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Patient experiences of weight loss and eating after bariatric surgery: A systematic review and qualitative synthesis

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Abstract

Background: An estimated 26% of men and 29% of women in the UK are living with obesity according to recent statistics. Bariatric surgery can induce significant weight loss and improve comorbidity status. However, previous studies highlight challenges in maintaining dietary changes and weight loss. This systematic review aimed to investigate patient experiences of weight loss and eating in the first 2 years following surgery, as well as provide clinical recommendations to support this group.

Methods: Ethical approval was granted by the University. A systematic search was conducted in four databases. Studies were selected according to the predefined eligibility criteria and methodological quality, assessed via the Critical Appraisal Skills Program (CASP) tool. Data were extracted and analysed using a thematic synthesis method. Rigour was enhanced via use of a data extraction tool, a validated method for data synthesis, peer review and transparent reporting.

Results: In total, 507 records were screened; nine studies met the inclusion criteria. The thematic synthesis yielded four, interlinked analytical themes based on the experiences of 154 patients: relationship with food, relationship with oneself, relationship with others and unfinished journey. Positive experiences were reported including development of healthy eating behaviours and significant weight loss, improving physical and psychosocial wellbeing. On the other hand, challenges in adjusting to life after surgery were also reported.

Conclusions: The present study highlights the need for personalised dietary advice, addressing the psychological aspects of eating. Support should be extended to the family. Ongoing psychological support must be incorporated in the postsurgery care pathway to help patients deal with the negative outcomes of surgery such as excess skin.

KEYWORDS

bariatric surgery, meta-synthesis, obesity, patient experience, psychological health, qualitative

Key points

- Bariatric surgery can be an effective weight loss intervention; however, previous research highlight challenges in maintaining weight loss and dietary changes longer-term.
- This systematic review aimed to investigate patient experiences of weight loss and eating in the first 2 years following surgery, as well as provide clinical recommendations to support this group.

- Nine studies were included in total revealing insights about the experiences of 154 patients.
- Bariatric surgery can help with the development of healthy eating behaviours, as well as lead to significant weight loss and improve physical and psychosocial wellbeing.
- However, many patients can experience challenges with adjusting to life after surgery, such as maintaining dietary changes and ongoing poor body image, as attributed to excess skin in some cases, as well as social stigma.
- This review highlights the need for patient-centred nutritional advice, education for patients and their families regarding the implications of bariatric surgery to set realistic expectations, and ongoing psychological support both prior and after surgery.

INTRODUCTION

Obesity, defined as a body mass index (BMI) of 30 kg m^{-2} or greater¹ affects an estimated 26% of men and 29% of women in the UK, according to the latest National Health Service (NHS)² obesity statistics. Obesity is associated with an increased risk of cardiovascular disease, type 2 diabetes, certain cancers and mental ill-health.³

National Institute for Health and Care Excellence¹ (NICE) guidance for obesity management state bariatric surgery (BS) may be considered for those with a BMI $> 40 \text{ kg m}^{-2}$ or between 35 and 40 kg m^{-2} with an existing comorbidity. BS defines a group of surgical procedures performed to facilitate weight loss by altering gastrointestinal anatomy.⁴ Procedures available under the NHS include gastric banding, intra-gastric ballooning and sleeve gastrectomy, which reduce stomach capacity, provoking early satiety and reduced appetite; duodenal switch, which reduces absorption of fat; and gastric bypass, which reduces gastric capacity and absorption area of the small intestine.⁵

BS is becoming increasingly available, with more than 5000 procedures performed in the UK annually.⁶ Surgical intervention may bring financial savings to the NHS⁷ from reduced prescriptions of medications for comorbidities management. However, individuals undergoing BS must be carefully selected and appropriately referred to achieve optimal outcomes.⁸ BS must only be considered if non-invasive weight loss measures, such as dietary, pharmacological and psychological interventions, have been exhausted but have not produced clinically significant weight loss.¹ Eligible candidates are referred to a hospital Obesity Surgery multidisciplinary team (MDT), including physicians, specialist nurses, dietitians, psychologists and physiotherapists, who assess the risks and benefits of surgery to inform the final decision regarding the suitability.⁸

Quantitative literature highlights positive outcomes of BS on physical health, including significant weight loss and improvement or even remission of comorbidities.⁹

However, weight regain has also been reported, as observed from 2 years postsurgery onwards.¹⁰

Previous qualitative studies further illuminate perspectives of life following BS. They highlight that weight loss can lead to myriad positive outcomes, including improved body confidence and feelings of “normality”. However, challenges in adjusting to the altered gastrointestinal anatomy and changing eating behaviours were also reported, including unfulfilled eating desires and ongoing episodes of emotional eating, contributing to weight regain and feelings of “shame” and “failure”.¹¹

UK guidance recommends follow-up by the specialist MDT for a minimum of 2 years after surgery.¹ However, the challenges in adjusting to and maintaining dietary changes and weight loss raise questions regarding whether patients are adequately supported during this timeframe to sustain behaviour changes in the longer term. This systematic review and qualitative synthesis aimed to explore patient experiences of eating and weight loss during the first 2 years following surgery, deepen understanding of their perspectives and enable recommendations for clinical practice to best support patients after surgery.

METHODS

Study design

This systematic review of qualitative literature aimed to explore patient experiences of weight loss and eating during the first 2 years following BS. A systematic search of bibliographic databases and thematic synthesis of relevant qualitative research was undertaken. A systematic review and qualitative synthesis was chosen as synthesising a collective body of qualitative literature allows exploration and comparison of themes and concepts, providing deeper insights that might not be available in a single study and a broader approach to evidence-based practice.¹²

Search strategy and study selection

The eligibility criteria, developed *a priori*, informed the search procedure and study selection. Included studies were qualitative, English language, and provided adults' experiences of weight loss and/or eating in the 2 years following any type of BS (see Supporting information, Table S1).

The research question used the “PEO” framework – (P) Population (adult patients), (E) Exposure (BS) and (O) Outcome (experiences of eating and weight loss) – which informed the search strategy (for search terms, see Supporting information, Table S2).

Four databases – MEDLINE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Academic Search Complete and Scopus – were searched independently by the lead researcher during January 2020. An example database search can be found in the Supporting information (Table S3).

Study selection

Studies identified at each stage were illustrated using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow chart¹³ (Figure 1).

Study selection was conducted by the lead researcher. Titles were screened, followed by abstracts and then full texts, against the eligibility criteria. Reference lists of

included studies were examined for additional studies of interest. In total, 507 records were screened. Excluding duplicates, there were 372 records, of which 358 did not meet the inclusion criteria. In total, 14 full text articles remained for quality appraisal after which five articles were excluded, leaving nine studies meeting the inclusion criteria for final data extraction and analysis.

Quality appraisal

The Critical Appraisal Skills Program (CASP) tool for qualitative literature¹⁴ informed quality assessment of eligible studies. Studies concluded as “poor” quality were excluded from the final set of studies for data extraction. A summary of quality assessment and associated outcomes is provided in the Supporting information (Table S4).

Data extraction

A data extraction tool recorded relevant information regarding each study's aims, sample characteristics, methodology, themes, subthemes and quotes, which informed data analysis. This was piloted as part of the research protocol and appropriate changes were made following feedback from the second researcher.

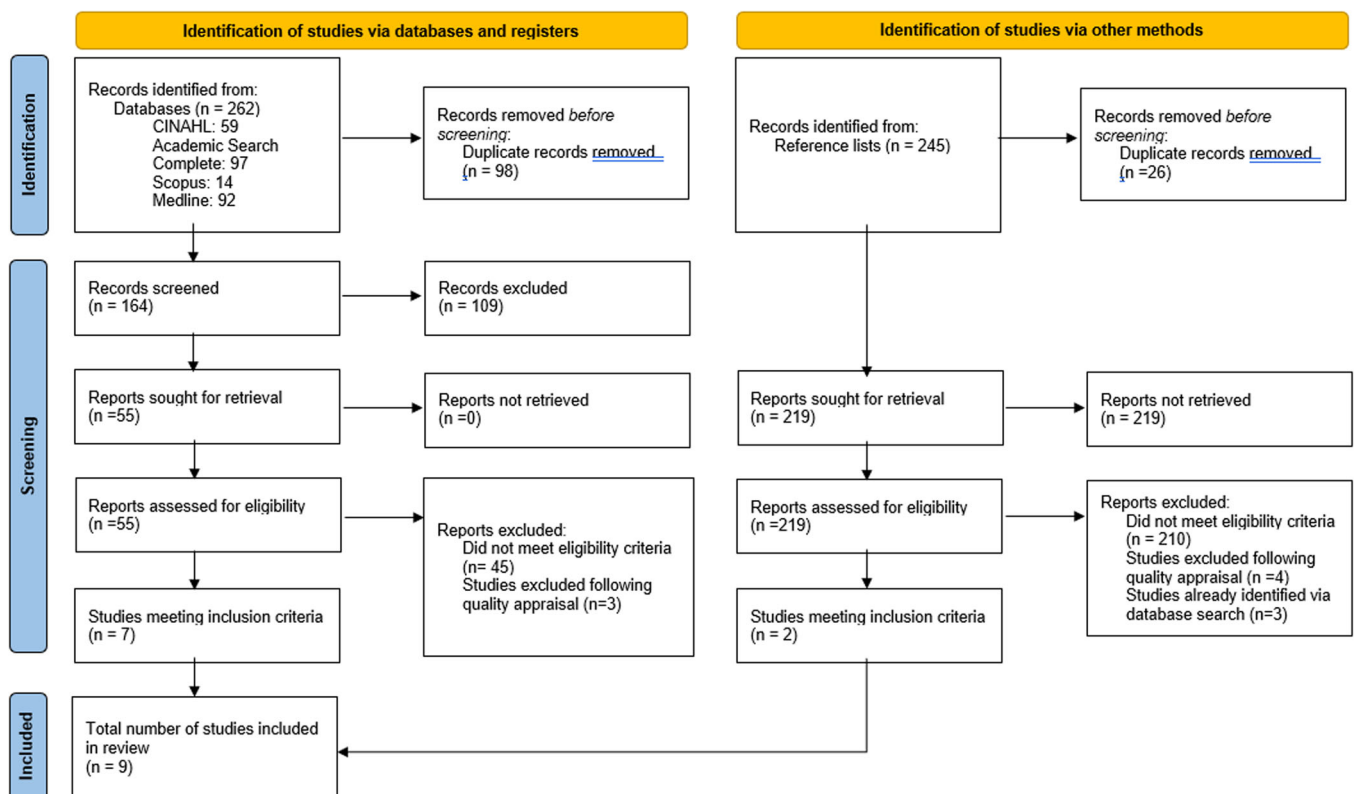


FIGURE 1 PRISMA flow diagram.

Data analysis

A thematic synthesis was conducted on the nine included studies, based on Thomas and Harden's¹⁵ approach. Data synthesis involved an iterative process beginning with line-by-line coding of meaningful text within each study. Studies were then re-assessed to ensure all relevant codes were identified, yielding 326 free codes. Similar free codes were grouped together, forming 72 “descriptive categories” in total, which were re-assessed for similarities and differences and reorganised, creating eight descriptive themes. Descriptive themes were peer-reviewed with the second researcher, aiding rigour and trustworthiness of the data analysis. Following discussion, descriptive themes were further condensed, creating four analytical themes (see Supporting information, Figure S1).

RESULTS

Study characteristics

Study characteristics are detailed in Table 1. Across the nine studies, 154 participants (111 women and 43 men) were recruited. There was notable variability in the reporting of sample characteristics. Age and gender demographics were reported in all studies. By contrast, ethnicity was only reported in one out of nine studies; type of surgery was reported in seven out of nine studies. Time postsurgery ranged between 1 and 35 months; however, only findings relating to ≤ 2 years postsurgery discussing weight loss and eating were extracted.

Statement of quality

As studies concluded as “poor” quality were excluded, this review represents credible and high-quality studies (see Supporting information, Table S4).

Analytical themes

Four interlinked analytical themes were yielded from the thematic synthesis (Figure 2). BS affected three aspects of individuals' lives: the relationship with food, with oneself and with others. “Unfinished journey” represents the challenges experienced by some in these areas. Each theme and subtheme is described below.

Relationship with food

Reduced gastric capacity significantly changed relationship with food. The portion sizes and foods once tolerated by the body now led to gastrointestinal side

effects including dumping syndrome, vomiting and reflux. Physical pain upon eating inflicted psychological distress as food choices were now severely restricted, triggering regret in the decision to undergo surgery for some:

The hardest time was the first fifteen days after operation. I had a nervous breakdown and cried loud after I was discharged from hospital ... I told my mum that I wish I hadn't had this operation and I wouldn't be able to eat for the rest of my life²⁴

This lack of acceptance was echoed in another participant's statement as she described continuing to indulge in unhealthy eating habits despite the physical consequences:

I was fond of good food and didn't take good care of myself. I always acted wilfully and often lost my temper ... I was often hospitalised and felt physical discomfort²³

However, gradually, participants acknowledged the only solution to this physical and psychological distress was by confronting these bodily changes and adopting new eating behaviours. This was needed to fulfil the renewed chance at life that surgery provided, as one participant stated:

I needed to change. Otherwise, life would be a waste. The failure to maintain and protect my own body would cause more burden and harm to it ... It's caused me pain already after several months, so I can't let it stay with me forever²³

Individuals embarked on a journey to re-establish their relationship with food. This involved understanding the food sizes and food composition the body now tolerated, to inform new eating habits.

You just have to find out how much you actually can eat and what you can tolerate It has been some challenge navigating, such a labyrinth ... one has felt some pain at times because you had to figure out what you could do. But it's not been hard in that sense, just a challenge¹⁹

The body forces you, tells you to take small bites, chew thoroughly. You bite so much that your mouth hurts. So pain makes you bite more slowly²³

Over time, this approach led to the development of dietary “rules” that prioritised nutritionally dense foods,

TABLE 1 Study characteristics

First author and reference	Study aim(s)	Country	Sample size	Gender	Ethnicity	Age range (years)	Data collection method	Data analysis method	Surgery type	Time since surgery
Earvolino-Ramirez ¹⁶	To explore the lived experience of an individual who has undergone BS	USA	1	1 female	Not reported within primary study	55	Face-to-face interview	Phenomenology	1 Gastric bypass	8 months
Engstrom and Forsberg ¹⁷	To investigate the change process experienced by patients before BS, as well as 1 and 2 years after surgery	Sweden	16 (1 year postsurgery) 11 (2 years postsurgery)	12 females 4 males (1 year postsurgery) 9 females 2 males (2 years postsurgery)	Not reported within primary study	24–44	Prospective Interviews (prior surgery, 1 year postsurgery, 2 years postsurgery)	Grounded theory	Not reported within primary study	≤24 months
Silva and Maia ¹⁸	To investigate patients' experiences of adaptation related to obesity treatment, including their expectations, beliefs, challenges and difficulties 12 months after surgery	Portugal	30	20 females 10 males	Not reported within primary study	Mean 40.17	Interviews	Grounded theory	22 Gastric bypass 8 gastric sleeve	12 months
Jensen et al. ¹⁹	To describe the lived experiences of changes in body image in young women who have undergone BS	Denmark	5	5 females	Not reported within primary study	20–25	Semistructured interviews	Phenomenology	5 Gastric bypass	1–12 months
Wiklund et al. ²⁰	To explore experiences with physical activity 1 year after BS	Sweden	24	17 females, 7 males	Not reported within primary study	21–49	Semistructured interviews	Content analysis	15 Gastric bypass 9 duodenal switch	12 months
Graham et al. ²¹	To explore how patients adjust to the social aspects of their lives in the first 2 years following surgery	UK (North East England)	18	11 females 7 males	Not reported within primary study	36–64	Face-to-face semistructured interviews	Constructivist grounded theory	7 Gastric sleeve 11 gastric bypass	5–24 months

(Continues)

TABLE 1 (Continued)

First author and reference	Study aim(s)	Country	Sample size	Gender	Ethnicity	Age range (years)	Data collection method	Data analysis method	Surgery type	Time since surgery
Groller et al. ²²	To obtain patient descriptions about the weight loss surgery experience	USA	11	7 females 4 males	11 Caucasian 1 Hispanic	47–57	Semistructured face-to-face interviews	Inductive content analysis	6 Roux-en-Y gastric bypass 5 gastric sleeve	12–18 months
Lin and Tsao ²³	To explore how patients adapt to their changed body and life within the first year of receiving BS	Taiwan	17	11 females 6 males	Not reported within primary study	20–46	Semistructured face-to-face interviews	Grounded theory	9 Roux-en-Y gastric bypass 8 gastric sleeve	12–35 months
Hergül and Özbayır ²⁴	To examine experiences of patients who have undergone BS	Turkey	32	27 females 5 males	Not reported within primary study	20–56	Semistructured face-to-face interviews	Phenomenology	Not reported within primary study	1–>25 months

Abbreviation: BS, bariatric surgery.

smaller portion sizes and regular meals. Unhealthy foods lost appeal and, if tempted by food cravings, participants exerted control over these. The relationship with food became disciplined and intuitive eating became the new reality:

I feel discomfort and nausea when I'm eating foods that are too heavy and filling. In order to avoid vomiting and to enjoy eating, I try to eat the healthy foods and foods that I like first. For example ... I don't eat a lot of starchy foods and now eat more eggs and meat, which are rich in protein²³

I have no food cravings in the same way, not at all. And if I get it, then there is the small bowl. That's what I need¹⁹

Relationship with oneself

Altered dietary patterns resulted in significant weight loss among participants across all studies which remarkably improved participants' relationship with their physical bodies. Improvement of obesity-related co-morbidities, renewed energy and reduced bodily pain were recurring positive experiences of weight loss which motivated individuals to be more physically active:

I had a lot of problems with my knees and feet and so on. Now I don't have as much problem with my knees and feet²⁰

We have a route at home in the country that is four and a half kilometres and I started walking it several weeks ago and I thought, I'll walk, yes, a third of the way and then go back, but then I felt after I had walked a third that “goodness me”, that was nothing and so I carried on the whole way. And that is something that was totally out of the question before²⁰

Improved physical capabilities meant participants no longer needed assistance with completing physically demanding tasks or self-care, increasing their independence:

I'm painting at the moment, I have closed down and carried a whole load of furniture and fixed things. I fled a bit before maybe took in someone to help me, when it got particularly bad Now I do these things by myself²⁰

Physical wellness subsequently improved psychological wellbeing as participants revealed several positive

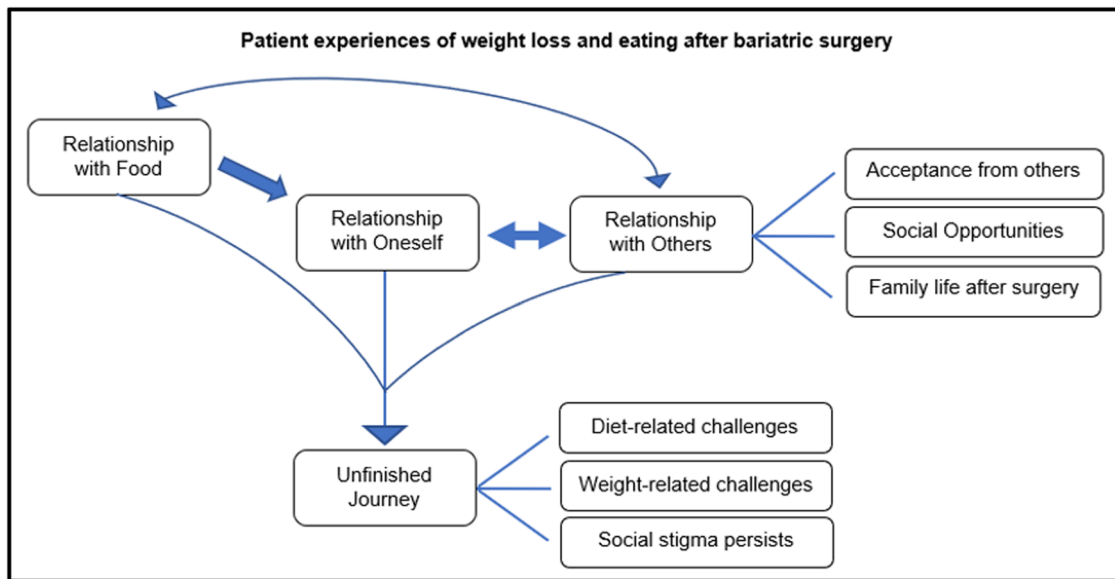


FIGURE 2 Concept map.

emotions including relief, freedom alongside enhanced self-perception and confidence:

I felt as if I got rid of a huge physical load. I became lighter and felt very relaxed²⁴

I look at my old photos and ask myself how I lived with that appearance before. I feel as if I were someone else. I like myself more, my self-confidence has increased and my whole life has changed²⁴

The renewed relationship with one's physical body transformed previous feelings of self-neglect to increased self-worth as participants reported greater interest in taking care of their bodies:

I'm feeling this good and loving my body now, where before I used to ignore it. I just you know, it was like you just accept it – that's the way life is going to be [overweight]¹⁶

Relationship with others

Healthy eating and weight loss positively affected many participants' familial and social relationships.

Acceptance from others

Weight loss emanated a sense of normality and acceptance within society. Participants reflected on how they no longer stood out because of their weight:

I am thinner ... normal, the same as everybody¹⁸

Weight loss meant participants felt they were finally viewed for who they actually were and not their appearance, as one participant stated:

People look at you in a different way, they are not judging you because you are fat, lazy ... people start to look to you, not your appearance¹⁸

Positive comments from friends and family reaffirmed the sense of acceptance and heightened participants' sense of achievement:

You feel better; you get approval then ... approval from other men¹⁹

My family is always saying that I am fine, I am more beautiful ... and this is good, I feel better when I hear these things. You know, I was not used to hearing these things and now it is different¹⁸

Societal acceptance was also attributable to the removal of weight- and diet-related restrictions in public situations, contributing to a sense of freedom:

I used to feel pressured into having to sit in large seats on planes and felt unable to ask for two portions of food. But after surgery, that pressure disappeared.²⁴

Overweight people are offered limited choices and they are told there is only one alternative. Now when I go to a department store and buy a t-shirt that I like in 3 min, I say that is the way I have always wanted it to be²⁴

Social opportunities

Social acceptance alongside vitality and confidence following weight loss, encouraged participants to broaden horizons in several aspects of their lives, such as pursuing new professional opportunities and expanding their social lives:

Before it was just get to work, to get out of the car, everything was a task ... And now when I get home its like, well now I shall do this and that and I have other activities besides my job, like evening courses¹⁷

it is easier to find a job ... only this month I had two offers!¹⁸

Family life after surgery

New eating patterns and physiological wellbeing improved family life for many. Some reflected on how the journey to developing new eating patterns strengthened family relationships as others extended support, assuaging participants worries and empowered them through the challenges of eating after surgery, as one participant stated:

Sometimes it was too late and I vomited on my clothes or the floor and they [family] cleaned up everything ... My success is only thanks to them.²³

Another highlighted how her newly acquired passion for healthy eating encouraged her to extend dietary support to her family and improve their diet and health:

I need to eat meat and get more protein. This diet has also affected my family. My mother started eating the same way and her health improved²³

In terms of weight loss, participants buoyantly described how they now had the energy to participate in family activities and elation regarding the potential to start a family:

I'm looking forward to doing even more things together with my son, not just standing back and watching, I can be part of it all²¹

Having children is now a part of my future¹⁹

Unfinished journey

Despite the positive experiences related to weight loss and eating postsurgery, many participants highlighted challenges in accepting and maintaining this new lifestyle and for some, BS did not resolve all the weight- and lifestyle-related issues that were faced prior to surgery. For these individuals, the journey to attaining improved physical and psychological wellbeing was an ongoing process.

Diet-related challenges

Participants strived to maintain healthy eating; however, several accounts revealed how this was onerous and a daily battle:

I have never thought ... it is hard, every day, every week ... it is hard. And you eat but it is not the same¹⁸

A challenge recurrently mentioned was psychological hunger, or the persisting desire to eat despite stomach fullness, which surgery did not resolve:

You're actually not hungry. Your brain keeps telling you that you are hungry. The stomach on the contrary is about to burst ... this need it's not just removed by surgery ... there's a psychological need, all the time¹⁹

Some felt postsurgery diet recommendations were excessive, burdensome and deviated from a normal way of eating, leading to selective adherence to healthy eating practices in some cases.

The size of your meal, your protein. You're not eating ... it's called a 30/60 rule, you can't drink 30 min before and 60 min after you eat and that's forever, the rest of your life²²

I rarely have a cup of tea now. I used to drink it like it was going out of style ... I don't know if I'm replacing the sugar hit now, but I drink more pop [carbonated drinks] than I did before and I still put sugar in my tea. I pick [graze], I used to pick all the time and still do, but now I pick sensibly²¹

Emotional eating persisted, which one participant stated was attributable to marital conflict that emerged after surgery:

Since the bariatric surgery, the wife and I have been having problems, and it's so frustrating, so I've had some chocolate²¹

One of the included studies highlighted the desire for healthcare professional (HCP) support to help participants cope with the psychological aspects of eating such as emotional eating and identifying hunger and fullness cues.²²

Weight-related challenges

Challenges were reported in mentally adapting to the drastic changes in appearance following weight loss. One participant commented how thin and fragile her body had become which was difficult to accept:

While I was losing weight, I was touching my ankles, wrists and groins. I had never felt my bones before. Feeling my bones makes me feel as if it were not my body²⁴

Conversely, others felt they still looked obese despite considerable weight loss, signifying how BS did not resolve body image issues for some:

Your mind is telling you you're too big, but it's your clothes, they tell you something else ... it's weird, I don't think I will ever get rid of my stomach²¹

The onset of excess skin resulting from significant weight loss also led to the re-emergence of several issues including severe body dysmorphia. Redundant skin led to avoiding public situations, difficulties engaging with physical activity and presented new healthcare needs:

It is difficult look to the mirror and see you ... your body ... all of your skin ... When you are dressed there is no problem ... but when you are naked it is, it is very difficult to accept. I had never thought that I would feel this way¹⁸

I don't go to any swimming pool, as there is so much excess skin on my arms and stomach ... Swimming is something that I used to do, regularly then, and it felt good for my back and that. But I don't do it now because of my arms²⁰

I have periods when I upset myself a lot about everything, and it's hard, you always have lumps of skin that bulge out under your arms. If you sleep on your belly at night, you get fungus or heat eczema ... I just want to cut everything away, everything that is hanging out¹⁷

This excess skin meant individuals had not reached the end of their weight loss journey:

But now there is suddenly a lot of skin that I have to look at ... There is still something left, which means that you're not quite there ... I'm not finished yet.¹⁹

Social stigma persists

A small number of participants discussed how others did not understand the concept of BS and the effort required to achieve positive outcomes, contributing to ongoing stigmatisation. One participant recalled being told by a family member that BS was the “wrong way” to lose weight:

I just talked to my mother-in-law the other day and she goes “Oh Jenny [participant's sister-in-law], she's lost 36 pounds and she's not going to have sagging skin because she's doing it the right way”. And of course, I'm thinking “Because I've done it the wrong way?”¹⁶

Stigma was also apparent when eating in public. Some felt chastised for choosing small portion sizes or being unable to finish large meals. One participant described the need to explain the concept of BS to others in a fight for acceptance:

When I am in a restaurant my friends say eating out is a waste of money for me ... My friends ask me why I tell the servers and I'll say because I feel like I have to explain why.²¹

These profound difficulties signified how surgery was not a quick fix to the problems associated with obesity for some individuals. The journey to attaining a better quality of life after surgery was an ongoing process.

DISCUSSION

Summary of results

This review unveiled in-depth insights into life following BS. Following surgery, participants experienced significant gastrointestinal discomfort upon eating, restricting food choices and initially provoking psychological distress. However, many gradually accepted their changed body and engaged in healthy eating strategies. Weight loss led to improved physical health, body image, societal acceptance and ability to pursue active roles within their professional, social and family lives.

However, many faced challenges in adapting to life after BS, including unfulfilled eating desires and excess skin resulting from significant weight loss, contributing to ongoing poor self-image. Some noted how obesity-related stigma shifted to stigma regarding

the participants' methods of weight loss and eating. These ongoing challenges signified how the journey towards a more desirable life did not end after surgery.

Discussion of main findings

Findings from this meta-synthesis mirror the meta-synthesis by Coulman et al.¹¹, exploring patient experiences of the outcomes of BS. Although surgery provided many with “structure” and “physical control” around eating, some reported relapse into emotional eating and gradually being able to tolerate more foods, creating difficulties in maintaining healthy eating. Their findings elaborated on how these experiences contributed to longer-term weight regain. Furthermore, improved physical and psychological wellbeing was compromised by excess skin leading to “severe body hatred” and diminishing the sense of “normality” and some recognised the ongoing social issues and negative judgement from others.¹¹

This correlates with findings from a recently published systematic review examining weight bias and its impact on physical, psychosocial and behavioural outcomes in patients seeking or who have received BS.²⁵ Some studies reported ongoing body image concerns, weight over-valuation and weight stigma from others postsurgery. Interestingly, weight bias postsurgery was also associated with less weight loss and a poorer relationship with food, including loss of control around eating and emotional eating, highlighting how body image issues may precipitate relapse of poor eating habits.

Participants in the present study elicited how the challenges in maintaining dietary changes were attributable to inadequate support from HCPs. This concurs with previous qualitative research which revealed HCPs heavily concentrate on “calories in and out” without focus on psychological behaviour including motivation and food desires contributing to poor adherence to dietary guidelines and weight regain.²⁶

Furthermore, a recently published qualitative study by Coulman et al.²⁷ investigated experiences of follow-up care in the UK, in which participants felt “abandoned” following surgery as a result of poor organisation of aftercare support. Some expressed support was only provided when participants themselves initiated contact with HCPs.²⁷ Moreover, current UK guidance suggests follow-up of 2 years within bariatric services. However, a recurring theme in a review by Parretti et al.²⁸ was the need for extended follow up care within bariatric services in which individuals would be able to continue to seek specialist psychological and dietary support. Insufficient follow up plans may further explain why some individuals struggle to adhere to healthy eating guidelines.

The present review highlighted the powerful impact that family had on participants' relationship with food.

Ogle et al.²⁹ explored the role of social support in participants' lives following surgery. In their qualitative study, some participants expressed how family supported them to adhere to the postsurgery diet regimen by offering emotional support and even adjusting their own eating behaviours to accommodate participants' postsurgery lifestyle. Conversely, others felt their family were apathetic regarding participants' weight loss and changed eating habits. Participants desired more support from their family and suggested that educational materials and booklets targeting families could help effectively prepare them for the implications of BS.

The psychological challenges, particularly in dealing with excess skin, reiterated in the current systematic review raised questions as to whether adequate psychological support is provided following surgery. Previous research comparing the views of HCPs versus patients on the postsurgery experience highlighted how participants felt emotional needs were overlooked, including in adjusting to the non-obese self and excess skin, because HCPs focused primarily on weight loss and biochemical measures. HCPs highlighted only patients identified as “struggling” received psychological support, and this support was not a standardised part of the care pathway, meaning many were not referred to psychologists.³⁰ HCPs underestimation of psychological stressors may exacerbate patients' ability to develop a positive body image postsurgery.

Importantly, although the need for psychological support postsurgery has been identified in the current study, the mental health status of participants prior to surgery was not reported within the included studies. This raises questions as to whether participants had any pre-existing mental health concerns that influenced their experiences and psychological wellbeing postsurgery. Thompson et al.,³¹ in their prospective study, compared weight loss and mental health-related quality of life following surgery between participants with diagnosed psychiatric disorders and those with no mental health diagnoses. Weight loss at 12 months postsurgery was not significantly different between both groups; however, psychological quality of life was poorer in those with psychiatric disorders, which was statistically significant.³¹ These findings suggest that those with pre-existing mental health conditions may be at greater risk of unfavourable psychological outcomes following BS. Psychological support postsurgery is certainly important but equally, mental health screening as part of the decision-making process prior surgery is essential to determine whether surgery is in the individual's best interest.

Expectations for BS is another important consideration for preoperative support because participants in the current review highlighted discrepancies between their expectations of BS and perceived reality postsurgery. Similarly, a recently published study by Dijkhorst et al.³² investigated pre-surgical patients' expectations of life

following BS, using a scale score in which 61 participants (18.5%) scored at the ceiling for the scale (i.e., 100), indicating high expectations for how their life would be after surgery. Improvements in physical health, appearance, confidence and happiness levels were rated the highest among participants. Unmet expectations may be another factor increasing the risk of poor psychological outcomes postsurgery.

Strengths and limitations

This systematic review and qualitative synthesis provides insights from recent literature providing a comprehensive and updated overview. This qualitative review in particular advances our understanding of the lived experiences specific to the first 2 years following surgery which is an important adjustment period for patients. The weight loss journey within this timeframe can help guide practitioners with early identification and management of challenges, mitigating risk of poor outcomes longer-term.

The use of a data extraction tool is a strength of this study as it provided a consistent and objective approach to gather relevant information for data analysis. Risk of researcher bias and reflexivity were carefully considered throughout the research process (see Supporting information, Table S5). To enhance dependability and confirmability, validated methods for data synthesis were used to support a comprehensive analysis. Moreover, peer-review throughout the research process provided fresh insights to the data analysed, aiding rigour and helped maintain an objective perspective on the data. To aid credibility and trustworthiness, the analysis process was transparently reported, in line with PRISMA¹³ best practice guidance and findings were consistently supported with participant quotes from all studies.

Because of the project's scope, searches were limited to four databases and grey literature was excluded. Language bias was another limitation because only English Language studies were included. As a result of these limitations, important findings may have been missed. To maximise retrieval of relevant studies, a comprehensive and sensitive search was created and transparently reported in the relevant appendices, aiding dependability.³³

Study selection was performed by a single researcher, introducing risk of error and selection bias. However, following the predefined eligibility criteria provided a systematic approach and further increased dependability.

Additionally, because the included studies did not investigate the mental health status of participants prior to surgery, pre-existing mental ill health could have been a contributing factor to the psychological concerns described by participants following surgery. This confounding factor introduces a risk of bias for this study.

Quality appraisal was incorporated as part of the eligibility criteria. There is considerable debate regarding the appropriateness of excluding qualitative studies considered to be poor quality, when conducting a qualitative synthesis. Some researchers would argue that omission of studies considered to be low quality introduces risk of excluding distinctive and important contributions.³⁴ However, others have reported that inclusion of poor quality studies do not appear to make any meaningful contribution and in fact, can cause problems in the synthesis.³⁵ Because of the scope of this project, quality appraisal was employed as part of the eligibility criteria to produce a manageable number of studies for analysis. Although limiting the analysis to high-quality studies enhanced credibility of the findings in this review, it is also acknowledged to be a limitation because it may have led to the omission of unique findings.

Transferability of the findings to the UK population could be considered a limitation as only one UK study²¹ was included. However, the findings from this study reflected those of the remaining studies, supporting relevance of the synthesised results to UK practice. The findings from this review predominantly represented female perspectives. This could be explained by the fact that more women undergo surgery, reducing the pool of men eligible to participate in BS research, as demonstrated by NHS obesity statistics which states 79% of surgery candidates were female in 2019.² Importantly, participant ethnicity was poorly reported within primary studies, also raising questions regarding transferability of findings and whether they represent an ethnically diverse population.

CONCLUSIONS

For many, BS provided the means to lose weight and develop a healthier relationship with food, subsequently improving physical and psychological wellbeing and social life. However, for others, surgery was only part of the solution to obesity, and many found themselves contending with an array of challenges, highlighting how these patients' weight loss journey did not end after surgery.

Clinical implications

The challenges experienced following BS bring implications for clinical practice. This research highlighted an array of psychological challenges faced by patients' postsurgery. NICE guidance¹ emphasises that clinicians should undertake a "comprehensive pre-operative assessment of any psychological or clinical factors that may affect adherence to postoperative care requirements", as part of the decision-making

process for the candidate's eligibility for surgery. It is pivotal that if any mental health concerns are identified, psychological support is prioritised prior consideration for surgery. If surgery is considered to be appropriate, preoperative counselling to help patients maintain realistic expectations for BS is pivotal. This may mitigate the risk of psychological issues following BS as described in this study and subsequent poor health outcomes in the longer-term.

Ongoing psychological support postsurgery must also be implemented to combat the risks of BS, such as excess skin. The BOMSS guidelines³⁶ for psychological support for BS patients outline a stepped care model on how psychological needs can be identified and addressed in clinical practice. Incorporating these guidelines as standardised practice in the patient's care pathway may help to facilitate effective psychological support.

Psychologists are a pivotal part of the MDT who can help with the implementation of this guidance to support these patients. However, it is also essential that dietitians and other HCPs are equipped for managing psychological challenges that could be raised during consultations, via appropriate training courses as part of continued professional development. HCPs entering this area of healthcare should be signposted to appropriate training. For dietitians, education on healthy eating needs to be balanced with supporting patients to combat the psychological aspects of eating, such as food cravings and emotional eating.

Lastly, this review highlights the importance of holistic healthcare provision, with consideration for the impact of BS on families and contrariwise the family's role in supporting patients postsurgery. NICE guidance¹ states families should be included in the discussion when choosing BS; however, practitioners should involve family after surgery as well, addressing their concerns in family consultations and developing educational resources to ensure families are equipped for dealing with the implications of BS, which may ultimately help patients adapt to life after surgery.

Implications for future research

Only one UK-based qualitative study met the inclusion criteria for this systematic review, highlighting the scope for conducting more primary research of patient experiences of BS in the UK, capturing both male and female perspectives.

Future qualitative research could investigate families' attitudes towards living with someone undergoing BS, aiming to establish how these groups can be supported in clinical practice. Research investigating HCP perspectives of managing psychological challenges could help with development of protocols and training pathways to support clinicians in clinical practice.

AUTHOR CONTRIBUTIONS

Mariha Ansari and Sarah Serjeant were involved with study design, interpretation of results, and study write-up. Database searching, screening, data extraction and initial data analysis were completed by Mariha Ansari as lead researcher.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

TRANSPARENCY DECLARATION

The lead author affirms that this manuscript is an honest, accurate and transparent account of the study being reported. The reporting of this work is compliant with PRISMA¹³ guidelines. The lead author affirms that no important aspects of the study have been omitted and that any discrepancies from the study as planned have been explained.

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PEER REVIEW

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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