'With my partner now uhmm it's changed our relationship a lot, not necessarily in a positive way. He liked me before when I was big so he's kind of struggling that I'm changing. He feels a bit threatened' (Fran)

There were also reported feelings of intimidation from certain family members or friends regarding increased independence and self-esteem from some patients. In a sense, it was as if some people were finding it difficult to cope with their loved one's physical and behavioural changes. In few extreme cases, patients felt like they were no longer perceived as the same person by close relations and friends which was potentially upsetting. This negativity made a few people feel uncertain about whether they still wanted to hold on to such relationships.

'It can have a negative effect more on the wider family. Some people are very positive about it and can say 'wow … you're looking great' and then other people in a negative way. Like you start to look good if you start to put your makeup on and you're starting to put your heels on, that sort of thing and you got out feeling good. The confident is there and almost like they start to feel … like a threatening. Like you're a threat whereas when I was fat I wasn't a threat' (May)

Unfortunately, this was not the only time along the weight loss surgery journey patients reported negative reactions or sentiments from family. Interview data from this patient group also revealed patient experiences of negative pressure from family or close friends, whilst preparing for the procedure, in two ways. Firstly, negative pressure from family was alluded to during the decision-making process where some family members expressed concern and worry over the obese state of their loved one. Negative family pressure has also been outlined in the theme looking at 'navigating health changes' within the subtheme looking at the influence of past experience on having this procedure. Therefore, when the opportunity of weight loss surgery presented itself, relatives concern was an influencing factor for patients going ahead with the procedure. However, in contrast, some patients also reported some apprehension or negative reactions from their relatives towards the actual surgical procedure. In most cases aversion to the procedure from relatives was strongly linked to fear of adverse results or risk of death. In this respect, it felt like patients had to do a lot of work to increase their personal knowledge of weight loss surgery and all the potential risks of having the procedure to not only adequately educate their loved ones, and also convince them to look on

the procedure as a positive thing. As similarly highlighted in the previous subtheme regarding social prejudice, there was again some sense of persistent prejudice towards obesity, when this patient group recounted their lived experience of moving from an 'obese' to 'normal' physical state. Only this time, it was from their families.

'*My son was worried obviously because I was going to be having major surgery and he thought I was gonna die' (Anna)*

'It is a big operation and the risk of health and anaesthetic is obviously dangerous as well at that weight. So obviously once I had explained what I had learnt about it from my different appointments prior to surgery, my family came round and they were all for it in the end' (June)

Health professionals similarly identified with patients' sentiments where at times relatives placed undue pressure on the patient as they made decisions around having weight loss surgery that could result in negative affect.

'*Other times you can see that the family members are putting the patient under pressure, not understanding the reasons why they eat and can be quite negative' (HP1)*

Saying this, they also acknowledged the usefulness of family input during this process; recognising that people do not exist in isolation. Whilst admitting that the service did not do any particular family based interventions within the weight loss surgery journey, they described instances when relatives attended clinic assessments with the patient's consent. They inferred that family members tended to offer information that the patient would not have offered up themselves, such as providing a good indication of the patient's eating habits and food preferences, both in the home and in social settings.

'*I think it's difficult to see an individual in isolation...our interactions with others and the world take up a huge role in our behaviour, lifestyle and everything else*' *(HP3)*

The above experiences illustrate a postsurgical cliff specifically linked to the social aspect of patients' lives. It was evident that weight loss surgery caused significant strain on this patient group's relationships with their family and friends but there was no access to help for this within the service. This highlights the need for family work within the service to help increase awareness of weight loss surgery since as the procedure ultimately resulted in a big change

for not just the patient but their family as well. Health professionals reportedly felt this work could potentially help relatives who were struggling to adjust to these changes.

'That could be something we could do more work into' (HP1)

'It is a big change for the family as well and some people don't adjust to it' (HP1)

Shame, secrecy & help seeking

Reflecting on the two examples of perceived prejudice from the general public and close relations, this section is about an underlying feeling of shame amongst this patient group linked to the perceived changes in relational dynamics. This underlying emotion seemed to manifest itself into two interesting reactions amongst several individuals; namely secrecy about having weight loss surgery and private help seeking behaviour. It also potentially impacted this group's help seeking behaviour.

There were several instances in the interview data where patients associated their overweight state prior to having weight loss surgery with feelings of shame. This emotion appeared to diminish as patients began to experience weight loss soon after having surgery. However, feelings of shame seemed to come back in several patients due to the unexpected physical manifestation of excess skin caused by the drastic weight loss.

'One thing they do often talk about that isn't a positive is the excess skin and the impact of how that has been for them and a lot of people find that very horrible, and shameful' (HP5)

However, the interview data also revealed a different element of shame that stemmed from more social connotations in the post-surgery phase. Specifically, patients reported instances of secrecy, where many either did not tell anyone or only told very few people (mostly close family or highly trusted individuals) that they had actually had weight loss surgery. The main reason for this secrecy was a perceived fear of negative judgment from others about one's inability to lose weight 'normally', and general feelings of embarrassment or shame regarding this perceived failure. Thus, in a sense this secrecy appeared to be interlinked to issues of perceived social prejudice and a yearning for social acceptance from this group of patients.

'So, you know lots of people won't tell anybody at all. They won't tell their partners, their family, they don't tell nobody they've had the surgery. Lots of people keep it quiet. But you

see a lot of people disagree with it. They say you lost weight because you had a band' (Hazel)

Patients also seemingly felt that revealing to others that they had had the procedure would result in people automatically claiming all the weight loss they had experienced was due to the weight loss surgery or people would see them as having 'cheated' because they had taken 'the easy way out'. This perceived hypothesis from this patient group was rather upsetting to them because they felt they had worked hard to lose weight and to keep the weight off by watching what they ate and exercising like everyone else regardless of having the weight loss surgery. This was especially true for those in the longer term follow up group, and particularly for those who had gastric bands. This is because the gastric band became less 'restricted' over time which allowed for a progressively larger portion of food over time. Patients felt a lot of the general public were unaware of the fact that it was still hard to lose weight following weight loss surgery, which influenced the assumption amongst the general public that the weight loss just happens which unfortunately was not the case. Patients felt this reductionist view was fuelled by skewed media representations of weight loss surgery, which tended to report the extremes of either significant success in weight loss or where everything went wrong, and rarely the normal experience.

'I've been quite selective on who I've told to be honest. I think if I say it and continue to lose weight they'll say ''oh well she's got a gastric band'' and I don't want them to think that because it's not easy' (June)

Although seven of interviewed patients stated that they were careful about telling people they had the weight loss surgery, three people had quite a different stance towards this, where they reported not caring about people knowing they had had the procedure. In fact, they used their weight loss success story to signpost others towards having weight loss surgery because it had changed their life so much. They felt it was their duty to not watch other people suffer for so long the way they had.

Health professionals also recognised that there was a considerable number of patients who were sensitive and cautious about who they disclosed having weight loss surgery to. However, they reportedly encouraged patients to tell at least one person, such as a family member, about the procedure during the pre-surgery phase considering how big and life changing a

decision to have this procedure was. A few health professionals reported that an adversity to informing someone about having the procedure was in fact a contraindication for the team moving individuals onto the tier 4 phase to have the surgery. One pre-surgery health professional also linked patients' mind sets around secrecy of the procedure to their progress throughout their patient journey. In their opinion and experience, they felt the more open a patient was at the onset of the journey, the more receptive they were to the support given in the pre-surgery phase and the more potential for success they had post-surgery. Reflecting on these issues raised, it seems assessment of shame could potentially be an important outcome measure for success.

'One husband I think is the only one who knows and very close family, one person at work. Another gentleman really doesn't care who knows [laughs] but then it's interesting. Their mind sets, where they're at in terms of having been engaged in the group is different' (HP7)

Fears around being transparent about having weight loss surgery and feelings of shame were reflective of this group's general help seeking behaviour. For instance, as previously mentioned in the theme around navigating health changes over time, this patient group had a general tendency to leave health issues ongoing until they were at their worst. This was generally because they did not want to be seen as a burden on the health service. When reflecting over their decision to have weight loss surgery, many patients reportedly wished they had presented to their GP for referral to the NHS weight loss surgery service earlier. Perhaps their previous experiences of social prejudice against obesity added to their hesitant help seeking behaviour. That is, they were more likely to feel self-conscious about accessing medical help because they felt people viewed their health condition as self-inflicted or a result of their own failure.

This illustrates another postsurgical cliff in patient care which led many in this patient group to resort to looking outward for further help and advice specifically from peers within the community during the post-surgery phase. This was possibly also because of the lack of aftercare support provided by the NHS service. Learning through peer support was a big thing that came up for people postoperatively. Many said they would have liked to talk to somebody from a patient perspective with experiential knowledge of weight loss surgery to help clarify unknown effects and help them set realistic postoperative expectations. This is because even though the procedure itself was a scary thing to go through, the unknown elements afterwards were even more daunting. In fact, a few patients reported seeing a health professional within the service a few years ago who had had weight loss surgery. They found this individual's experiential advice and knowledge invaluable during their post-surgery follow up. The departure of this individual and subsequent lack of peer support within the current service

during post-surgery follow up possibly left a big gap that needs to be filled from the patients' perspective.

'What I would have really liked would be to have someone else who'd already had the operation at a similar time. We could compare stories, you know, compare ideas. What are you eating? I haven't tried that. Because it is very restrictive the first months as to what you can eat or drink because it's all sort of slushy stuff' (June)

The main source for the outward peer support reported by this group of patients was through online groups. In particular, there seemed to be a well-established privately run Facebook group that was very popular. This online resource was specifically for people who had had weight loss surgery, which this patient subgroup found helpful because people shared their experiences, specifically things like what to do if you have a problem. One individual also sought informal one-to-one peer support from an individual in the community. Overall these resources seemed to fill an information gap that was missing from the service. Thus, some patients also reported signposting people they had met who had had the surgery to the online group.

'If you didn't have that group, you wouldn't have anybody. You don't have anybody at all. I thought we would come back and be registered with a dietician, and they would keep a check on you, but nothing at all. If it wasn't for the Facebook group a lot of people would suffer badly because there is nowhere for them to go' (Hazel)

'The only other support I've had is from a lady, she lives down the corner from me. She had a gastric bypass up in Birmingham. She gave me a lot of support before the operation. She was really lovely and helpful and we're still in contact' (Anna)

Interestingly but perhaps not surprising, Sarah and Harriet, the two patient participants who were longest in post-surgery follow up did not report experiencing a post-surgery gap or a need for post-surgery peer support. This is because when they had their procedure ongoing post-surgery support in the form of psychology and peer groups was routinely provided by their weight loss surgery service or provided as part of an ongoing research study. Therefore, both these individuals reported more positive experiences of the post-surgery follow up and felt wholly supported by their health professionals. Concurrently, the majority of interviewed

patients who received no post-surgery support expressed openness to face-to-face post-surgery support groups, if they were made available.

'There really isn't much in the way of support groups. I've never actually found a support group where people meet regularly' (Frank)

The importance of post-surgery peer support groups was also highlighted by health professionals who reportedly felt that it was helpful for patients to meet other people going through a similar experience. They felt groups were very powerful and the consistency of meeting in this context would potentially help patients who so often felt like they were the only ones going through this difficult journey. From experience, health professionals found that from a patient's point of view the individuals who had engaged in the groups during the pre-surgery phase tended to do better, a phenomenon that in their opinion was influenced by having the support of other people in similar positions within the group.

'There does need to be more peer to peer support where they're getting more emotional support and don't feel like they're being left on their own with all these changes' (HP1)

'Drop in sessions or group sessions post op where patients can come in if they're troubled and discuss things I think would be useful' (HP4)

'You'll find from a patient's point of view that the ones who've done the groups tend to do better because of having the support of other people I suppose in the group' (HP8)

On reflection, from the interview data there was a sense in which secrecy for this patient group came as a result of perceived social prejudice. This led to getting help from peers within the community other than the service. In this respect, these patient accounts of personal experiences of the post-surgery online group and peer interaction highlighted scope for this type of support following weight loss surgery which should perchance be mapped onto the aftercare pathway.

Wished for post-surgery interventions for unmet needs

From the interview data, as highlighted in several examples within the main theme about 'perceived prejudice', it was clear that there were several relational issues that patients had experienced following weight loss surgery. These issues illustrate an additional postsurgical

cliff which led to perceived feelings of uncertainty for the years ahead from both patients and health professionals. For example, there was consensus between patients and health professionals that weight loss surgery was not a standalone solution for obesity, especially as an approach for people who had failed to manage their weight independently for many years. Specifically, health professionals generally reported all the other weight management tools such as dietetic and psychological input were still needed alongside weight loss surgery for it to work effectively in the long term. However, there was a postsurgical cliff in patient care in this regard because these weight management tools were not being provided in a standardised manner following surgery.

'So actually, the work up, that's what you need because the surgery is just a tool. It isn't what's going to cause the weight loss or make the weight come off. It's just a tool' (HP7)

'Weight loss surgery does work but I think equally you still need to have all the other things like dietetic and psychological input for people to make it work properly' (HP5)

The multidisciplinary team, particularly the surgeons, gave insight into specific successes and major progress in weight loss surgery especially with regards to mortality and efficiency of the procedure. However, despite these general successes and positive outcomes, both patients and health professionals voiced concerns over several unknown elements regarding the long-term effects of weight loss surgery. There were specific gaps in medical knowledge over the management of the band once inside the body. For instance, one health professional reported that there was still no criterion to suggest when or not a patient's gastric band was due for a fill despite all the evidence available on weight loss surgery. Therefore, decision making within this area involved deduction from information provided by the patient and the health professional's experiential knowledge, hence the possibility of getting this wrong was possible. Specific gaps in knowledge over the management of weight loss surgery also led to differences in opinion within the multidisciplinary team. For example, there were contrasting opinions between health professionals regarding frequency of medical reviews over the two year follow up period depending on the type of weight loss surgery given. Those involved in the more acute delivery of weight loss surgery felt gastric band patients did not need to be seen as frequently as gastric bypass patients over the two year follow up period. However, psychologists and consultant endocrinologists disagreed with this variation in follow up frequency, and felt both groups required the same amount of follow up and differentiating frequency by type of procedure in follow up was unnecessary. Moreover, as highlighted in the subtheme about structural tensions, there was a split in opinion amongst staff over which

period was the most vital for ensuring success following weight loss surgery, considering the current service provision structure.

'So for the malabsorptive elements of sleeves and bypass, we have to monitor their bloods more regularly for safety reasons and nutritional state...So they are quite frequently reviewed' (HP6)

'The surgeons are hoping that people that have bypasses quite often don't need as much input as those who have bands. I don't necessarily agree with that' (HP5)

On a broader level the narratives also showed a general concern regarding the longer term effects of having weight loss surgery. These concerns were again shared amongst both patient and health professional interviews.

'It's a relatively new thing. I think I worry about it cause they tell you that it's a life thing and once it's in basically it stays in unless there's complications but I don't think there's enough research to tell you whether it works or lasts forever. I wonder in years to come will it cause complications when I'm older' (Sarah)

'I worry that one day we will look back and think what on earth were we doing thinking this was a good idea taking out people's stomachs. I wonder if one day we will look at it like people see lobotomies now' (HP2)

Taking into account concerns raised by patients and health professionals about the future consequences of weight loss surgery, there were several interventions that were repeatedly proposed by interviewees that could be introduced into the aftercare pathway for this specific NHS weight loss surgery service to potentially improve patient outcomes. Firstly, there was a strong notion from patients around having an individual who had had weight loss surgery involved with the multidisciplinary team to act as a patient point of contact, to specifically help clarify the unknown and practically assist patients with the physical and emotional adjustment over the two year follow up period. One individual also suggested mandatory registration of all weight loss surgery patients to a dietician to record and closely monitor weight and eating outcomes. They felt this would help people keep on top of their individual plans more as they would know they would be checked on frequently over the follow up period.

'I'm thinking having a helpline or something like that where you could phone up and say I've had this problem and how do I get around it. Like an advice line. That could work' (May)

Another idea that was coherent amongst patients and health professionals was about providing more education, specifically around post-surgery management. Patients felt this could be provided at the perioperative stage whilst in the hospital ward, before people were discharged. Specifically, practical elements like how to use Clexane injections at home; these are used to stop blood clots forming within the blood vessels. They also felt education could be extended over the two year follow up period in the service by putting together a helpline dedicated to post surgery patients so they could call up for advice if they had problems. It was unclear how this would differ from the current policy of calling the service when struggling. Perhaps the helpline would cover an array of psychosocial issues as opposed to just specific dietetic concerns. There was a strong sentiment amongst patient interviewees that more service-directed post-surgery management education would help increase people's awareness of what to expect from the onset and going forward. Overall this group were suggesting that more information about what it might be like after surgery is needed for patients both before surgery (as part of informed shared decision making) and afterwards.

'I was sent home with a box of needles and a sharps bin. So that, I think if there was any feedback, I would say they should get you to do one whilst in the hospital at least before you leave so you've got an idea of what you're doing' (June)

Health professionals agreed with the need for more education around management following weight loss surgery. Both patients and staff alike felt support groups would be ideal for delivering post-surgery management education. Staff especially liked this approach because of its two-pronged approach of being potentially both cost effective and of patient benefit. Several other health professionals suggested more online learning and support to encourage self-management of obesity. This was also viewed as a cost effectiveness way of delivering an aftercare intervention, as apart from the initial set up and occasional updating of the online information, no on the ground staff would be required.

'There needs to be a lot of education around management' (HP3)

'Surgery won't help you with emotional eating, buying or cooking healthy food, life change stuff. So, you've got to give them skills to manage that or it won't work in the long term' (HP1)

However, one health professional considered the disadvantages of online support in terms of who will access the online interventions and the complexities of managing such forums. In this sense, the online support was seen as an alternative for those who could not commit to the face to face groups.

'Maybe more online support so a place where patients can get questions and answers. It is tricky to manage those things and moderating posts, and they can become quite unwieldy and unmanageable. Plus a few difficult characters could potentially make it an unhelpful forum. So I think managing it can be tricky but may be some more online learning and support might be a way of helping people that can't come to groups or commit to groups so they still access support really.' (HP1)

The setup of an education session for families at the end of the pre-surgery group work or in the post-surgery phase to give relatives insight into what to expect and give them the chance to clarify any anxieties or questions they may have was another proposal by health professionals.

'I don't know whether we could do a one off drop in session in each block of groups and maybe ask the partners to come to that. You know like an education session might help. But it's not something that we do offer and I can't really work out what we could offer but I do feel in general we can't deny that we are all part of a bigger system. And there are so many influences and family is one of them.' (HP2)

They also highlighted that there was a need for education on post-surgery management of weight loss surgery for GPs and the primary care sector in general to facilitate care for people who had been discharged from the service after the two year follow up period.

'There's is a lot of education for GPs and primary care to do which we are in the process of trying to sort out. So that is something we need to get better at.' (HP4)

On reflection, these proposed interventions all highlighted the current gaps in post-surgery management and support of patients after having weight loss surgery. Moreover, the coherence in suggestions made between patients and health professionals suggests these health professionals were generally aware of some of their patients' needs following surgery. However, specific gaps in knowledge of patient psychosocial postsurgical outcomes and the

siloed nature of the service structure made it difficult for health professionals to fully appreciate extent of challenges patients experienced soon after having their weight loss surgery, regardless of whether they successfully lost weight or not. Interestingly, both groups seemed to suggest approaches that targeted patient support networks to address the realm of post-surgery management. Therefore, support networks could potentially be an appropriate postoperative avenue for patient care.

Overall, the theme of perceived prejudice highlighted the effect that shame had on individuals within this patient group as they lived through their experience of obesity. This was reflected in the reactions towards their size before the surgery as well as the weight loss surgery itself. Although weight loss following their procedure generally improved societal and family relationships, underlying persistent shame limited some individuals' confidence to openly seek help from those outside their peer group, including close relations. Although weight loss is the main outcome used as an indicator of success for this patient group, the findings in this theme show potential need for emotional and social support for patients after surgery to help address underlying feelings of shame derived from previous experiences of obesity prejudice.

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CHAPTER 4 – DISCUSSION

Introduction

Overall the results suggest that weight loss surgery is a life changing decision that people come to when all hope is lost. It may follow a long-term struggle to lose weight. However, when an individual is screened as eligible and accepted for surgery by an NHS service, the wait for weight loss surgery is yet again extended, with patients waiting for anytime between six months to two years for the actual procedure although the typical timeframe is six months to one year (Jennings et al, 2014). While frustrating, it appears this period of impatience may be transformed into positive feelings due to the pre-surgery work people receive within the bariatric service from specialist health professionals. Specifically, it may give patients time to decide whether surgery is the right course of action to take.

What follows is the acute delivery of the intervention i.e. a particular type of weight loss surgery seen as most appropriate for the individual, then a two-year follow-up period which this patient group perceived as minimal, inadequate or not enough to fully equip people for the physical and mental changes they will go through. Participants' negative perceptions of postoperative care seemed partly due to the contrast in support provided between the preoperative and postoperative stages. However, a big part of the negative appraisal from this patient cohort was the imprecise communication they experienced as they went through their weight loss surgery journey. The minimalist approach in the postoperative phase of this service seemed to result in patients reporting a 'postsurgical cliff' in patient care.

Amongst the themes, the postsurgical cliff was identified after surgery typically after a year of having surgery when weight loss became harder for patients, and they started experiencing other physical changes to their body like excess skin as well as latent psychological distress from the physical changes. A postsurgical cliff was also noted in specific aspects of service provision, specifically in terms of a drop off of postoperative communication between staff and their patients, and provision of standardised postoperative psychological care. The perception of this 'cliff' appeared to be a result of contrasting views between patients and health professionals regarding postoperative priorities and a highly-structured service which forced health professionals to focus on acute delivery of the procedure as an obesity intervention which left long-term issues unaddressed. Lastly, a 'cliff' in care was noted in terms of helping patients cope with identity change and subsequent associated changes in relationships with their families and society in general.

The findings presented in Chapter 3 have several implications for health psychology practice which will be discussed in this chapter. Study limitations will also be examined and some directions for future research suggested, including the role that health psychologists could play in this area.

The conflict of managing patient needs with restricted service provision

The physical and mental health changes that these patients experienced after surgery extended beyond their time in the service and were unique to every individual. This contrasted with health professionals' reported involvement, who focused on managing these changes whilst the patient was in the service over the two year postoperative follow up period. Common types of negative changes reported by participants were excess skin, permanent food restrictions and psychological acceptance of a new 'non-obese' form, all of which were triggered by drastic weight loss following their surgery. These findings are similar to the qualitative studies covered in the literature review, where participants described the process of psychological adjustment after drastic physical changes as challenging and perplexing (Natvik et al, 2013; Warholm et al, 2014; Faccio et al, 2016). Unfortunately, from the data in this study, it appears these challenges remain largely unsupported because current follow up through NHS services seems minimal and based on patients' self-referral. According to the National Bariatric Surgery Register, there are currently about 45 NHS providers in England (including private providers) that are commissioned to deliver weight loss surgery. Capehorn, Haslam and Welbourn (2016) corroborate the issue of service provision in a recent obesity report, highlighting that there is inconsistency in implementation of the NICE guidelines for obesity care across these providers, resulting in a 'postcode lottery' effect regarding treatment provision. This therefore implies that the experience of these participants may not be unique to this particular service. Areas of need not met by services were experienced as a patient care cliff.

In particular, resultant excess skin following drastic weight loss was evidently problematic for many participants when discussing physical postoperative changes, triggering feelings of shame and distress. Excess skin after weight loss surgery has been shown to impact approximately 70% of patients usually affecting the abdomen, arms, breasts and thighs, and can negatively impact on ability to exercise (Baillot et al, 2013). As shown in the interview data, excess skin can also affect intimate relationships by changing physical intimacy within existing relationships or bringing anxiety about the possibility of starting a new relationship (Snowdon-Carr, 2016a). Saying this, it is worth noting that people's responses to excess skin differ and change over time. For instance, few participants who had not yet experienced issues

with excess skin because they were early in the weight loss journey used the fear of potential excess skin as motivation to exercise regularly to hopefully minimise presence of loose skin. Unfortunately for most, the extent of emotional distress caused by excess skin in patients was unexpected but significant, and also acknowledged by health professionals as a frequently voiced postoperative issue. Considering the findings echoed in this study regarding excess skin and its potential to reignite body dissatisfaction are similar to previous qualitative studies (Magdaleno et al, 2011; Lyon et al, 2014), this issue should perhaps be prioritised as a postoperative outcome which warrants effective support within bariatric services (Coulman et al, 2016).

Another pertinent issue for participants was the changing sense of self and self-recognition problems. Our sense of self is a subjective, emotion-laden, ongoing self-evaluation of worthiness, competence and social acceptability (Cochrane, 2008). According to Snowdon-Carr (2016b), issues of self-worth and esteem amongst people who significantly struggle with weight are pervasive within clinical practice. In this qualitative study, there was evidence of an internal struggle amongst participants after surgery as they drastically lost weight. For instance, some described being unable to recognise themselves in their new, non-obese body shapes. Changes in self-perception seemed connected to the postoperative journey detailed in the subtheme 'navigating health changes', where patients initially experienced successful weight loss, but later had to wade through the struggle of postoperative complications and psychologically adjustment (Snowdon-Carr, 2016a). However, changing sense of self was also strongly illustrated in the subtheme about 'perceived prejudice', where participants noted more positive, friendlier treatment from both family and wider social circles as they physically left their obese identity behind. Although weight loss improved participants' confidence and esteem, there was a sense in which their past obese identity lingered. In addition, some participants experienced jealousy and mistrust from previously stable relationships following their newly found confidence and improved self-esteem similar to participants' accounts in Magdaleno et al (2010). This caused ambivalent feelings as these individuals negotiated social weight stigma whilst adjusting to their new 'normal' identity (Meana & Ricciardi, 2008).

Participants' narratives also showed a lack of communication from the service soon after receiving the surgical interventional. Patients were not clear of the postoperative pathway despite health professionals reporting that a post-surgery aftercare pathway exists. This lack of clarity is reflective of current ambiguity amongst commissioning groups and relevant working bodies in the NHS as to the exact workings of the weight management tiered structure (figure 5) and how these tiers should feed into each other (Welbourn et al, 2016). For example,

there is currently no universal geographical coverage of pre-surgical weight management services in the NHS (British Obesity and Metabolic Surgery Society, 2014) which can result in an overstretched team that works across the NHS weight management services as illustrated in the health professionals' narratives. Ultimately this structural complexity seems to cause patients distress and confusion, with individuals reporting feeling abandoned after their surgery whilst encountering physiological and psychological changes. Perhaps clarity from the top down on the service structure would improve the health professionals working approach and influence more concrete psychology aftercare across the board.

Postoperative psychological input was reported as particularly limited by lack of funding in this service. The psychology team therefore overcompensated by intense input in the preoperative phase and generally integrating psychological approaches into the service, providing basic therapeutic skills training and supervision to certain colleagues in the multidisciplinary team. However, the patient cohort still reported a lack of psychological support following surgery. The need for one to directly ask or be assessed by the multidisciplinary team as struggling during a follow up consultation for access to a psychologist postoperatively was possibly an additional barrier. From a psychological context, literature shows that psychological illness averts help seeking (Henderson et al, 2013). As follow up appointments were reportedly scant, the ability to pick up struggling individuals through this avenue is questionable. Moreover, minimal communication from the service may also risk isolating 'failing' patients i.e. those who struggle to lose weight, as they are less likely to seek help from the service. Help seeking for this subgroup may be even harder considering the context of obesity where issues of stigma are rife (Poon & Tarrant, 2009; Stuart et al, 2015). The above findings illustrate postsurgical cliffs, highlighted by gaps in patient needs caused by limited service provision. These postsurgical cliffs may be there because of a lack of theory based approach to obesity treatment, where the health professionals do not see it from a life course framework but from the view of preparing individuals for a one-off intervention. This study therefore provides an illustration of experiences post operatively, highlighting both the physical and emotional issues patients face as they go through their weight loss surgery journey. These issues point out the need to understand eating behaviour routes in early life, the function of eating as a coping mechanism and the long-term behaviour change support needs of this patient group.

A potential way to reduce these cliffs or gaps in patient needs may be for the service to conduct a joint process mapping workshop with patients and health professionals, where they can identify where problems are arising along the patient journey and share ideas on potential solutions (Phillips & Simmonds, 2013). It may also be helpful to consider the use of interventions that promote shared decision making where patients' and health professionals'

specific expectations for postoperative care are clarified. From the interview data, it seemed this multidisciplinary team already employs a shared decision making approach with patients when it comes to deciding what procedure to have, as all patients reporting that they were well informed about the risks and benefits of their surgical options (Légaré et al, 2010). This approach could be extended onwards to making joint decisions about patients' aftercare. The service has an information booklet on the hospital website which outlines the surgery process for patients and their carers (Appendix 10). Information booklets can be useful educational decision aids in healthcare settings because they can increase patient knowledge regarding their treatment options, increase participation in decision making and improve treatment adherence (Stacey et al, 2014) which may improve health outcomes. However, its utility is dependent on how accessible it is and how motivated individuals are to read it. Perhaps health professionals can signpost this more within their service and develop similar material focused on post-surgical implications. This approach may promote communication between patients and health professionals because of indirect therapeutic effects of frequent contact, and foster relatedness due to shared goals settings which may subsequently improve health (Street et al, 2009).

Findings also suggest that the rigid service structure imposed measures for success which had a narrow biomedical emphasis focused on weight loss and obesity related co-morbidity outcomes. In this medical framing, patients attributed minimal or no weight loss as failure, exemplified by reported feelings of disappointment. However, weight loss surgery literature shows that although the procedure is the best evidence based treatment for obesity with regard to weight loss and maintenance of weight loss evaluated to date, 20-30% of people start to regain weight within 24 months (Weineland et al, 2012). There are also growing numbers of patients who require revision surgery mostly due to unsuccessful weight loss following their first procedures, with incidents rates ranging from 5-56% (Kellogg, 2011; Shimizu et al, 2013) and those with gastric bands reporting higher rates of revision surgeries (Courcoulas et al, 2013). Taking this into consideration perhaps weight is not the best progress marker to focus on long term. Putting too much emphasis on weight as a determinant of health in many obesity management interventions such as surgery and diet programs may be misplaced (Barth & O'Kane, 2016). Moreover, the reported absence of postoperative psychological measures in this service highlights the ongoing gap in knowledge regarding postoperative long term psychological disorders and trajectory in this patient group. This is despite the psychosocial challenges the procedure has been shown to elicit (Bagdade & Grothe, 2012). This lack of postoperative psychological assessment is another important issue because the problem here is not about attaining an ideal weight but addressing disordered eating behaviour. There is evidence that infers weight loss interventions with a

psychological components like mindfulness or motivational interviewing reap better long term and sustainable health benefits like increased activity, improved cardiovascular function and eating disorder even if individuals to not attain a healthy BMI (Daubenmeier et al, 2016; Donini et al, 2014; Hardcastle et al, 2013). Research also shows similarities in binge eating disorder psychopathology between obese and normal weight individuals implying severity of the eating disorder is unrelated to weight (Dingemans & van Furth, 2012; Goldschmidt et al, 2011). Therefore simply linking ideal weight to health, especially using BMI categorisation, is a reductionist perspective. Perhaps 'degree of disordered eating' and 'psychological distress' are more appropriate outcome measures that could help capture psychosocial challenges along the weight loss surgery journey alongside weight and other physiological health outcomes. Overall, integrating health psychology in weight loss surgery is important to facilitate a much needed shift towards biopsychosocial framing of progress markers in this field. This approach may also aid a comprehensive theoretical development of the life course of obesity and within the obesity surgery context.

This qualitative study also suggests that people who have weight loss surgery seem to be affected by societal reactions towards subsequent changes in their appearance. Participants particularly attributed negative reactions from others towards their former obese appearance. This is similar to findings in the literature review which suggest negative stereotyping from the general public and health professionals alike towards obese people (Harvey & Hill, 2001; Poon & Tarrant, 2009; Stuart et al, 2015). This perceived societal prejudice at times provoked underlying shame amongst certain individuals in this patient cohort which caused them to either not disclose having the procedure or to seek postoperative help from peer groups as opposed to the service. Such prejudice may be akin to concerns about potential social prejudice invoked by negative obesity rhetoric from the media and the 'food addict' label raised by critics of food addiction theories. Perceived public stigma and self-stigma have been identified as important barriers to help-seeking in a range of healthcare settings amongst stigmatized groups (Eisenberg et al, 2009; Pedersen & Paves, 2014; Clement et al, 2015; Baxter et al, 2016). Perceived stigma may also contribute to persisting body image dissatisfaction.

This perceived stigma might explain why this patient group sought help outside the service, particularly peer support groups. A few reviews do suggest a positive association between attendance at social support groups and weight loss following weight loss surgery (Livhits et al, 2010) and emotional benefits within chronic conditions (Campbell et al, 2004; Fisher et al, 2012) providing scope for their establishment in the postoperative phase. However, literature also reflects contradictory findings with either inconclusive results regarding the impact of peer

support programs on patient outcomes (Rotheram-Borus et al, 2012), or no significant effects (Johannson et al, 2015). This is perhaps due to the different focuses in outcomes measures amongst the studies. Particularly those focused on treatment adherence find more positive impacts due to increased patient engagement. It is therefore important to pinpoint key reasons for seeking peer support from patients' perspectives to accurately assess intervention outcomes. On a general scale it is also vital to assess and address the impact of weight based stigma in this patient group and evaluate its impact on health outcomes after weight loss surgery.

Some individuals also report changes within their family dynamics. Such changes occurred mostly in a positive way where significant others were happy about weight loss achieved and general health improvements. Body image as an illustrative agent here reflects the positive impact of visual shift away from one's obese identity reinforced by desirable appraisals from close others (Grogan, 2007). However at times relatives or friends were reported as reacting negatively, either because they felt jealous or threatened by their loved one's renewed positive outlook on life or increased confidence following weight loss. In extreme cases, participants felt as though people saw them as a 'new person' although 'normal' was more commonly used. A qualitative study by Epiphaniou & Ogden (2010a) exploring experiences of dieters who successfully maintain their weight loss also showed an identity shift. In this context, the transition was from a previous restrained self towards a liberated individual, regarding their social interactions, dietary habits, emotional regulation and self-appraisal. Again their results reflected the impact of stigma on an obese person's self-identity as they struggle through the process of reinvention and accepting their non-obese identity. Body image perception here may manifest in a negative way due to reminders of painful past experiences which trigger the individual feeling dissonance in accepting a new self-identity. This highlights a need for family work in the service focused on helping relatives who are struggling to adjust to changes because of their loved ones having weight loss surgery.

The interaction between patient and health professionals throughout the interview data illustrated another interesting relational dynamic. There seemed to be quite a tension between their perspectives. At times the patient had a stronger, more needful voice and the health professional was fairly quiet. This was particularly true in areas of postsurgical cliffs, where patient cohort voiced the physical absence or disjointed care from the multidisciplinary team. At other times the roles were reversed. For instance, the health professionals' strong presence and focus during the preoperative phase and delivery of the surgical intervention was so evident within the interview data. Their voice came through stronger and with more confidence when describing these stages. Contrarily, when reflecting on the postoperative phase, this

strength shrunk and their narrative was at times hesitant or vague. Perhaps this reflects the natural flux in roles during the process of weight loss surgery.

Lastly patient narratives reflect the weight loss surgery trajectory reported in the systematic review (Jumbe et al, 2016 – chapter 1) which found a pattern over time in terms of psychosocial outcomes, where initial scores improved significantly during short term follow up (approximately 1 to 3 years after surgery), plateaued between 3 to 6 years then started to gradually decline post 6 years i.e. longer term follow up. The latent psychological experience of accepting a new identity i.e. non-obese or 'normal' as reported by participants who were within that 3 to 6 year follow up period in this study and the reported strong ambivalent feelings triggered by physical changes to the body following surgery in previous qualitative studies (Meana & Ricciardi, 2008; Natvik et al, 2013; Warholm et al, 2014) possibly emulate that plateau in psychosocial outcome measures. Another important finding here is that this turbulent experience more likely occurs outside the two year follow-up period in the service, when official aftercare support has ended. The above illustrates the notion of obesity as a chronic condition, and the need to understand and treat it within an extensive lifespan context.

The National Institute for Health and Care Excellence (2014) guidelines for obesity surgery do state that after discharge from bariatric surgery service follow-up, health professionals should ensure that all people are offered at least annual monitoring of nutritional status and appropriate supplementation according to need following bariatric surgery, as part of a shared care model of chronic disease management. The guidelines do not specify what this model looks like but working groups seem to suggest healthcare practitioners and managers in primary and secondary care should work together to discuss and agree on programs, troubleshoot issues at the interfaces of care provision, and negotiate resources (Millar, 2004; Smidth et al, 2013). The health professional cohort already mentioned the need for GPs to be appropriately linked up to the postoperative discharge to ensure follow up of individuals discharged from the service. There is also a knowledge gap regarding weight loss surgery management to facilitate long term care of this patient group in community settings. Perhaps the approach suggested by expert working groups could help progress development of weight maintenance and psychological interventions in primary care settings onto this shared care model (Smidth et al, 2013). The emphasis on the model being proactive, holistic and patient-centred also highlights the importance of patient involvement when developing interventions for chronic disease management (Coulter et al, 2013), widening scope for more qualitative research in this area.

Implications for health psychology theory and practice

The systematic review and original qualitative study reported here point to a continuing gap in theoretical understanding regarding psychological outcomes following surgical treatment for obesity. They also highlight potential areas for improvements in service provision in the post-surgery period, in the form of psychological support, peer support (including family work) and widening the scope of progress markers by incorporating psychosocial aspects to reflect more holistic care. Finally, findings also point to the need for extending aftercare beyond the follow up provided by the weight loss surgery service. This would enable treatment of obesity along the life course. At the core, the above suggests an urgent need for cost-effective interventions to promote long term weight loss maintenance, something which could be confirmed through larger scale research. What is clear is that the field offers an important opportunity for health psychologists considering our knowledge of theory, behaviour change techniques, process evaluation and development tools like intervention mapping (Eldredge et al, 2016). As such there are several implications for health psychology on a theoretical and applied level.

Implications for theory

In the context of theory, health psychologists have not focused much on weight loss surgery research and subsequent weight loss maintenance despite its relevance to the field. There is a wealth of literature regarding behavioural interventions for general weight loss maintenance that show somewhat modest success (Dombrowski et al, 2014; Simpson et al, 2011) but few of the interventions have been explicit about the impact of psychological theory on weight management, especially following weight loss surgery (Snowdon-Carr, 2016a). The lack of theory in the treatment approach of obesity surgery was a key finding that underpinned the themes of this qualitative study, particularly the contrasting view of timeframe when delivering the surgical intervention, and the different perspectives of elements like communication and health outcomes during aftercare between the health professionals and patients. These findings point to the need to better understand the psychology of obesity. A key focus around what is going on in people's heads that matches the elaboration of theory from a public health perspective that develops our understanding of the complex obesogenic environment is especially useful.

Epiphaniou and Ogden (2010b) suggest that initial behaviour change is triggered by salient life events (e.g. illness) and then later transformed into a sustained behaviour change if the choice over the old behaviour is reduced, the function of the previous behaviour is disrupted, and individuals believe that behavioural solutions at hand will be effective. Their results illustrate the role of choice and the function of the behaviour for individuals when attempting

change. This falls in line with patients' accounts from this study, where they all described how negative events in their life, particularly obesity related illness as triggers to their decision to have weight loss surgery. Regarding weight loss maintenance, continued weight loss was initially facilitated by physical functional disruption of overeating via the surgery and limited food choice to an extent. However, in the long term the more behavioural elements like increasing self-efficacy of healthy food choice and physical activity seemed less targeted and somehow left to the individual during and beyond the NHS aftercare period which may potentially explain for trends in weight gain over time. This illustrates how external environmental elements combined with intrinsic beliefs can together influence one's motivation and ability to change behaviour as outlined in the addiction theory.

Since weight loss surgery imposes a physical change in individuals' ability to consume large quantities of food as well as what types of food can be consumed, another important element that requires theoretical development is around how the procedure effects the complex nature of eating behaviour. Wood and Ogden (2012) who looked at binge eating behaviour before and after gastric banding in 49 patients found that decreased binge eating as a consequence of having surgery significantly predicted postoperative weight loss. They suggested the procedure possibly facilitates a change in cognitions relating to food by changing the association between emotions and food. Other studies have similarly described lower hedonic responses to food after surgery, attributing it to lower activation in the brain reward system outlined in the addiction theory (Scholtz et al, 2013) and changes in taste perception (Pepino et al, 2014). Wood & Ogden (2014) subsequently identified behavioural intentions as key predictors of reduced binge eating after surgery which implies that individuals who present with binge eating at preoperative screening may still achieve positive weight loss outcomes if engaged in interventions that target increasing preoperative levels of intention to follow the post-operative eating guidelines.

Another theory outlined in chapter 1 was the Marks' COD which links imbalances in homeostatic processes to obesity, by proposing over-consumption of high-caloric, low-nutrient and low satiating foods, combined with a stressful environment as the origin of weight gain (Marks, 2015). Reflecting over the participants' experiences illustrated in chapter 3, one could build upon this theoretical model by thinking about how psychologists can potentially facilitate patients to break out of their vicious 'circle of discontent' following weight loss surgery. The participants' accounts give us a map of a journey from clinically severe obesity to weight loss surgery and onwards to sustaining weight loss. Focusing on the postoperative journey between the surgical procedure and weight loss, there was the notable 'honeymoon phase' in the first 6 months to one year after surgery which was characterised by the most dramatic

weight loss. This is a period of heightened positive reinforcement through dropping numbers whenever patients stand on the scale, a shrinking body shape when looking in the mirror, and improved in obesity co-morbidities. Alongside this, patients are also learning how to eat right to avoid getting sick and adding complications that might upset the procedure. This time of relearning eating behaviours brings about new experiences like not feeling hungry, something that rarely happened prior to surgery. This honeymoon period is therefore important because if healthy habits can be well established during this time of optimism and reinforcement it is more likely that these habits will be adopted for the long term (Meana & Ricciardi, 2008). It would be useful to map this honeymoon phase onto the COD model as an extension, showing how people's relationship with eating and affect may change after weight loss surgery, and signpost practitioners to trigger points they can use to help shift this patient group towards a 'circle of content'.

There is also limited understanding around the implications for body image after weight loss surgery (Gilmartin et al, 2014). As previously outlined in Chapter 1, evidence implies body image improves due to weight loss after this surgical procedure (Sarwer et al, 2010). Perhaps surgery induces cognitive changes that decrease body image dissatisfaction. However this effect may be countered by excess skin issues further down the weight loss surgery trajectory (Gilmartin et al, 2013). As such it is important to theoretically map body image outcomes over the weight loss surgery trajectory so that appropriate aftercare can be developed to facilitate long term progress (Lyons et al, 2014). Overall the above exemplifies scope for empirical studies to validate change processes suggested by theory and identify those processes that can be manipulated to achieve long term maintenance of weight loss.

Implications for practice

The results also suggest a lot of scope for health psychologists to work as applied practitioners within a multidisciplinary setting. Firstly, in a direct therapeutic manner with regard to standardised psychology input in the post-surgery phase. It seems a standardised approach may be particularly be beneficial for those who would potentially feel uncomfortable to ask for psychology support because the support would be readily available. Psychological support at this stage could include addressing past experiences and subsequent shame considering weight stigma is a barrier to effective treatment (Farhangi et al, 2016). West's addiction theory states that on top of internal and external influences from our surrounding, behaviour is further affected by past experiences. Patient accounts in this study regarding emotional turmoil after surgery whilst transitioning from a previously obese to thinner person caused by a self-identity dominated by weight likely influenced by past negative experiences of social stigma and prejudice towards obesity, similar to Epiphaniou & Ogden (2010a). Moreover the

psychological distress caused by excess skin seemed reminiscent of these past negative experiences, illustrating a degree of internalised weight stigma amongst these individuals (Carels et al, 2009). Tackling thin-ideal devalorization as proposed by Marks' COD theory could potentially help combat stigma in obesity and improve subsequent weight loss outcomes in this patient group (Annunziato & Grossman, 2016). Unfortunately findings from this study are not sufficient to make conclusions about the effect of past experiences of stigma on eating behaviour following surgery.

There may also be an avenue for developing family work in the service focused on helping relatives who are struggling to adjust to changes as a result of their loved ones having weight loss surgery. A particular focus here could be understanding the role of food within the family context and how this links with manifestation of maladaptive eating behaviour as highlighted in the COD theory (MacBrayer et al, 2001), as well as how this changes after a relative has weight loss surgery. The therapeutic opportunities in this setting are plentiful. Unfortunately the actual implementation of this avenue is heavily dependent on funding but may be possible if resources are shared between the primary and secondary care settings.

The role of health psychologists could also be instrumental in the strategic planning of how to widen the scope of progress markers in weight loss surgery. Their insight of pertinent issues that patients raise during psychological assessment at the preoperative stages could guide incorporation of appropriate psychological and social measures in the post-surgery period. This would hopefully build a more complete picture of the impact the procedure has on individuals. In addition this approach could facilitate a shift from a weight focused to holistic success markers within the service which could in turn influence patients to have more realistic expectations that help set broader, achievable personalised goals. This falls in line with the 'weight inclusive approach' which provides emphasis on viewing health and well-being as multifaceted while directing efforts toward improving health access and reducing weight stigma (Tylka et al, 2014) thus fostering more effective outcomes on health and wellbeing.

Lastly, health psychologists could be key facilitators between the multidisciplinary teams and patients during the shared mapping workshops for aftercare pathway as well as acting in an advisory capacity on relevant working groups that influence national guidelines. For instance, the British Psychological Society formed an obesity working group which produced a cohesive report on psychological approaches to obesity for academic and applied work (Waumsley et al, 2011). This was after noting that despite national obesity guidelines (NICE, 2006) recommending CBT as the key psychological intervention for addressing behavioural change in obesity, psychological issues do not generally receive as much attention as dietary and

social issues. Judging from participants' accounts in this qualitative study, there is still room for more increased awareness of psychological interventions for obesity that can be useful both before and after weight loss surgery. Such reports can increase knowledge of psychological treatments for obesity amongst other health professionals and policymakers, and hopefully encourage the establishment of concrete psychological interventions in the postoperative patient pathway. However, national guidelines require strong evidence base, albeit promising clinical practice outcomes. Therefore, it is important for psychologists to conduct more rigorous research on the effect of various psychological interventions after weight loss surgery on patient outcomes like long term weight loss and maintenance as well as eating behaviours. Considering its effect on relapse prevention in general weight management, it would be particularly interesting to explore the CBT interventions in postoperative patients over time.

Health psychologists could also work to influence key policy makers to take on preventative strategies aimed at reducing access to obesogenic environments that enable passive over-consumption amongst the general public. As previously noted in the COD theory, aside from genetic predisposition to obesity, overeating is particularly bolstered by environments where calorically dense foods are readily available and physical activity is limited (Swinburn et al, 2011), as well as general stressful situations (Marks, 2015). Moreover, the therapeutic encounters that psychologists working in weight management experience give them invaluable insight around trigger points and psychological factors that foster obesity. Knowledge gained within clinical practice and theoretical advances can be useful in developing strategies that curtail overeating in both physically and emotionally obesogenic environments from a life course perspective.

Limitations and future research

Despite the thought provoking findings there are a few limitations to this research that are worth mentioning. The knowledge produced from this qualitative work does not generalise to other people or other settings because the findings are possibly unique to the relatively few people included in the study. The use of one recruitment site adds to this limitation. The small sample rules out quantitative predictions therefore findings may have lower standing with key bodies like commissioners of guidelines for weight loss surgery and obesity management. As mentioned in Chapter 2, attempts to diversify the sample group more by recruiting from support groups failed. Specifically, out of several emails and phone calls made to group facilitators in the UK, only two responded positively and said they would pass on the

information to their attendees and put up a poster in the venue that they meet. However it is not clear whether this was actually done as no responses came through this route. On reflection this recruitment source could have been focused on more by attending the groups and doing a talk about the study similar to the talk delivered to the health professionals. Perhaps participants from support groups would have brought a unique experiential perspective to the interview data. Another limitation to the study was that the patient sample only included one man. It is unclear what avenues could have been used to increase the number of male participants in the study as both the service and support groups are female dominated environments. Moreover the data collection process was very time consuming and as time was a big restriction, this limited potential to recruit through support groups. In this study, an average of four hours was spent conducting and transcribing interview data per participant. The data analysis was even more time consuming. Therefore completing the research had to be prioritised over increasing recruitment numbers. However on reflection the data generated from the sample group had reached saturation as I was not getting any new information from transcripts.

Lastly, the results in qualitative research are more easily influenced by the researcher's personal biases and idiosyncrasies. Food is a necessity for human beings as it is our fuel which makes eating a normative function. However food and how we prepare it is also very culturally influenced and forms our identity in society. My interest in this field therefore stems from a fascination of the vast array in which people relate with food and eating. On a personal level, one of my parents has a food nutrition background which as a result has made healthy eating a normal concept for me. I have also lived in several countries with distinct cuisines, which has influenced my diverse palette. Additionally growing up in a country where beauty is not so heavily attached to a thin ideal allows me to appreciate a wide range of body shapes. I had no strong preconceptions regarding potential patient interviewees. However, I was anxious about my ability to understand the weight loss surgery environment as my experience of this setting was mostly based on the media and watching topical documentaries. As such, I spent some time within the bariatric surgery service, shadowing the health professionals during clinic assessments with patients which was invaluable. In this sense, conducting this research was a big learning process which potentially brought on latent biases. As such the comparison of data from the two cohorts also acted as a verifier for themes generation both on contextual and analytical levels. I kept an audit trail from the interview data to themes through the thematic mapping process and the interview data coding table (appendix 7). I also kept a reflective journal throughout the recruitment and data analysis process in order to increase transparency of my preconceptions and biases in the research, and to explore the impact of critical self-reflection on research design (see journal extract in Appendix 9). In

addition I have included a personal reflection on my influence on the research process later on in this thesis based on notes I made in my reflective journal and professional skills log over the duration of the research process.

Future Research

In future, it would be interesting to confirm the findings of this qualitative work on a larger scale, by perhaps conducting similar interviews in various sites to see if participants' narratives present similar experiences of aftercare and psychological adjustment following weight loss surgery. It would also be useful to test the feasibility of implementing psychological support against usual aftercare to assess the impact on patient outcomes. I also feel there is a need to conduct more exploratory work in the realm of existing peer support groups. Specifically, it would be valuable to evaluate their impact on attendees and the effect they have on individuals' weight loss maintenance. Lastly, in an effort to progressively build bridges between primary and secondary care regarding weight loss surgery aftercare as recommended by relevant working groups (Millar, 2004; Hughes, 2015) it would be useful to conduct a qualitative study in primary care to find out their experience of caring for people after they have had weight loss surgery, how they think they could contribute to this shared care model and perceived challenges in this regard (Pryke et al, 2015).

Conclusions

Overall, in response to the research question posited in Chapter 1, the physiological approach of weight loss surgery as an obesity treatment followed by the current physiological outcome measures do not seem to sufficiently address underlying behavioural conditions that cause overeating and result in weight gain. This study has also revealed a need for more established psychology support during the post-surgery period and beyond irrespective of weight loss. There are key issues, such as body image readjustment and impact of excess skin that need addressing from a psychological point of view. Moreover, this patient group may require peer support following their procedure for more informal day to day advice, in conjunction with health professional contact from the service for reassurance when going through the unique set of health changes elicited by the surgery.

Amongst the themes that have come through in this research, the overarching issue seems to be postsurgical cliffs in patient care that follow the acute delivery of weight loss surgery as a treatment for obesity. Obesity is a chronic health condition that requires long term management, therefore the acute delivery of the surgical treatment leaves some latent patient

needs unaddressed. The key question here is how this surgical treatment can be delivered more effectively without overburdening an already poorly resourced service and simultaneously neglecting patients. Sharing the management of this patient group with primary care may be a solution. Underpinning this tension maybe a general lack of theoretically based interventions, or the generally limited theory development that seems to underpin many of the themes found. Therefore data from this qualitative study contributes to theory development by pointing to the need to understand obesity in a longer term timeframe, covering not only how it develops and why but also how surgery may be the start of how to address behaviour change.

Both health professional and patient cohorts agree that weight loss surgery, like diet, physical activity and drugs is a tool that facilitates weight loss and is not effective as a standalone intervention in the long term. As highlighted in the recent Tier 3 commissioning guide (British Obesity & Metabolic Surgery Society, 2014) there is a need to understand the patient experience including quality-adjusted life years along a trajectory. They explicitly suggest focusing on specific postoperative timeframes i.e. the first 2 post-operative years, 2-5 years, and 5 years in terms of weight, body image, mood, weight management strategies used, functional change, impact on close relationships and change within the family. Hopefully this qualitative work has shed light on these various aspects along part of the trajectory. Moreover, these components reflect a biopsychosocial treatment approach which conveniently aligns to the skill set of health psychologists' to design and implement effective interventions alongside other health professionals who work in this area.

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CHAPTER 5 – PERSONAL REFLECTION

According to Kolb, learning is the process whereby knowledge is created through the transformation of experience where the knowledge results from the combination of grasping and transforming experience (Kolb, 1984). Beyond its definition this four stage cyclical theory of learning offers a holistic perspective that combines experience, perception, cognition and behaviour. Specifically Kolb states that in order to gain genuine knowledge from an experience, the learner must be willing to be actively involved in the experience (concrete experience), be able to reflect on the experience (reflection), employ analytical skills to conceptualize the experience (abstract conceptualisation), and possess decision making and problem solving skills in order to use the new ideas gained from the experience (active experimentation). All this knowledge acquisition may happen in a flash, or over many years, depending on the topic and accounting for influences from personal, social and environmental experiences (Seaman & Rheingold, 2013; Merriam et al, 2007). In light of this theory I intend to reflect on my experience and knowledge gained as I completed the research component of my Professional Doctorate in Health Psychology and how this process has impacted on my personal development as a trainee health psychologist.

The idea to conduct research in the area of weight loss surgery actually started years ago when I was doing my health psychology master's degree. Unfortunately our gatekeeper who was going to be instrumental at getting us into the service backed out at the last minute. As a result after discussing with my supervisor I came to realise that the project was not feasible given the timeline of the course. So when the opportunity came to think of a research topic for my doctorate, I did not struggle and was quite clear on what I wanted to do. At times the best ideas in life are those that initially buckle, require subsequent hours of ruminating and modification to form a (hopefully better) second version. In addition, I must say out of all the doctorate modules the research module was the one I was most comfortable with because I essentially worked as a researcher. So I was very confident with the process of setting up and conducting research within NHS settings.

I started working on research project very early on in my doctorate. A few months into my first year of the course I had already met with a psychologist at an NHS hospital who worked in weight loss surgery to discuss how psychology fed into the service (see Appendix 2) Her insight was so helpful as it helped to shape both my systematic review and forthcoming research study. By the end of my first year I had nearly completed my systematic review and had a pretty solid idea of the type of study I would conduct. Moreover presenting my idea to

the rest of the doctorate cohort was so helpful because their feedback showed me that the proposal was of potential use within health psychology (see Appendix 11).

Looking back over this time the research process went fairly smooth. However I did hit a few challenges along the way. For example, after December 2013, my project took a backseat most of the second year as I was focusing on the other modules. When I decided to touch base with the psychologist in June to update her on my systematic review findings and my research proposal, I discovered that she was away on maternity leave. This caused a brief moment of panic but fortunately this was quickly alleviated by an email from the service lead who advised I talk to her replacement instead. Meeting her proved to be another fruitful event as she subsequently became my principal investigator and a great resource when it came to accessing potential participants (see Appendix 13 - reflections dated 23/6/14 & 21/7/14). In this case I learnt that forward planning is resourceful. By meeting the first psychologist, I had become known to the psychology team through her feedback to them and they were actually anticipating me conducting research in their service. However even though the service was generally receptive about my research there was one consultant running an ongoing trial who was not keen with me running the study alongside his as he worried I would affect his recruitment targets. Again Emma proved instrumental as she advised me on how to deal with this complex situation, and pitched my study to the team, particularly this consultant, which lessened his anxieties. When I reflect on this I doubt my project would have progressed without her input on this matter (Appendix 13 - reflections dated 21/7/14).

By 31st January 2015 I had received both research ethics and research & development approvals and was all set to start recruiting to my study. I sent my first patient invitations in March and also spent that day shadowing health professionals in the service to get more insight into how things worked on the ground (see reflection dated 2/3/15). Overall doing interviews with this patient group was a great experience. They were so approachable and very happy that I was doing this work. More importantly they were very interested to know in why I personally wanted to do research in this area. I felt telling my personal account of my interest in this area gave me a strong sense of ownership and accountability to do this work some justice. I tried to make notes of pertinent things after an interview to reflect on the appropriateness of the questions and prompts on the interview schedules (Appendix 9 and Appendix 13 see reflection dated 31/3/15). I used this process to improve my interview conduct on an ongoing basis.

Finally going through the doctorate has improved how I relate to people especially within the client-practitioner relationship. For example I have worked extensively on a post-traumatic

stress registry project conducting clinic assessments with over 150 patients with trauma. Through this work I have learnt to be more composed whilst observing someone's distress and allows me to be not just a therapist but a genuine support to the clients. I feel this improvement really helped me when doing the interviews for my study because this experience has made me more introspective particularly through challenging accounts. I feel more able to deal with challenging scenarios because I can manage my emotional reactivity better within and after sessions. Plus I approach clients humbly and respectfully as individuals, valuing the knowledge they bring to their session. Looking back on this experience I have learnt that to be an effective psychological practitioner like a health psychologist, frequent and honest self-evaluation is important as who you are influences how you react, see and approach various scenarios although changeable over time. This increased self-awareness will better inform you to set effective professional and personal boundaries as you seek to help others through their complexities.

One big challenge for me during the research process was the data analysis. Transcribing the recorded data all on my own was very useful as it really brought me close to people's experiences and the meaning behind their language. However when it came to synthesising the data into cohesive themes that made sense to those outside of this bubble I began to get lost in the structural linguistics of the service. It was a struggling balancing how to relay the data from both patients' and health professionals' perspectives as I felt they were coming to the research process from different places. I particularly found the process of talking through my themes with my supervisors invaluable as it helped tease out this challenging process.

I think the fact that I brought nothing to the process of data collection and analysis because I had no clinical experience in bariatric surgery or weight management in any way was a positive thing. I feel it helped me to go into the environment with an open mind, and no preconceptions about what the participants should say. In a way they were the experts and I was naturally there to listen and learn about how weight loss surgery impacts people's lives. I also saw first-hand the passion and efforts of health professionals in this environment despite the resource limited setting.

Personally I am proud of how I conducted this work and how I continued to push through despite the many instances of writer's block. However it has been tough and I am left utterly exhausted and unsure of whether I will feel normal again. I have again reaffirmed that I am not a qualitative researcher. I really struggled with the analysis and style of writing but I gave it a go and appreciate its significance in this piece of work. Going forward one big change I

will make personally is to reflect on my achievements more so that I can take in what worked well and use those key lessons for my professional practice in future.

References

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Merriam SB, Caffarella RS & Baumgartner LM (2007) *Learning in adulthood: a comprehensive guide*. San Francisco: John Wiley & Sons, Inc

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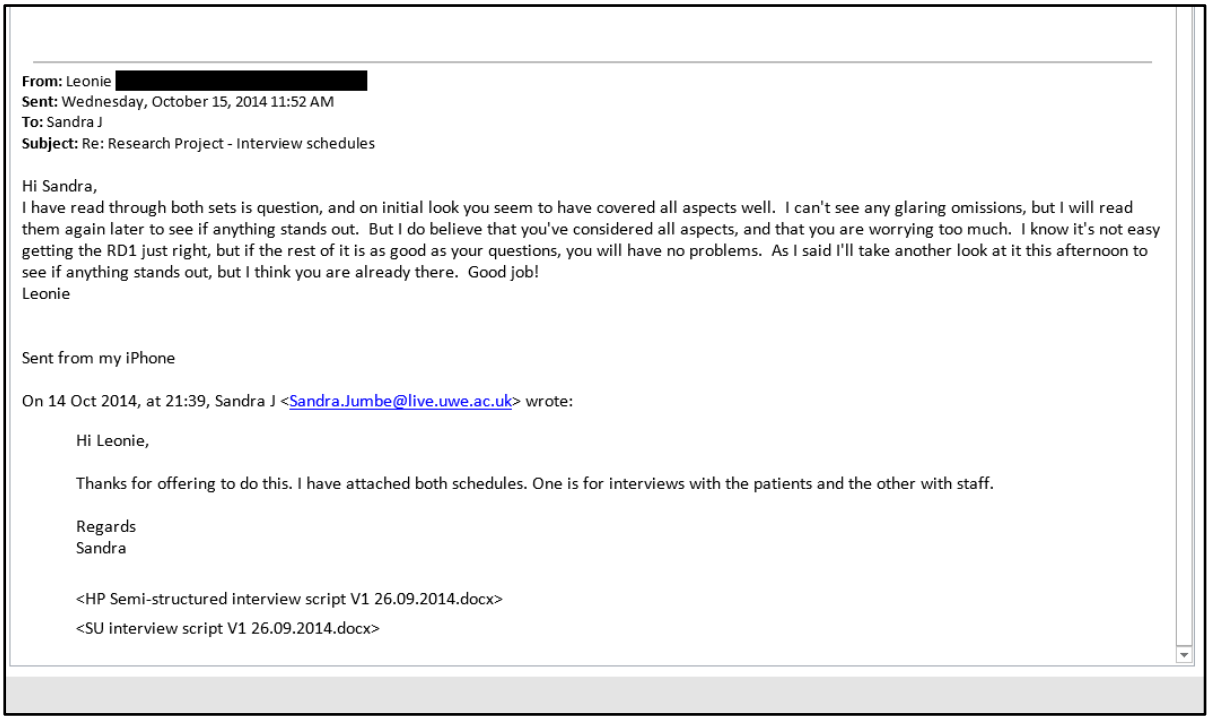
Appendices

Appendix 1 – PPI work: feedback from patient representative



From: Leonie [redacted]
Sent: Wednesday, October 15, 2014 11:52 AM
To: Sandra J
Subject: Re: Research Project - Interview schedules

Hi Sandra,
I have read through both sets is question, and on initial look you seem to have covered all aspects well. I can't see any glaring omissions, but I will read them again later to see if anything stands out. But I do believe that you've considered all aspects, and that you are worrying too much. I know it's not easy getting the RD1 just right, but if the rest of it is as good as your questions, you will have no problems. As I said I'll take another look at it this afternoon to see if anything stands out, but I think you are already there. Good job!
Leonie

Sent from my iPhone

On 14 Oct 2014, at 21:39, Sandra J <Sandra.Jumbe@live.uwe.ac.uk> wrote:

> Hi Leonie,
>
> Thanks for offering to do this. I have attached both schedules. One is for interviews with the patients and the other with staff.
>
> Regards
> Sandra
>
> <HP Semi-structured interview script V1 26.09.2014.docx>
> <SU interview script V1 26.09.2014.docx>

Appendix 2 – PPI work: notes from meetings with 2 psychologists

Date: 9th May 2013

Research Meeting Minutes (with Dr [redacted])

Introduced each other. Dr [redacted] went into detail about her role as a counselling psychologist within the bariatric service at Southmead Hospital. Her role is split between North Bristol NHS Trust (3 days) and Taunton/Exeter (2 days). Exeter appears to have a more well established service as it has been around for longer and has more funding than the Bristol service. The Taunton Service is the gold standard.

NHS Obesity treatment for adults is run as group programmes where 5 topics are covered. Individual work is done pre and post surgery however this is limited due to funding. It is therefore assessed on a case to case basis.

The general NHS Bariatric and Weight service is structured as follows

Tier 1 – Specialist Weight Nurse Intervention

Tier 2 – Dietician led service

Tier 3 – Specialist Weight Management Service

Tier 4 – straight to surgery

The Bristol area is currently funded at Tier 4, the Wiltshire area is at Tier 3 but it is also covered by Bristol NBT. A 'Traffic Light Criteria' is used to flag people to the right tier.

1. SJ asked how much input post surgery treatment involved.

EK said this normally involved 4 sessions.

2. SJ asked what EK feels is needed or lacking for the Bristol NBT service.

There is a need for Tier 3 Service. This increases patient efficacy to lose and maintain weight loss in the long term and makes them more prepared for bariatric surgery.

3. SJ asked what work is going on that is good in the service.

There is a Tier 2 pilot group running currently but this is not for people on the waiting list for surgery. This is solely Dietician led. Integration of this work into Tier 4 would be good.

There are self management groups

There is a PhD student (Rosie Aldom Cooper) who comes in on a Tuesday afternoon to help with some of the groups. Not very sure what she is doing exactly. There is also some research work being done by Dr Andrew Johnson and Marriane Morris. Again not sure what has come out of this but it has been going on for a long time so maybe contact Maz for information.

4. EK updated SJ on general work and literature on the area to read around.

Look into social identity theory and how it is used in weight management and weight loss surgery

There is also research looking at alcohol/ impulsive behaviours post surgery as coping strategies

Mini binge eating post surgery as compensatory behaviours

Look into 'Shared Decision Making'

There are recent care commissioning guidelines that have been published

Watch the 'One Minute Rule' YouTube video by O'Brien

Keep up to date with the ByBand study run by Taunton & Southampton

Join a specialist interest/research group

Read the AOS website

5. We agreed that SJ should focus on completing her systematic review and see what comes out of this. Incorporate this with the resources above to inform SJ's research proposal and direction of doctorate research project. Aim to catch up in 8 months or a year.

Date: 23rd June 2014

Research Meeting Minutes (with Dr [redacted])

Brief Agenda

Introductions

Go through research proposal

Recruitment methods and process

Ethics and R&D applications

1. **Introductions**

EL introduced herself as the new Bariatric Service Psychology Lead at Southmead Hospital who was currently covering for Dr [redacted]'s maternity leave. She has been working in the service for 3 years now after having completed her Clinical Psychology Doctorate. She was very keen to partner with me on this research project as she feels it is very relevant. Also having gone through the process quite recently of completing a doctorate research project she feels she would be the right person to mentor and support me through the process in addition to my academic supervisors. I briefly told her my background, interests, my current job and why I am interested in weight management (specifically obesity).

I did tell her that I had never actually worked with this patient group. EL provided reassurance and said she could arrange for me to shadow various clinics in the service nearer to starting and during the study to get used to the patient group.

2. **Go through research proposal**

EL had read through my research proposal and shared the following suggestions;

- The lower boundary for a healthy BMI according to her working knowledge was now 20. She was aware that previous literature stated 18-24 but 18 can be quite low. Anyway this was just something to think about and look out for
- In my introduction I briefly describe how the gastric band works at reducing food intake. There is however new literature on the 'sweet spot'. This is where the food hitting the band at the top of the stomach is believed to suppress appetite. Google 'mechanism of gastric band' or 'sweet spot' for more information.
- Regarding socioeconomic status, even though the suggestion is that more deprived places are at higher risk of obesity, the problem of obesity is still across the board
- Assessing psychological outcomes before and after surgery is a brilliant idea which specialists in the area know is vital. But still at the moment the focus in pre-surgery work is still on weight loss. But EL feels it should focus more on emotions.

3. **Recruitment methods and process**

Potential participants – EL has already sent an email to administrators do to a search on numbers for potential participants. She will let me know once she hears back from them. She also thinks getting access to staff for interviews should be fairly straight forward. In terms of numbers I can anticipate the following; 1 nurse specialist, 2 dieticians, 2 consultants, 2 surgeons, 2/3 psychologists

Key questions – we discussed the best questions to ask in order to get the information required to answer the research question. EL suggested the following key questions to be included in the interview schedule

- What support they have received
- Put emphasis on capturing the 'before and after'
- Was the support enough?
- Expectations met?

EL asked about progress of other study documents i.e. the invitation letter to send to patients, information sheets, consent forms, etc. I advised that I had not done these yet as I was still trying to finalise my proposal and register my research project at UWE. I would get these done soon as possible. EL is happy to read over documents and provide feedback if needed.

EL also questioned whether I would need access to patients' notes for certain measures e.g. weight? At the moment I don't think it is necessary but info is there if need be. It can be pulled quite easily via the service database.

The question of storing general research data was raised by EL. If we decided to use the hospital for secure storage, EL happy to keep signed consent forms, recorders and transcripts in her office locked cabinet. We can clarify this later on

Recruitment process – EL suggested that letters should be sent from NBT on my behalf then sent back to NBT/or directly to self. Whatever is quicker/more convenient/ ethical OR phone people for a higher response rate. EL suggest I query this with Ethics

4. **Ethics and R&D applications**

EL suggested I think of getting this done as soon as possible as these can be lengthy processes. R&D team at NBT are very good and helpful. EL is happy to provide support and feedback with study documents and completing forms.

5. **Any other points**

EL happy to act as clinical supervisor over the study duration. EL running a WLS talk/group work on 17th July. This is a 2 hour session in Chippenham. If available, SJ to attend

Information Resources suggested by EL:

- Bandits support groups
- BOMS conferences
- Alegan (dry company) for free conferences
- www.futurelearn.com provide free courses on obesity

SJ to send EL a copy of the systematic review

Keep in touch via email and maybe face to face monthly meetings if needed.

Appendix 3 – Patient invitation letter and reply slip

[Insert Date]

Dear

RE: Life after Weight Loss Surgery

I am writing to you to let you know about the above research study which is looking at patients' experiences and health professionals' views of life after weight loss surgery. This research study is being run by the University of the West of England and people from your NHS Trust are being recruited to it. We are inviting people like yourself who have had weight loss surgery at least 12 months ago, to be given the opportunity to join this study.

Research suggests weight loss surgery is a clinically effective intervention for weight loss and physical health improvements. However, impacts on psychological and social wellbeing are unclear. We would like to interview people who have had weight loss surgery to explore their experiences of life after weight loss surgery and discuss perceived benefits as well as limitations of the procedure.

The researchers running this study are therefore asking for your help. The enclosed Participant Information Sheet gives more information about this. If you would be interested in taking part in this study, please return the enclosed reply slip in the prepaid envelope provided or contact the researcher by email on sandra.jumbe@live.uwe.ac.uk or telephone 07973 466694. The study team are very happy to answer any questions you may have.

You should feel under no pressure to take part in this research if you do not want to. If you do take part, you will be free to withdraw at any time without giving a reason. This will not affect the standard of care you receive.

Thank you for your time, and we look forward to your reply.

Yours sincerely

Sandra Jumbe

Life After Weight Loss Surgery – Participant Invitation Letter (Version 2, 15th December 2014)

Life After Weight Loss Surgery

Please complete the form below and return in the enclosed prepaid envelope to the Study Research Team at the following address:

Sandra Jumbe, C/O Dr Jane Meyrick,
Department of Psychology, University of the West of England, Bristol BS16 1QY

OR

Contact the study researcher directly with your response using the details below:
Telephone: 07973 466 694
Email: sandra.jumbe@live.uwe.ac.uk

Would you be interested in taking part in this research study?

YES	☐
NO	☐
Not at this time but would consider in the future	☐

If YES, kindly complete the information below so that the researcher can contact you

Name: ……

Address: ……

……

Home Tel No: …… Mobile Tel No: ……

Preferred contact time: ……

Email address: ……

Comments: ……

……

……

Life After Weight Loss Surgery – Patient Reply slip (Version 1, 4th September 2014)

Appendix 4 – Participant information sheets and consent forms

Patient cohort Information Sheet (printed as booklet)

We would like to invite you to take part in this study. Before you decide, we would like to explain why we are carrying out this research and what it would involve for you. Please take time to read this information sheet and discuss with family and friends.

What is the purpose of the study?
The purpose of this study is to gain an understanding of the long term lived experiences of people who have undergone weight loss surgery. Current research suggests weight loss surgery is a clinically effective intervention for weight loss and physical health improvements. However, impacts on psychological and social wellbeing are unclear. At present, there is also a clear shortage of research examining patients' perspectives in this area. We would therefore like to interview individuals to explore their experiences of life after weight loss surgery and discuss perceived benefits as well as limitations of the procedure. We believe this information will be vital as it will provide health professionals information on whether patients feel psychological care is needed after weight loss surgery and, if so, specifically what kind of care.

Why have I been invited?
We are asking adults who have had weight loss surgery between 1 and 10 years ago to take part in the study. We are looking to interview 10 individuals for this study.

Do I have to take part?
It is entirely up to you if you would like to participate in the study. You do not have to take part and you will be able to withdraw any time without giving a reason. This would not affect the standard of care you receive.

What will happen to me if I take part?
If you agree to take part, you will be asked to sign a consent form, and take part in a research interview with the study researcher. The interview will take place at an NHS clinic, the University or by telephone if that is more convenient for you. During this interview, you will be asked to talk about your experience of weight loss surgery in relation to psychological wellbeing. The interview will take approximately 40 minutes. After the interview the researcher will debrief you about the study. This interview will be recorded and later transcribed by the researcher. A copy of the interview transcript will be sent to you for your information.

Will my taking part in this study be kept confidential?
All information collected about you during the study interview will be used only for research purposes. However, if you disclose information that could potentially cause harm to you or others, we may have to break confidentiality and inform a third party. The research team will not have access to your medical notes. The interview data will not have your name on it. Each participant will be assigned a unique identification number for use on study documents and electronic records.

All recordings, interview transcripts and participants' data will be held securely in locked cabinets on NHS or University premises. Research data stored on NHS or University computers or laptops will be password protected and encrypted as appropriate. The research team will only have access to your personal contact details following your informed consent for the sake of communication whilst taking part in the study.

In accordance with the University's guidance on research data management, data and documents generated from this study will be stored for six years after study completion.

What will happen to the results of the research study?
Study results will be written up for publication and presented at conferences. Study findings that are published will not include any identifiable material. A short report of the results will also be written up and sent to all participants involved.

Risks and Benefits
Many people report feeling positive after taking part in this type of research. People find it useful to share their experiences and talk through any difficulties they are having. It can help people see things more clearly. We will provide advice and support during the interview if needed. We cannot promise the study will help you but we do hope the information we

Version 2, date: 15/12/2014

get will help improve the treatment people get after having weight loss surgery.

We do not anticipate any risk in taking part in this research. If you do become distressed during or after the research, the person doing the interview will support you. You can take a break or stop the interview altogether. You can withdraw at any time. You can also seek further support by contacting the following weight loss surgery support organisations:

1. Weight Loss Surgery Info (WLSInfo)
   Helpline number: 0151 222 4737
   Website: http://www.wlsinfo.org.uk/
2. British Obesity Surgery Patients Association (BOSPA)
   Website: http://www.bospauk.org/
3. Obesity Weight Loss Surgery Support (OWLSS)
   Website: http://owlss.org.uk/

More information and contact details
If you would like more information about this study or have any queries, please contact Sandra Jumbe:
Tel: 07973 466694
Email: sandra.jumbe@live.uwe.ac.uk

Further information is also available from the study supervisor:
Name: Dr Jane Meyrick
Email: jane.meyrick@uwe.ac.uk

If you decide you would like to take part, please read and sign the consent form.

Thank you for taking the time to read this information sheet

University of the West of England
BRISTOL

Life after Weight Loss Surgery:
Patients' Views on Health Outcomes and Psychological Care

Version 2, date: 15/12/2014

Health Professionals cohort Information Sheet (printed as booklet)

We would like to invite you to take part in this study. Before you decide, we would like to explain why we are carrying out this research and what it would involve for you. Please take time to read this information sheet.

What is the purpose of the study?
The purpose of this study is to gain an understanding of the long term lived experiences of people who have undergone weight loss surgery. Current research suggests weight loss surgery is a clinically effective intervention for weight loss and physical health improvements. However, the impact on psychological and social wellbeing is unclear. At present, there is also a shortage of research examining the views of health professionals working in this area. We would therefore like to interview health professionals to explore their opinions of patients' lives after having weight loss surgery, with a specific focus on long term psychological health outcomes. We believe this information will be vital as it will provide information on whether health professionals feel psychological care is needed after weight loss surgery and, if so, specifically what kind of care.

Why have I been invited?
We are asking health professionals who work with patients who have had weight loss surgery to take part in the study. We are looking to interview 10 individuals for this study.

Do I have to take part?
It is entirely up to you if you would like to participate in the study and you will be able to withdraw any time without giving a reason.

What will happen to me if I take part?
If you agree to take part, you will be asked to sign a consent form, and take part in a research interview with the study researcher. The interview will take place at an NHS clinic, the University or by telephone if that is more convenient for you. The interview will take approximately 40 minutes. After the interview the researcher will debrief you about the study. This interview will be recorded and later transcribed by the researcher. A copy of your interview transcript will be sent to you for your information.

Will my taking part in this study be kept confidential?
All information collected about you during the study interview will be used only for research purposes. However, if you disclose information that could potentially cause harm to you or others, we may have to break confidentiality and inform a third party. The research team will not have access to your medical records. The interview data will not have your name on it. Each participant will be assigned a unique identification number for use on study documents and electronic records.

All recordings, interview transcripts and participants' data will be held securely in locked cabinets on NHS or University premises. Research data stored on NHS or University computers or laptops will be password protected and encrypted as appropriate. The research team will only have access to your personal contact details following your informed consent for the sake of communication whilst taking part on the study.

In accordance with the University's guidance on research data management, data and documents generated from this study will be stored for six years after study completion.

What will happen to the results of the research study?
Study results will be written up for publication and presented at conferences. Study findings that are published will not include any identifiable material. A short report of the results will also be written u and sent to all participants involved.

Risks and Benefits
Many people report feeling positive after taking part in this type of research. People find it useful to share their experiences and talk through any difficulties they are having. It can help people see things more clearly. We will provide advice and support during the interview if needed. We cannot promise the study will help you but we do hope the information we get will help improve the treatment people get after having weight loss surgery.

Version 2, date: 15/12/2014

We do not anticipate any risk in taking part in this research. If you have any concerns about any aspects of the research, please inform the researcher during the interview or afterwards using the above contact details. However you can seek further support by contacting the following organisations:

Advice & Complaints Team (ACT)
Beaufort House,
Beaufort Way,
Southmead Hospital,
Southmead,
Bristol BS10 5NB
Tel: 0117 323 3741 Email: complaints@nbt.nhs.uk

ICAS (Independent Complaints Advocacy Service)
Tel: 0845 120 3782 Website: www.seap.org.uk/icas

More information and contact details
If you would like more information about this study or have any queries, please contact Sandra Jumbe:
Tel: 07973 466694
Email: sandra.jumbe@live.uwe.ac.uk

Further information is also available from the study supervisor:
Name: Dr Jane Meyrick
Email: jane.meyrick@uwe.ac.uk

If you decide you would like to take part, please read and sign the consent form.

Thank you for taking the time to read this information sheet

University of the West of England
BRISTOL

Life after Weight Loss Surgery:
Health Professionals' Views on Health Outcomes and Psychological Care

Version 2, date: 15/12/2014

Consent form for all participants

University of the West of England
BRISTOL

Life after Weight Loss Surgery – a qualitative study

CONSENT FORM

Please initial box

I have read the information (version _____) about the study. I understand what the study is about and have had the chance to ask questions.	☐
I understand that it is my choice about whether I take part in the study or not and that it is okay to withdraw at any time.	☐
I agree to be interviewed by the researcher about weight loss surgery.	☐
I agree to my interview being audio recorded	☐
I understand that the interview and transcripts may be listened to or looked at by the research supervisors to ensure the researcher is conducting the research according to ethical guidelines and good practice guidelines.	☐
I understand that relevant sections of my medical notes and data collected during the study may be looked at by individuals from The University of the West of England, 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.	☐

Your Name:	
Your Signature:	
Today's Date:	

Researcher's Name:	
Researcher's Signature:	
Today's Date:	

Version 2 Date: 15/12/2014

Appendix 5 – study poster

University of the West of England
BRISTOL

Have you had Weight Loss Surgery between one and ten years ago?

Would you like to share your experience with others?

If your answer to the above questions is YES, and if you are aged 18 years old or above, then you might be eligible for our research study.

Life after Weight Loss Surgery

The research study is looking to explore people's experiences of life after weight loss surgery and discuss perceived benefits as well as limitations of the procedure. If you are eligible and agree to take part, you will be asked to complete a research interview with the study researcher.

For more information please contact:

Name: Sandra Jumbe
Tel: 07973 466694
Email: sandra.jumbe@live.uwe.ac.uk

Appendix 6 - Demographic forms

Demographics

1. ABOUT YOU.... Please tick the box that best applies:

Age _____ Male ☐ Female ☐

Ethnic Background:

Indian	☐	Black – Caribbean	☐
Pakistani	☐	Black – other	☐
Chinese	☐	Mixed race	☐
Bangladeshi	☐	White - UK or Irish	☐
Asian – other	☐	White - other European	☐
Black – African	☐	White – other	☐

Education:

Doctorate/PhD	☐
Masters	☐
Postgraduate Diploma/Cert	☐
Degree	☐
Diploma or similar	☐

Employment status:

Employed (full time)	☐
Employed (part time)	☐
Self employed	☐
Unemployed	☐
Retired	☐
Other	☐

Type of Weight Loss Surgery: _____

Length of time since having weight loss surgery:

1-3 years ☐ 4-6 years ☐ 7-9 years ☐ 10+ years ☐

HP Demographics

1. ABOUT YOU.... **Please tick the box that best applies:**

Age _____ Male ☐ Female ☐

Ethnic Background:

Indian	☐	Black – Caribbean	☐
Pakistani	☐	Black – other	☐
Chinese	☐	Mixed race	☐
Bangladeshi	☐	White - UK or Irish	☐
Asian – other	☐	White - other European	☐
Black – African	☐	White – other	☐

Profession/discipline:

Surgeon	☐
Dietician	☐
Nurse Specialist	☐
Occupational Therapist	☐
Physiotherapist	☐
Psychologist	☐
Psychiatrist	☐
Other	☐

Education:

Doctorate/PhD	☐
Masters	☐
Postgraduate Diploma/Cert	☐
Degree	☐
Diploma or similar	☐

Length of time working in weight loss surgery services:

Less than 1 year ☐ 1-3 years ☐ 4-6 years ☐ 7-9 years ☐ 10+ years ☐

Thank you.

Appendix 7 – Interview data coding table

Patient Interviews	
Codes	**Quotes**
Pre-surgery experience	
Very good pre-surgery work	'I had a lot of prep appointments. I think every other month. I think I've been down 6 times to different people which was good' 6 'They do grill you so I did struggle with that a bit but in hindsight now I'm glad that I did have that because it could have been the completely wrong thing for me. You know. They had to give me a bit of a hard time [laughs] I wasn't very good at first. My dietician was a bit like 'ooh' and I wasn't really feeling like it was going to happen. I was a bit sort of 'hmmm' but everyone was really supportive and I was very lucky ' 8
HP role confusion for patients	'I'd seen the surgeon and I'd seen the dietician and I had seen somebody else who talked to me. I wasn't sure whether she was a psychologist but we talked about my food and how I felt and everything' 1 'I know it sounds a bit silly really cause I could have asked but I found because I'd seen so many different people I got confused as to who's role was who's' 1
HPs as 'specialists'	'I saw a guy who was an endocrinologist. Aside from looking at your diet he was a diabetic specialist' 1
Lack of knowledge in primary care	'I think the GP surgery haven't really had anyone who's had the surgery before me so there was no knowledge in the GP, really practical knowledge and the surgeon was long gone and moved on to bigger and better things' 4
Disjointed pre-surgery support	'a bit disjointed really because I started in #. I was under a consultant there but I only saw her at the beginning and then I was sort of put to this dietician and she was not helpful...not encouraging and supporting. So I was actually pleased to be passed over to #' 4
'Acceptance' for surgery	'He said ''If I was to say to you now I am not going to put you forward to have the gastric band, what would your reaction be?'' And I said to him ''well, if you're not going to put me forward, I don't see what else I can do really''. Then he turned round and said ''That's a good answer. I'm going to put you forward'' ' 1
Accessing WLS is a long process	'So for a year and a half talking to people in Bath and then I had to be referred to the people in [redacted]. Then that took another year after that so it was a really long process for me before I got it' 4
Shared decision making? unless risk is high	'I was talking to the doctor and we both decided that I should go for weight loss surgery' 3 'I didn't actually know what I had had and they said because there was too much scar tissue where I had had an emergency Caesarean it was difficult to do the bypass so therefore they did the sleeve' 7 'it was my choice. If I remember rightly, they kid of said ''well what do you think is rigth for you? and I knew somebody that had had the sleeve years before and was doing wonderfully. I researched about it'' 8 'I felt it was the right one for me' 8
Process of choosing procedure is complex	'I was thinking about having a gastric band but everybody I've spoken to said oh no no no, don't do that. And the private doctor went 'absolute rubbish. If you want it I'd be 100% behind you'. So he was the first person that actually showed some support towards it and that sort of geared me up to go back to my GP and ask for a referral' 6 'I was actually wanting the gastric bypass but my surgeon told me all about the options that I had because she said if there wasn't the possibility of having the bypass, and they didn't discuss any of the other things with me, they wouldn't be able to do it' 7

More info needed on post-surgery real life consequences	'There' people with diabetes who I know stopped taking their insulin ...so they can lose weight. So you know as I said it sounds like a quick fix but then the next month they're going to be ill. Things like that, and I feel people need more information. Much more information is needed, I think that's what it is' 3
Unprepared for initial psych assessment by diabetes consultant	'he was a diabetic specialist but for some reason he did a psychological test on me which I wasn't expecting. They didn't prepare me. I thought they were going to talk to me about my diabetic condition' 1
Lots of pre-surgery support	'So, it took me 2 years, obviously coming back ad forth back to [redacted], but you know the members of staff, dieticians and all, they were absolutely brilliant. They've given me loads of support leading up to the surgery' 7
Regular dietician contact pre-surgery very good	'you know the members of staff, dieticians and all, they were absolutely brilliant. They've given me loads of support leading up to the surgery. So yeah, they were really really good' 7
Length of pre-surgery work allows mind to prepare	'The 12 months I had to wait I think is the right amount of time because even though I would have liked to go ahead with it sooner it took me that long to get my head around what was going to happen if I'm honest' 6
Excellent psychology pre-surgery work	'the psychology stuff was individual cause obviously they have to prepare your mind to make sure you're alright for the procedure and whether you'd agree with it or visa versa. And it was excellent, I can't fault it' 3
Always been overweight	'I've always struggled with my weight and have always been quite chunky' 3 'So I've been overweight most of my life. So from various categories, from being overweight to severely overweight really from middle childhood' 5
Surgery as 'point of death' solution	'I went to see my doctor and we spoke about it and she said right now you've got to that stage where it's difficult to do it on your own and at that point I just felt like I needed to do something because I really felt like I was going to die. It was really bad' 8
Couldn't lose weight	I've tried many things, weightwatchers, endless diets, various things over the years with initial success but then failure to keep the weight off' 5
Presence of health problems/ comorbidities	'He diagnosed me with severe sleep apnoea which was caused by the fact that I was so overweight and the fat that had built up around my neck practically suffocated me' 6 'I've got 2 crumbling discs which I've had for 30 odd years that absolutely kills and I thought the only way to help it actually is to lose weight' 7
Apprehension towards surgery	'I had a lot of apprehension about the whole thing and did a lot of reading to ensure I was doing the right thing' 5
Negative emotional state pre-surgery	'I have never been desperately happy with being fat' 5 'Pathetic, miserable, unhappy I was before' 6 'I was like just so sad and had quite suicidal kind of feelings. Just getting bigger, more ill and psychologically I think I've been through leaps and bounds a lot in the past' 8
WLS as a big decision	'it's quite difficult. You'll find people have loads of different opinions about it and my family weren't very comfortable with the sleeve for me but touch wood, it's been amazing for me so far' 8
Post-surgery experience	
Not enough aftercare support	'I feel like I have done it on my own … you do feel like they don't equip you enough really' 1 'I think, you know, the surgical team is great but the rest, I don't know what the rest of the team is' 5

	'I think I was actually quite surprised at how little there's been really cause one of the reasons we went NHS … was because we thought there wouldn't be much follow up privately' 5 'I was quite surprised at the lack of support and my mum and dad said the same... Surely I should have been called back in to check that things had healed properly or something but yeah, as I say, not really much more post op unless I ask for it' 6
Felt abandoned post-surgery	'afterwards I felt abandoned. A bit more aftercare would be better' 6 'See you feel as if you have the operation and then you're on your own' 9
Abrupt discharge	'I kind of felt like you had the band and then they basically pushed you out of the door and said get on with it' 1 'I actually stayed in overnight because I wasn't very well but you're normally discharged in the day. As soon as you're awake, it's bye then' 3 'predominantly it is like as soon as you have your operation, you wake up and they give you your cup of tea and off you go' 3
Lack of information at discharge	'it wasn't said that if you have any problems give us a ring. No contact number was provided...there was no straight route to them except by looking on the internet to find out how they refer people. That sort of thing' 5 'I suppose when I think back I felt deserted after the operation because I was sent home with all these tablets, these injections and I was never sort of shown how to do the injections' 6
Little communication	'I thought someone would have contacted me about some sort of follow up appointment and they said 'oh no. We sort of leave it to you. If you've got any problems you come to us otherwise we leave you to it. Which again I though hmmm' 6
Minimal /Hands off aftercare	'I had my first meeting with the aftercare people 6 weeks afterwards and since then I have seen the nurse twice for two fills. I haven't seen anyone else in between' 3
Big contrast to pre-surgery support	'So basically the support before you can't fault. It's a shame there isn't a bit more after' 3 'so the lead up to the operation was good. There was psychological counselling to make sure you didn't have anything that would circumvent the band or that that was the right option for you to go for, and getting other things sorted like sleep apnoea. So all that stuff sort of beforehand was good but afterwards, it seems to be very much that you're left on your own' 5 'Aftercare I think could be improved, definitely. The build up to operation I thought was excellent' 6
Dieticians very helpful	'Dietician wise, I had a contact number for a dietician so I could always contact her and she was always very helpful' 1 'the dietician team have been excellent, absolutely excellent' 4 '## has been so good actually. Really good. She is deserving of a gold star. She is very good' 4 'they've always been really good sort of thing, given me as much support as I need' 7
Lack of follow up can cause negative consequences	'I was hoping I would be a lot further than I am now. And I think quite possibly if there was more aftercare available, I think I would not have got to this stage now where I can't even eat or drink' 3
Misinformation around what to eat	'There's a lady in our town...she had the band a year before I did. Now she believes that if she puts fish and chips down her blender she can eat them. She was told that anything she puts down the blender she can eat' 3 'I eat celery, raw carrots, whatever that's going raw, I'll eat it. I like it raw and it's not until right before I was getting booked for the operation that I was told

	'you can't eat this, and you won't be able to eat that' and I thought they should have been telling you this months before...' 4
Unclear patient expectations of follow up process e.g. frequency, who to see	'I think that's the problem with having a gastric band. You didn't really know who you were going to see' 1 'I was expecting them to say here are your dietary restrictions, you can do this now, are you okay, you shouldn't have another fill within the next 3 to 6 months but I didn't get anything' 3 'I've lost tonnes of weight. I feel absolutely tonnes better but I think with the follow up I wasn't really sure what I should do if I had problems' 5
Long travel for short follow up appointments	'Once I had my first fill, I came by bus and it took me 3 hours to get here, 3 hours to get back home. The appointment was at 2 o' clock in the afternoon ...when I got in it took 2 to 3 minutes' 3
Patient relationship with HP type varied	'As I said I could call her (dietician) or email her when I wanted to so she was a lot more accessible' 1
Good info from dieticians	'I needed advice on what to do to get rid of the constipation with the band in. But yes, she was fine and gave me really good information' 1
Felt stupid/ confused by consultant	'I always felt like he was also trying to counsel me and I just didn't feel like he was the right person to do the counselling. He always made me feel [pause] I always felt a bit stupid when I came out' 1
Consultants as God like	'he was how I imagined a consultant to be, you know, sort of God like. I didn't feel I could challenge him' 1
Experiential support from peers wanted	'I think we need somebody who's possibly had the surgery, cause not even the doctors and nurses have had the surgery, who can explain it to somebody else. Who can sort of say ''No, it's not going to happen overnight'' and to really make it come across that this is not a cure' 3
Painful recovery	'it was absolute agony having to stand up let alone walking to the car... Literally I was crippled, just bent over, just practically trying to crawl to the car. It was so painful' 6 'Very early days after the operation, extremely painful. I never thought it would be that painful' 6
Disjointed information & access to help	'another thing you're not told before the operation, quite close to the operation is that 2 weeks running up to the operation all you can eat is yoghurt really...because you want to shrink your liver to give them better access to your stomach' 4 'I've lost loads of weight. I feel absolutely tonnes better but I think with the follow up I wasn't really sure what I should do if I had problems' 5
Surgeons good	'I saw the surgeon. She was the one who basically explained the different options, gastric band or bypass. She was great. She was just so matter of fact and down to earth. Didn't mince her words at all' 6
Minimal support from medics	'I think I got a 6 weekly check up with the surgeon and that was it really. That was the only time I have seen a surgeon' 4 'I've seen the surgeon I think it was about 3 months after I had it done. 6 months or 3 months after, I've seen her once but I haven't seen them since' 7
Confusion with roles within team for patients	'I saw a chap called ##, I don't know whether he was a dietician or a psychologist. I'm not sure what he was' 4
No psychology support	'as far as the hospital went there was no support from them at all. None at all' 7
Follow up on patient's onus	'If you want to see somebody you have to request it. It's not forthcoming' 3 'I haven't had any appointments arranged with those people since then except at my indication' 5

	'I think I actually instigated the appointment because I thought I should be more restricted than what I am so wanted to come in and talk to someone' 6
Much better QoL post-surgery	'it's great. I think it's very good' 5 'I was almost ashamed that I had to ask my 14 year old son to put socks on … uhm … and the first time I did that on the bed, I just literally sat there and cried. You know, it's little things like that … and it's just really good' 7
Disappointment from persisting comorbidities	'So at the moment I'm having ups and downs with my diabetes so I'm a bit disappointed with that cause I was hoping; they couldn't promise it cause everyone is different, but they did say that it might go into remission if I lost weight. So the diabetes isn't as good as I was hoping for' 1
Some unmet physical expectations	'Like the band is there and causing all these problems, so I'm trying to think the band isn't a diet aid anymore and just treating it as a foreign body as it's causing problems. So I have tried to get things done myself and keep more positive otherwise I think you can become very very depressed with it. Not to say I expected more results but I was expecting more from myself. I expected myself to do a lot better' 3
Life changing experience/results	'It's changed my life completely. I have never been happier than I am now' 1 'apart from having my son it is the best thing I've ever done in my life' 7 'it's been very positive like a new lease of life. All the people who've known me for years, old friends sometimes they don't even recognise me now. It is that drastic' 8
Much better health	'My health is just great. I never get ill anymore' 8 'I attack life with the same gusto that I attacked life with before so I don't really think that it's changed my outlook. It's probably made me much healthier I hope. I used to be on two lots of high blood pressure tablets and I've come off both of those so that's a good thing. That's a benefit to me and also the NHS as they are no longer having to supply that' 4 'I got my weight down. The benefit of that was that my back was so much better. I felt 10 years younger without a doubt' 9 'I still can't walk very far since the operation. I can still only walk very short distances without getting pain but it's an awful lot better than it was. I used to get shooting pains down my legs and it was really debilitating. That's definitely that has improved my quality of life much. It really has' 9 'Oh!!! I have my life back [laughs] I have a life!! I hit 60 this year but physically I mean from the day that I went in for surgery I have not taken any diabetic drug. My GP has now taken me off the diabetic register completely so I am no longer classed as diabetic' 10
Post op issues	'initially it was great because I was losing quite a lot of weight. Then about 10 months ago I started having problems regurgitating' 3 'it just doesn't go anywhere because my oesophagus just won't work. Eventually it does go down and I think it does go through the band. It's not like the band itself is not working' 3 'For the past year, I've been having problems with the band' 5 'I've sent he dietician a couple of times since when I've had real bad pains and having trouble getting my food down. They said to go on fluids for a couple of days and see if it passes, and I has' 6
Less comorbidities	'I had high blood pressure when I was at my heaviest and although I'm still taking blood pressure tablets the dose has just come right down now' 1 'I no longer have sleep apnoea. I don't use the sleep ap machine anymore. I don't need it anymore' 5
Increased mobility	'I can walk farther. I mean we go for long walks now whereas before I couldn't' 1

	'the weight loss is brilliant. Really good and I am much more active, much better, much more mobile and just having a great time taking on new activities, new hobbies and just much much much improved quality of life' 5 'I can walk and do walk 3 miles everyday which basically I would have been tired walking a few 100 yards before' 5
Massive weight loss	'the first year was great. I lost about 4 stone and obviously that helped me a lot' 3 'I've lost tonnes of weight since having it two years ago. I think I have lost altogether nearly 7 stone' 4
Hard to eat socially	'now it's very hard to eat socially. Things are very difficult' 5
Excess skin big post op problem	'If you take 7 stone out of someone there's gonna be droopy bits even if there weren't droopy bits before. They're even bigger the droopy bits now so I definitely need to do something about that now cause it's not making me feel nice at all' 4 'the thing is I look like and elephant from the back. You know when you look at the backside of an elephant there's an awful lot of dangling skin' 4
Fears of excess skin	'Negative is what I definitely tried to avoid and that's saggy skin. So, that's the reason, one of the reasons for going to the gym. Obviously to burn fat and speed up my metabolism but the other is to tone up as I lose weight. At the moment I'm doing okay. I haven't got anything hanging' 6
Excess skin affects intimacy	'The excess skin bothers me and it probably bothers my husband but it bothers me which then bothers us. I know I don't like it and it makes me feel unattractive' 4 'I must get something done about the skin cause that is affecting my relationship with my husband and that's not healthy long term' 4
Food obsession gone	'I was obsessed with food. The first thing I used to think of when I wake up in the morning was food. Food just played a big part in my life and now it doesn't.' 1
Change in spousal relationships	'with my partner now uhmm it's changed our relationship a lot, not necessarily in a positive way. He liked me before when I was big so he's kind of struggling that I'm changing. He feels a bit threatened' 8
No longer an outcast	'I feel as though I'm a proper person now whereas I didn't before. I can actually fit in' 6
Normal / treated normal now	'They treat me differently, like a normal person cause that's the worst thing about being fat. I think people don't treat you as being a normal person' 4
Still need to work hard to lose weight	'A lot of people don't know that you've got to work with it, people kind of expect it to just happen and it doesn't unfortunately... you've got to work hard at it as well' 3 'So it's hard to lose weight now. I don't think I could have continued without going to the slimming club. With the band alone I lost about 5 stone and then it started to creep back up again and I put a stone back on' 6
Weight maintenance still hard work	'I'm quite happy that the band has helped me lose the weight but I have certainly contributed to that process. It's not happened to me, it's happened with me' 5 'before I was quite restricted to the amount I can eat and the type of food, and all of a sudden It seemed to stop working. So I joined slimming world and that's kept me on track really for the last year but I still have got restriction' 6 I go to slimming world. I don't really follow the diet as such because I need to be careful about my nutrients but I use it to keep me on track' 8
Trying to keep stable	'I've knocked off 5 1/2 stone from my top weight and I mean I am still losing but it's definitely slowed down a lot. I'm really having to work at it which they did say you'd plateau after a certain amount of time' 8

Mental adjustment takes time	'I would be going down the road and I was almost expecting to still be treated that way...bigger. My head was weird. I can't really explain it to you but apparently it is quite common actually that your brain doesn't cope or catch up with the change' 8 Although I was changing and healthy I was quite wobbly but now I've accepted it.' 8 'initially I lost loads of weight and as I say because it happened so fast I don't know but the visual perception and the brain's vision of the self was really odd. Because I knew I was losing weight but when you look in the mirror you still see that fat person even when you're not and it takes time' 10 I used to walk past and think "Who the heck is that walking past with me" and not realise it was me because I was so used to seeing someone twice the size and as I say that that's something maybe that people pre surgery ought to be more aware of because it does take time' 10
Less conscious of social judgement	'I was always consciously wary, looking around all the time cause I felt people were looking at me. All the time, it was awful, horrible whereas now I don't have any of that. I don't care. I feel so good about myself I just think I don't care' 7 'I don't tend to worry now about other people's view of me or if they're looking at me. I'm just like whatever' 8
Struggle after first year post-surgery	'so at one stage I felt like you know, I have failed and I hadn't achieved much after the two years for quite a while. And it was quite hard to try and pick myself up again' 3 'the first year was really very good and very straight forward but last year has been a bit of an ordeal' 5
Not a smooth road	'losing weight has become harder because I have been having these problems with my band so in order to actually eat anything it means I eat some things that are not actually suitable' 5
Adjustment takes time	'It does take a year or 18 months to actually get used to what your body can take and what it won't' 6
A different person	'It's absolutely amazing and I'm a completely different person. You speak to any of my friends and family and they all say we literally thought you were going to die before you had the operation' 6
Treated differently	'they treat you as being a fat person and that's different. So I suppose I definitely think people treat me differently but I don't feel different' 4 'I am still 16 stone so still got a way to go but I definitely feel as though I am treated differently. People, in particular men, do give me the time of day now compared to before' 6
Happier person	'emotionally I'm much happier, much more confident, much more positive. I don't' know, every good word you could think of' 6
Not controlled by food	'it's very very difficult. It's that control thing of how much we eat, what we eat, what we buy what we don't buy, what we open what we don't open. So the whole thing you know but yeah, we're getting there [nervous laugh]' 7 'I don't overdo it and I know my limits and that's the best way. My brain knows when I'm full so I just need to ensure my stomach listens to my brain' 8
Not interested in food	'I am not controlled by food anymore. Sometimes I am not even interested in food. I can't believe I am saying that really because food used to be my life' 1

More outgoing	'I appeared to be outgoing on the outside but inside I was just dying, feeling people were judging me. They may not have been judging me but that is what I felt, what I was thinking whereas now I am a lot more confident' 1
Positive feelings	'I love the feeling of going down a size in clothes and things' 6 'I have felt a bit of a wobble sometimes but I'd say 95% I feel a lot more positive' 8
Better physical appearance influence positive feelings	'I mean I've always been a very positive person. Very sort of happy bubbly person but I think if you look better, you feel better' 7
Family relationships (better)	'my husband was worried so we do have a better relationship because I'm happier' 1
Family concerns & judgement before surgery	'it is a big operation and the risk of health and anaesthetic is obviously dangerous as well at that weight. So obviously once I had explained what I had learnt about it from my different appointments prior to surgery, my family care round and they were all for it in the end' 6 'when I first started going to the surgeons about gastric surgery and I was told that hopefully after having the operation I could lose all this weight, my mother I would have hoped would say I'm really proud of you, you know. But her attitude was "oh, I hope you lose all your weight " 7 'my son was worried obviously because I was going to be having major surgery and he thought I was gonna die' 7
Less judgement & worry from family	'my mum always was very judgemental. And now I've lost weight I feel I can cope with her better because she's not so judgemental now because she has seen that I have lost the weight' 1 'They are happier now that I am so much fitter and healthier cause obviously people who were closer to me were very concerned about my health originally' 6
Go out more socially	'I go out more socially. I go shopping with my friends which I just really enjoy...' 1
Friendships improved	'My relationships with my friends have improved' 1 'I'm finding I'm going out more with my friends. I'm very lucky that I've always had a very close friendship group. We've know each other since we were very little and I go out with them more now' 8
People are supportive	'I don't think I have lost friends or gained any really. People have been supportive' 5
Others' jealousy post surgery	'it can have a negative effect more on the wider family. Some people are very positive about it and can say 'wow Dee you're looking great' and then other people in a negative way. Like you start to look good if you start to put your makeup on and you're starting to put your heels on, that sort of thing and you got out feeling good. The confident is there and almost like they start to feel … like a threatening. Like you're a threat whereas when I was fat I wasn't a threat' 9
Society naïve towards WLS	'in certain places you get a certain negative feeling about weight loss surgery, saying why should the NHS be providing that when these are just fat lazy people who should just eat less and move around more and sort it out' 5
Secrecy about procedure	'so you know lots of people won't tell anybody at all. They won't tell their partners, their family, they don't tell nobody they've had the surgery' 3 'lots of people keep it quiet. But you see a lot of people disagree with it. They say you lost weight because you had a band' 3

	'I haven't told anyone. I've told very few people...I have thought about why I haven't told people and I think I haven't told them because I would be embarrassed to admit that I have had to go down that road to control my weight' 4 'I've been quite selective on who I've told to be honest. I think if I say it and continue to lose weight they'll say ''oh well she's got a gastric band'' and I don't want them to think that because it's not easy' 6
Societal prejudice towards obesity	'Previously on one of the rare occasions I was out with my friends in a club. A bloke came up to me and said what on earth is somebody as fat as you doing in a place like this, which completely finished me and I never went out again' 6 'I brought my son out of play school and I'd get called a fat cow, you know, you fat bitch, just by people walking by' 7 'People see what's in front of them not what's inside the fat a lot of the times... People see a fat person and they think ''God they're gross. They eat so much'' and yet you don't necessarily. I mean it's not necessarily that' 9
HPs prejudice towards obesity	delete
Sought own psychology support	'I knew her as a work colleague and a friend so she gave me quite a lot of support. In the early days I used to see her to talk about how I was feeling and that lasted for a couple of years...I found that really invaluable actually. Just to sit and offload when I was feeling down' 1
Psychology support needed post-surgery	'I do think you need psychological support alongside the dietician support and the aftercare. I know it's to do with costs and that but I think it's really important' 1 'although it makes you feel good cause you're losing weight and you start to feel better about yourself but psychologically I mean like I've got...my belly hangs even more now than before because I have lost 6 stone and that is horrible. That's almost worse than before I had the operation' 7
Psychology worked received invaluable	'the lady that I saw was wonderful and she really did help me. She said if I felt that I needed to have more counselling to say but at the time I felt no actually. I think I'm alright now...for now. They were amazing so probably can't fault them at all' 8
Family support	'my daughter supports me...and in moments when I was really down and feeling depressed, what I haven't done and things happening and felt sorry for myself basically, she was very very supportive then' 3
Dietician support part reason for success	'if I didn't have that dietician support I would have felt very unsupported but I felt very well supported by them' 4
Joined online support groups to compensate lack of post-surgery support	'if you didn't have that group, you wouldn't have anybody. You don't have anybody at all. I thought we would come back and be registered with a dietician, and they would keep a check on you, but nothing at all' 3 'if it wasn't for the Facebook group a lot of people would suffer badly because there is nowhere for them to go' 3
Patient signposting to Facebook support group	'people I have met who have had the surgery I have told them about it (Facebook group). Like, if you have a problem go on there.' 3
Gender prejudice over seeking /using group support	'I'm surprised how many men have had it done as well cause you'd think it's mainly women but no. There's a lot of men on there (Facebook group) as well'

	'I haven't got a problem with talking to women but it's less likely to encourage you to go back if there is no sort of balance or you always feel like you're to represent the male sex' 5
Sharing experiences	'I joined this group on Facebook because it's for people who have had this operation which is helpful because people share about their experience and what to do if you have this or that problem' 3
Lack of post-surgery support groups	'there really isn't much in the way of support groups. I've never actually found a support group where people meet regularly' 5'
Not equipped enough	'I feel like I have done it on my own... you do feel like they don't equip you enough really' 1
Shame to ask for psychology help	'psychologically I could have been possibly seeing somebody. I know if I asked ## would help me to see somebody but I haven't actually been offered that.
Sought own peer support	'the only other support I've had is from a ldy, she lives down the corner from me. She had a gastric bypass up in Birmingham. She gave me a lot of support before the operation. She was really lovely and helpful and we're still in contact' 7
Need strength to succeed	'I am quite a strong person... I think I'm strong enough to do it. But I think people that aren't so strong would struggle' 1
Gratitude for procedure	'I appreciate that people like us can have the opportunity to have this procedure especially on the NHS, and it can change your life dramatically' 3 'It's made such a big difference to my life and you see people struggling and suffering and you think there is a way out. There is a light at the end of the tunnel' 5
Post-surgery problems are unfortunate	'Obviously this problem with my oesophagus is just one of those things. It's happened and it's unfortunate but that's just the way it is' 3 'things are very difficult but I have talked to my wife about this and basically if I had to eat like this for the rest of my life or put weight back on, I would still do this. It's made that big of a difference to me' 5 'I would do it again despite having all these problems and they're not insignificant' 5
WLS as a catalyst	''it put me where I should have been rather than anything else. It just put me where I should have been not where I was' 4
Permanent food adjustment	'The thing I miss the most is bread. I love bread and bread is one of the things you have to avoid' 1 'I am concerned that if they take the band out, what will happen then...I haven't been eating well or good things lately... That's the issue. I haven't ended with the good eating habits' 5 'Like I can't eat anything doughy, bread, anything like that. All the things I shouldn't eat I can't because it gets stuck and it's really painful' 6
Permanent limits to food choices	'If I want it I'll have it but occasionally I do get a bit of indigestion which is probably because I'm eating things I shouldn't be eating. An apple is mainly what it is. I think an apple is maybe too acidic and it just upsets my stomach which is a shame because I used to like an apple' 4
Aftercare psychology if struggling	'I saw a psychologist for a little bit as well because I was struggling with coming to terms with the amount of weight that was coming off too quickly and it was quite scary. That was the main thing' 8
Never hungry now	'I must admit since I have had the band fitted I've never felt hungry. It sounds ridiculous I know. You think you would but you don't' 1

	'it just gave me the possibility of managing what I ate so that I wasn't always hungry' 4
Worry over potential long term issues	'it's a relatively new thing... I think I worry It cause they tell you that it's a life thing and once it's in basically it stays in unless there's complications but I don't think there's enough research to tell you whether it works or lasts forever...I wonder in years to come will it cause complications when I'm older' 1
Independent mind helps informed decision	'people either just go along with it because they want some intervention or maybe they're not independent enough to think actually is this going to work for me. I can refute those from the medical profession. I've got my own mind and I can decide using my own head' 4
Support needed despite weight loss	?
Feel in control	'I am very controlled. My husband says I'm either black or white and there's no grey in between. I don't know whether that's true but I know I can't let it go because I know from past experience' 4 'I'm totally in control and just I think the amount of weight I've lost is enough for me to feel the benefit health wise and I just want to feel it all the more' 6
Peer support to clarify unknown effects and help set realistic expectations	'What I would have really liked would be to have someone else who'd already had the operation at a similar time. We could compare stories, you know, compare ideas. What are you eating? I haven't tried that. Because it is very restrictive the first months as to what you can eat or drink because it's all sort of slushy stuff' 6 'I just really wanted to talk to somebody to know what to expect because it's scary when you have any sort of operation but I was really quite scared about having it done but didn't have anyone to talk to before...' 6
Closer dietician monitoring	'I think that we should all have to be registered with a dietician to register what's going on with our lives because everybody is different you know' 3
Integrate WLS and plastics funding	'the only thing I don't understand about weight loss surgery in this country is why the skin removal isn't a part of the package. I know they're saying to me you've lost loads of weight but if you lose more what's the point. You've got all this loose skin and you're kind of feeling rubbish about that. It's going to affect things' 8
Post-surgery helpline needed	'I'm thinking having a helpline or something like that where you could phone up and say I've had this problem and how do I get around it. Like an advice line. That could work' 9
More post-surgery education	'I was sent home with a box of needles and a sharps bin. So that, I think if there was any feedback, I would say they should get you to do one whilst in the hospital at least before you leave so you've got an idea of what you're doing' 6

Health Professional Interviews	
Codes	**Quotes**
Varied roles with varied focus	'Bariatric dietician in the tier 4 weight management team …after their operations to make sure their dietary plans are right. I do tier 3 work as well…assess bariatric patients at initial appointments …looking at their dietary patterns and habits' 'Clinical psychologist and I've got two roles' 2 'work as a bariatric surgery practitioner...I support patients who are referred through the obesity pathway through to tier 4 for surgical intervention' 'I'm one of the consultant physicians... the main aspect of my work is to make sure that their medical conditions associated with their obesity are well managed' 8

MDT /Cross professional working	‘A big part of my job is highlighting any psychological concerns …working with those involved in psychology …picking up any problems which may need to be referred to the triage’ Dietician ‘I do tier 3 work as well…assess bariatric patients …with consultants and psychologists’ Dietician 'I think that's really useful; having 3 different people asking questions in slightly different ways and you'll find there's different people that some patients feel closer to or that they're opening up to one person more than the other' 8
Cross tier working	‘Bariatric dietician in the tier 4 WM team. I do tier 3 work as well’ ‘I work in the tier 3 service…with patients who are overweight and want surgery or support to lose weight. In the tier 4 service that’s working with people with suitability for WLS offering limited intervention to start their work up to surgery …and the post-surgery work.’ 2 'the tier 3 service essentially provides support to people who want to lose weight and potentially want to have weight loss surgery and move onto the tier 4 service' 'I work assessing pcs regarding their suitability for WLS and have done a lot of preoperative work up as a psychologist and also lots of work post operatively, offering therapy to people that are struggling' 5 'the whole thing is difficult to separate pre and post because it all gets mixed in all in one go' 5
Informal ‘on the job’ training vs formal training	‘I shadowed quite heavily before I got involved’ ‘I haven’t been on any specific training or masters courses. There is a lot of learning on the job’ 'as an assistant psychologist all you need is a masters and relevant experience and I had quite a lot of experience in eating disorders before this role' 'just sort of really shadowing and reading around in the area of weight management'
Consistent contact through the WLS journey	‘they do get a consistent person from the very start of the journey right through to having their surgery and the 2 years afterwards’ 'it's rare for us not to know or not be able to recall any one of our patients that we have ever had.' ‘consistency is important because it is so difficult and a rollercoaster journey for people and you go through the highs and lows with them’
Consistency in information given	‘the MDT all meeting regularly is important so you have similar values and give patients consistent messages and a structured approach of what we expect’ 'we're all on the same page and we really care about our patients … I think there's a feel within the service (tier 3) of really wanting to put the patient first which is really nice' 3
Patient empowerment	‘It’s not just telling people what to do … it’s trying to motivate them and empower them to make choices’
Specialist knowledge	‘if they have psychological concerns it is far better for the patient to be seen by a psychologist who knows or has good knowledge of weight loss surgery so we’d apply for exceptional funding for a psychologist to see them’
Group work needed	‘Consistent support groups … because patients often feel like they’re the only ones going through this difficult journey’ ‘Groups are really powerful’ 'drop in sessions or group sessions post op where patients can come in if they're troubled ad discuss things I think would be useful' 4 'you'll find from a patient's point of view that the ones who've done the groups tend to do better because of having the support of other people I suppose in the group' 8
Not a good tier 3 set up / limited	‘makes preparing patients for potential bariatric surgery harder because we’re expecting them to make all the changes necessary with very little input’

pre-surgery work (or resources)	'we also run a dietetic based group 'Your loss you gain' but we are not doing that at the moment because we don't have enough hours' 'a good looking at emotional states of eating and learning some skills before you have surgery, that's important' 'what doesn't work well is when we assess people and then we can't offer them the intervention …we don't have the staff or resources to be able to offer them the intervention so they have to go on the waiting list' 'what doesn't work is people having surgery who are never assessed properly and trying to kind of fix it all up afterwards'
Limited aftercare psychology support	'In the tier 4 service they don't get as much but again we try to work with them (pre-surgery) to prepare for surgery' 'I don't have any input after surgery.' 2 'it can be 6 months down the line that they'll be struggling and then we'd be asked by the team... for us to see them but we don't follow up after surgery' 2 'the team are very good at picking people up and saying that they are struggling but normally we don't see people until something has gone wrong' 2 'personally I have only worked with one person...she was just struggling with anxiety and nausea and wasn't able to keep her food down...sort of very short input work'3 'normally we don't offer a kind of standard post surgery package of psychology related input' 'the lack of funding has stopped us developing in the way we would like to develop from a psychological point of view' 5
More aftercare support needed	'they can email or call me as needed but there is a need for more support for patients after they have had bariatric surgery' 'patients can feel quite abandoned' 'even though there is all this pre-surgery work it still is important that we have post-surgery support' 2 'they are human beings and can manage but I think that if people are struggling there should be an avenue back'3 'certainly the gastric bands need to be followed up more regularly, more longer after surgery than the 2 years. They're certainly not followed up intensely after the operation. That's one area that we can improve on'
Peer support	'it's helpful to meet other people going through a similar thing' 'there does need to be more peer to peer support where they're getting more emotional support and don't feel like they're being left on their own with all these changes' 'Although I had that done professionally and all the professional staff were amazing and very informative I think sometimes having a person, like a normal person who's had it to tell you about what it's like I think would be quite helpful' 8
More standardised aftercare service approach	'we have a standard protocol' 'we have structured their aftercare more so they should know now how often they're going to be seen and when and by whom' 'there is a well defined pathway combining a range of outpatient assessments by a surgeon and dietician and a bariatric practitioner as well as a psychologist if needed for up to 2 years after surgery' 'There's very clear pathways postoperatively. They've allowed consistency' 5
Fixed time frame for intervention	'2 years is what we are funded for unless they (the patient) have ongoing problems' ''it's not that great for the patient because they are stuck in the middle needing help and support…so they suffer' 'we are implementing the two year cut off period more strictly now which is good because it structures our service more but people then get discharged and they're quite upset about it'
Progress markers	'there's the … National Bariatric Surgery Register and that's got a couple of questions in it …to tell progress made' 1

	'really it was her self reported progress. We didn't really focus on weight that much cause she'd lost a significant amount after the surgery...The main focus was to try and support her through the reflux so she could eat more normally and could use her band more effectively' 3 'first and foremost weight... Physically, their other medical problems like diabetes and whether they are still requiring to take medications. Their functional ability where their mobility is concerned' 4 'Then I suppose also their emotional wellbeing although we don't have any direct measures of emotional wellbeing post op. We don't strategically you know ask questions on that' 'For patients, that (weight) often is the most important thing, initially at least' 5
Digging below the surface	'It's all well and good saying fantastic, you've lost 70% of your excess body weight but they're psychologically in a really difficult place' 'on the surface of things it looks like they've done amazingly but actually now she can't eat food properly she's turned to alcohol and is saving all her calories for alcohol' 'You have to look below the surface of weight loss results to really know and hear how somebody is really doing' 'it takes a lot of interviewing and it takes a lot of consultation sometimes with some patients to work out whether or not this is a behavioural issue or whether or not this is something a band could support in changing' 6
Relationship building	'It helps to know them preoperatively to build a good relationship with them' 'we really get to know people, and kind of build up a relationship with the which can be helpful for them and offer them additional support if it is required'
Team work	'It is good to have input from all different people in the team so we alternate … so that if one person can't get that information, somebody else would'
Aftercare support on patient onus	'We are reliant partly on if people need more support, getting in touch with us and letting us know otherwise we would assume that no news means they're okay' 1 'I do say to them I'm going to leave the ball in your court and if you don't get in touch I will assume you're fine' 1 'We kind of also have an open door policy where we are able to be contacted at any time during post op by patients if they are concerned or worried about anything...' 4 'Our communication channels are very good. Patients can refer back into our service if there's things that they are worried about' 4 'So a lot of that is ball in their court' 6
Limited family involvement	'we encourage them (patients) to think about getting as much support from their family and friends as they can' 'that could be something we could do more work into' 'it is a big change for the family as well and some people don't adjust to it' 'we don't do anything particularly to involve them' 'over 80% of people we see bring partners or family to their initial assessments and appointments' 'On the whole... I usually see most people as individuals'
Family input useful	'people tend to offer information that the patient wouldn't have offered up themselves' 'they can be quite good at indicating the patient's eating habits, how often they go out, snacking habits, what they like eating for dinner' 'If you involve people that's great because people do not eat in isolation' 'I think it's difficult to see an individual in isolation...our interactions with others and the world take up a huge role in our behaviour, lifestyle and everything else'
Family judgment	'other times you can see that the family members are putting the patient under pressure, not understanding the reasons why they eat and can be quite negative' 'secret eating is a massive factor but you might not want to talk about that in front of your partner'

Contrast/Friction of short term intervention to long term patient needs	‘people would hope they would get more aftercare for the rest of their lives and that we would see them forevermore as opposed to the two years they now get’ ‘we are implementing the two year cut off period more strictly now … but people then get discharged and they’re quite upset about it’ 2 ‘I think that two years is not a long time' 2 'most people are happy with the post operative route...a lot more often people will say I don't want to be seen anymore' 4 'Obesity is a long term condition and if you view it as a surgical problem then it's not a long term condition and this limits the follow up in the long term' 5 'where I think the importance lies is, there is the acute bit in hospital' 6 'where I feel most important is actually maybe that first initial period, the 6 month follow up appointments …' 6
Adjustment takes a long time	‘the reality is that they (patients) are only just settling after two years’ ‘the problem with the surgery is that old habits can creep in and the weight can regain, and if you’ve got no support with that then the surgery might not be successful’ ‘it’s ongoing, support could be more’ ‘people go through ups and downs in their lives, and your weight and eating can change throughout our lives or following surgery’ 'people don't just lose weight and then regain their confidence. It just doesn't work like that' 'long term it is really good for people but I think it's important that those changes are made before, the change in the mind' 'We've had a couple of people who have not complied...and are not very good at managing themselves dietetically afterwards. Sometimes people change and their needs after surgery so it is something that we've often had a couple of times'
Minimal long-term outcomes evidence	‘I think there is still more data that needs to come out with some good long-term studies’ ‘in old age living with bariatric surgery for example, we don’t really know how that’s going to go’
Life transformation	‘there’s lives that have been transformed by losing the weight’ ‘we see amazing results’ ‘it’s a privilege to see people’s lives changed’
Education (on top of surgery)	‘there needs to be a lot of education around management’ ‘Surgery won’t help you with emotional eating, buying or cooking healthy food, life change stuff. So you’ve got to give them skills to manage that or it won’t work in the long term’ ‘some more online learning and support’ 'I don't know how much information people are given about managing their gastric band, bypass or sleeve... I think it's really important that people know, understand how to use the tool that they've been given essentially.'3 'I think kinda pre-surgery, maybe one education session for families might be quite useful' 3 'there is a lot of education for GPs and primary care to do which we are in the process of trying to sort out' 4
Decision making	‘choosing the right surgery and making realistic choices is really important’ 'we do an overview around the different types of surgery at that session but also we do allow these patients who have had successful surgery, in the sense of having gone through the surgery to then share their story. So you've got both sides of the table. But in addition to that... they'll have an appointment with their surgeons, where the surgeons will help them make that decision as to what they think will be the safest option. SO they are going in with their eyes open …' 7
Surgery not a standalone solution	‘I don’t think surgery by itself is the answer, especially as an approach for people who have tried and tried for years and not gotten anywhere’ 'if people are able to make behavioural change before surgery I think it can be very helpful' 'there is absolutely no point in doing WLS if someone doesn't make change first'

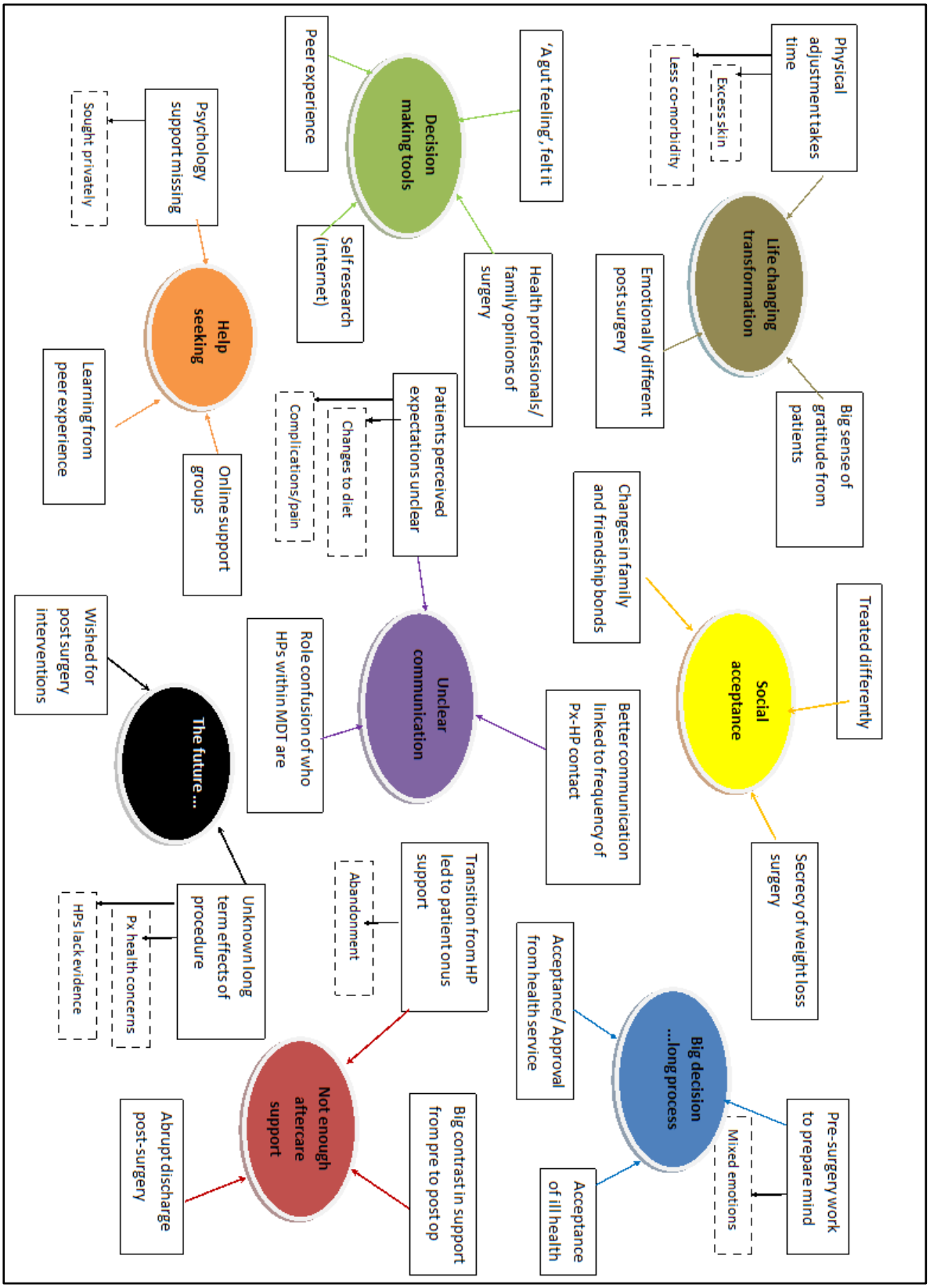
	'my overview of aftercare is that actually that's probably the most important thing about WLS to achieve the best outcome' 4 'WLS does work... but I think equally you still need to have all the other things like dietetic and psychological input for people to make it work properly' 5 'So actually, the work up, that's what you need because the surgery is just a tool. It isn't what's going to cause the weight loss or make the weight come off. It's just a tool'7
Self-management skills post-surgery	'helping people to self-manage their condition in the long-term … through groups because of the power of groups… is quite an efficient way of running things' 'we are pushing for more self-management of our health ...so I think hat might be useful in a weight loss surgery service context. So you know, self-management of your band, kind of teaching people to get the best out of their tools' 3
Lack of resources / little personalisation	'you can't really give a personalised service when you've got four sessions, that's not really enough for personalisation' 2 'it can be a bit personalised in the approach by seeing people as individuals, and catering to their needs but actually, it is a tick box exercise. You're just trying to get through the boxes' 2 'I think it's been really overlooked, the complexity of this group and we just don't have the resources to be able to support them' 2 'the CCGs can't afford to see all the patients every year, for the next 50 years' 4 'everything is not properly funded within the service … that makes it really hard for us to see people properly' 5
Risk assessment	'we shouldn't be letting anyone through so we have lots of rules around previous self harm, alcoholism, drug taking, so we don't let people through that we think are risky' 2 'at assessment clinics we always do quite a thorough psychological assessment in terms of mental health risk. Where the surgery is concerned it is more the eating related behaviours because they can be exacerbated from surgery' 3
Increased awareness	'I feel like more people know more about it. Celebrities have perhaps made it more popular, more people are having it'
Easier access to procedure	'You used to have to have a really high BMI and comorbidities, but now lots of people are encouraged to have weight loss surgery.' 'You don't have to get funding, you just have to have a certain BMI and comorbidities and you automatically get listed for surgery' 'I get incredibly frustrated when I see things on the news that say we need to give everyone with diabetes WLS, if they've got a BMI of 30...what are we doing?!' 'the provision of weight loss surgery is more abundant than it used to be. The limitations are changing' 4
Concern on long term outcomes (unknown)	'I worry that one day we will look back and think what on earth were we doing thinking this was a good idea taking out people's stomachs. I wonder if one day we will look at it like people see lobotomies now' 'there is another group of people here I think it's a medical solution to a psychological issue and then they lose weight but I think they'll put it back on two years later'
Denial/ displaced responsibility of weight gain	'some feel that their band didn't work, you know, they blame the procedure. And some feel that they were not warned'
Complex patient group	'this group have got so many comorbidities...complex comorbidities...mental health problems...we see a lot of depression and anxiety, ...a lot of abuse …' 'quite a lot of our patients do have mental health problems, a history of mental health problems' 3
Pre-op work important for later adjustment	'there is less support after and I guess it's tricky...So do you put the money before to then make the change before and hopefully that is sustained and put less afterwards or do you do things the other way round? And I'm inclined to say before is better' **link to HP decision making**

Pre op Mood & Food group	'looks at our relationship with food and how we understand food' 1 'it really tries to offer something different from just instructional behaviour... and gets people to really understand their thinking around food and make changes from a different way to anything else they've tried before' 3 'we tend to do more Mood & Food group which is based on Acceptance Commitment Therapy' 7
Abandonment	'we had feedback from the first couple of groups that we run that once the group had ended they felt really lost' 3
MDT communication dynamics (MDTs within MDT)	'there's really good communication between us and it's a supportive team' 'the MDT, so that's the tier 3 team which would be me, psychologist, dieticians, one of the consultants and ...our administrator who just keeps us all together. the 6 of us...that's what I consider the team' 3 'it is the only way it can work. Is to have the patient being assessed by three people, the dietician, psychologist and medic. The MDTs are very joint so they are really good now. Everyone gets a say, everyone is listened to and everyone is receptive' 5
tensions around quick fix patients perceptions	'(some) people will come to the tier 3 assessment clinic and still think they are getting their surgery date, and when they don't get it they are pretty put out. They are not best pleased' 'if you just communicate with the patients and explain to them that this is the rationale of why we want you to be in the service a bit longer they're alright' 'WLS in principle is a really good thing that we are able to offer people but it should not be seen as 'the magic wand'. It's not going to make everything better' 3 'all they can see is WLS so they can't imagine what it will be like, actually living with WLS' 5 'they are so desperate at that point that they so want it, they can't hear that life isn't always going to be brilliant with WLS' 5 'people still think it's a magical thing which is not good. You rarely hear people talk about the realistic things … the sort of day to day life things' 5
Minimal surgeon/medic input in process	'they get the operation' surgeon 4 'patients all get seen in part of their pre op assessment for a year or at least 6 months by other members of the team ...before they actually get to see a surgeon' 'Surgical reviews so from the surgeon's point of view, it's just an assessment for surgery itself and then another patient follow up as a standard' 6 'well, they (dieticians, psychology) have much more of a role than I do cause I only see them (patients) at the start and at the 6 months interval' 8
Patient feedback	'we've had great patient feedback for the department' 4
aftercare focus on the struggling	we talk about every patient before their operation and we talk about the ones that struggle after surgery 'we are seeing a lot of people who had bands at the beginning and years down the line they started struggling and want some revisional surgery' 5
Psych. support potentially resource draining	'Everyone likes seeing a psychologist and feel it is very beneficial and find it difficult to say 'ok, I am done and I am not going to come back again'' 4
Changes in WLS	'one of the main changes is that it should not be seen as WLS anymore. It should be seen as metabolic surgery and by that we mean diabetes improving surgery' 4 'it should be seen as a health improving surgery rather than just weight loss' 4 'initially they were told they'd be followed up for life and then a year ago they were sent a letter saying you've been followed up for 2 years and we can't continue to do this so some patients are quite cross about the letter, about that' 8
Psychological illness persists	'my standing on psychological illness in WLS is that it's not as good as it used to be in the past. A lot of people who were depressed beforehand can remain depressed afterwards or indeed become worse after surgery'
Excess skin	'there is also people getting loose skin, the issue of excess loose skin after surgery that can have negative effects on their self perception' 4

	''one thing they do often talk about that isn't a positive is the excess skin and the impact of how that has been for them and a lot of people find that very horrible, and shameful' 5
Aftercare importance	'pre op work is good, is important as is your technique of surgery but the patients that do the best seem to be the ones that have the most intense and the best post op follow up, and to manage their expectations properly and maybe that is not as prioritised in the whole pathway of the perioperative part of the process' 4
Psych work broad and integral to service	'supporting the team, supervision of the team, helping inform the team on psychological theory...the role is quite broad, there's a lot of things we do and some of it is indirect patient work, some of it direct patient work' 5
Tensions within MDT	'we would put a stopper sometimes because they're not ready … and I think that can be quite challenging and frustrating to certain members when they obviously want to operate on people'
Frustrations	'it is very frustrating when you know that you are unable to offer that help' 5 '
Picking up the pieces	'so we come in to work on the negative stuff rather than the positive stuff because we often see people post WLS who have either not lost any weight at all and are still engaging in very unhelpful eating behaviours' 5
new service /way of working	'we are a relatively new service' 6 'I think because the team is new... that sometimes means there can be difficulties in identifying how we support patients more effectively' 6
poor communication	'that gap between tier 3 and tier 4 I think communication between the two historically has been very poor' 6 'Because of the way the clinic was set up … the GPs refer them for assessments for bariatric surgery rather than sending them a referral to come to a weight management clinic which is what we are. So initially a lot of our time is spent explaining this isn't an assessment for surgery. This is a weight management clinic' 8
aftercare varies based on surgery type	'So for the malabsorptive elements of sleeves and bypass, we have to monitor their bloods more regularly for safety reasons and nutritional state...So they are quite frequently reviewed' 6 'the surgeons are hoping that people that have bypasses quite often don't need as much input as those who have bands. I don't necessarily agree with that' 5
Saturated service	'we are sort of at the saturation point now' 6
good post op support	we support patients regularly and I think we support patients in a way that aids the process of changing behaviours and managing their weight long term' 6
lack of knowledge around fills	'with the evidence out there, there isn't a criteria to suggest that this is a patient who is due a fill and this is a patient who is not due a fill' 6 – **link to HP decision making**
No psychological measures post op	'Psychologically, we could do a lot more. Unfortunately we don't collect psychological data or measures in the service which means we don't really know what is going on psychologically after WLS' 6
Communication with primary care	'so communication actually between the specialties and the GP surgery I think is incredibly important for patients' safety' 6 'Unless they are sent to their GP then the sort of 2 years afterwards is not enough' 8
Spousal relationships	'post bariatric surgery there is a higher than the national average of divorce following WLS. People have relationship difficulties following one partner losing a significant amount of weight' 6
permanent life changes	'Patients' social circumstances change significantly so socially it is very difficult' 6 'By changing someone's eating and maybe affecting one's eating significantly sometimes can significantly affect the way that they are socialising' 'A&E won't treat people who are banded if it's something to do with your band. You've got to contact your own team and see if there's anybody available to talk to you or to see you. If there isn't, you got to suffer and people do suffer' 3

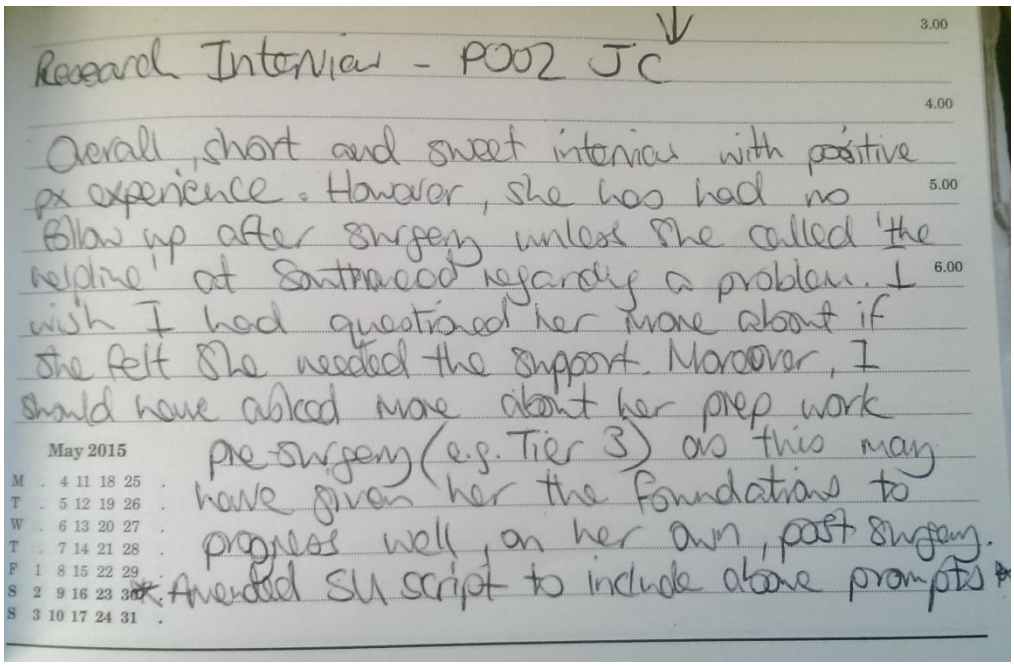
Weight as main progress marker pre and post op	'unfortunately, as much as you don't want it to be around weight, that's what we get. That's what we get funding from, but you can see it in just health behaviour changes so both. Just being more, you see sort of patients more confident' 7
Surgery at the right time	'sometimes people just enrol at the wrong time. We've had people who are in the process, so having contact with the dietician and psychology and it's not been right. Then they'll come back in and pick up everything the second time round cause actually they are in the right space and things start to fall in the right place' 7 'I think bariatric surgery has not got to be done too late. So you know patients I might see that have had diabetes for 20 years...those sorts of patients I think it's too late for them. They are not going to get the same benefits that a young person would' 8
Secrecy about procedure	'one husband I think is the only one who knows and very close family, one person at work. Another gentleman really doesn't care who knows [laughs] but then it's interesting. Their mindsets, where they're at in terms of having been engaged in the group is different' 7
Surgery for the right person	'I think for the right patient it's good. There are some patients though where it is not appropriate' 7
More confident	it opens up more social circles, better opportunities, just more confident and happier in themselves but all of that isn't necessarily just down to the weight. I think it's having a better understanding of themselves' 7
Confidentiality / privacy from family	'During our assessment clinic they are allowed in with the dietician and the psychologist. I see the patient by themselves because I think it's important that they get at least one opportunity to say things they might not say in front of loved ones' 8 'a couple of days later she phoned in and said "my husband doesn't know what I eat. My husband doesn't know I get up at night and do some secret eating"
Life Transforming	'certainly there are patients that have done remarkably well with WLS. Their diabetes has gone away and you see them completely transformed' 8

Appendix 8 – Initial thematic map

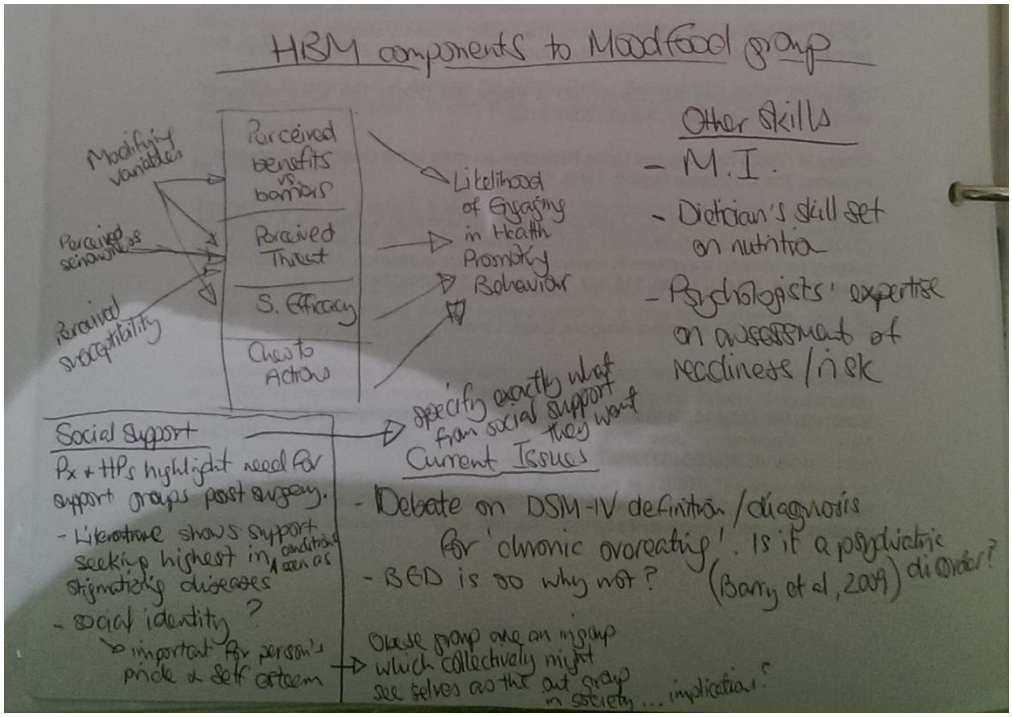


Appendix 9 – Extract from personal journal

Extract dated 15th April 2015 – notes after interview with patient



Extract dated 20th November 2015 - ideas on theoretical application



Appendix 10 – Link to service information booklet for patients and carers

https://www.nbt.nhs.uk/sites/default/files/attachments/North%20Bristol%20Centre%20for%20Weight%20Loss%20Metabolic%20and%20Bariatric%20Surgery_NBT002892.pdf

North Bristol Centre for Weight Loss, Metabolic and Bariatric Surgery

Information for Patients and Carers

Exceptional healthcare, personally delivered

Appendix 11 – Research day feedback 4.12.13

Date: 4th December 2013

Research Day 1 Notes & Feedback

Ethics (Tim Moss)

1. If you are going through NHS Ethics you do not need UWE Ethics approval as well. Just sign it off and log on system.
2. Get your RD1 form completed and submitted ASAP. Do it properly as you only get one chance to resubmit. It is better to do it before your ethics application. This means you will need to start writing up your research proposal soon. You need to submit the RD1 6 months after your registration into Year 2 of the course. Therefore your deadline is summer 2014.

Research Design / Ideas

1. Log reasons for why you make every decision of your research design. This will be useful to reflect upon when writing up your work and preparing for your viva
2. Email Julian your preferred supervision team by this week
3. Look at VITAE online for videos on doing a viva
4. With regards to your research idea presented today:
   - Look up psychological care after weight loss surgery frequently to get up to date info
   - Do a database search through NHS website. Find a service willing to support your study
   - Maybe think of looking at patient expectations on weight loss surgery
   - Staff's views of patients' expectations
   - What about complications following surgery and link with psychological outcomes?

Appendix 12 – Reflective notes on research question

Date: 21st March 2014

Research Ideas

The key question is around inadequate psychological care of obese patients. They are given surgery (WLS) as a solution therefore the study would look at two time periods post surgery asking participants:

- Benefits of weight loss
- Expectations of weight loss
- Were the expectations met

This is to assess whether underlying psychological problems re-emerge (even after weight loss) and also if lack of psychological care is felt by patients.

maybe take an objective (scale) ratings of HADS/QOL?

Also interview HPs who have done this work i.e. what interventions, what is lacking (what is your idea of an ideal service provision?

These will help give ideas/ produce recommendations for an intervention

Appendix 13 - Reflections from Doctorate Professional Skills log

23/6/14

Really good meeting with Dr Lishman. She seems just as proactive as the previous [redacted] and I think she'll be very good at pushing and motivating me to do the project as it's not too long since she completed her Clinical Psychology Doctorate research. Looking forward to getting started with recruitment and working with the team here.

18/7/14

Feeling frustrated but at least I have been given other options. I don't want to write anymore today as it will probably just be a long massive rant

21/7/14

After my chat with [redacted] I am feeling so much more positive. She is very supportive and I think her and Jane will get me through this. I am now motivated again to get started with this. There are always roadblocks in the world of research especially when it involves working with people :-)

2/2/15

Looking forward to completing these assignments so that I can get on with my research project. Very happy that all my approvals are sorted and I will have some progress to talk about at uni tomorrow

2/3/15

First day at [redacted] hospital for study recruitment proved to be very useful and productive. I am so happy to have [redacted] as a PI. She is very switched on and supportive. She will definitely push me to finish recruitment by end July. I have also been introduced to other members of the team which I am sure will be very helpful going forward. Most of the staff were very keen to be interviewed although I think the doctors/surgeons will need more pinning down when it comes to arranging a date and time for an interview. A bit slow on the patient group side as we only found 5 long term patients that were eligible on the database. I hope all of them response positively otherwise I will definitely need to look into the patient support groups to access more long term pxs. Overall I am very pleased and looking forward to my first staff interviews on the 16th March

16/3/15

Overall, I feel this has been a very productive day and good start to the research interviews. I think the interview schedule worked well for both HPs considering they have different professions therefore I will not be changing it for now. Their answers were very insightful and I feel I will personally learn a lot about the service and the workings of this MDT over time.

17/3/15

Gosh...I forgot how time consuming transcribing of interviews is. It's now 3 hours and I still have 5 minutes of the interview left to complete. Lesson of the day - transcribe as soon as you interview to keep on top of things

20/3/15

I am really hating the fact that I am using my annual leave to do more work... But at least I have now got 3 HPs interviewed for my research project. That is half of my intended HP sample. Onwards and upwards... However, I am disappointed with patient recruitment as I am yet to receive any response from the invitations that have been sent out. Hopeful that the ones today will trigger some results

31/3/15

I am very excited today as I have completed my first patient interview. It went very well and she was very forthcoming and open with her responses. As advised by the principal investigator, I started with a very open ended statement along the lines of 'could you tell me a bit about yourself and why you went forward for surgery'. This did work well as it allowed the px to talk freely, introduce themselves. I also think it helped emphasise the fact that I was genuinely interested in them as a person not just their experience. For now I will stick to the interview schedule as it is, however I am aware that this px had a positive outcome. I will be interested to see if the schedule works for a px who has had a negative experience.

6/4/15

I am quite behind on my transcribing but I am slowly learning not to beat myself down about things. I can only do what I've got time to do. Hopefully if I keep my head down and just press on I should catch up

20/7/15

I have been quite nervous these last few days despite support from Jane and peers as I was completely unsure of what to prepare for. I have never had a viva before and when you Google about it or listen to people's experience they are mostly negative. However the experience was the complete opposite. It went very well. I passed!! I am over the moon!! I am more sure now of what I am doing and have a clearer idea of how to finish my research project. Better still I feel like I am well on track to completing my Doctorate. All I can say is praise Jesus. I have come so far and how I have done so only God knows. There have been many times over this course where I have had headless chicken moments or where I couldn't see past muddied waters but somehow I have got through things. One more module deadline and then it's just THESIS SUBMISSION LEFT!!!!