

BMJ Open Experiences and expectations of patients with obesity 3 months after metabolic and bariatric surgery: a qualitative study

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To cite: Li N, Fan Y, Deng L, *et al.* Experiences and expectations of patients with obesity 3 months after metabolic and bariatric surgery: a qualitative study. *BMJ Open* 2025;**15**:e091390. doi:10.1136/bmjopen-2024-091390

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<https://doi.org/10.1136/bmjopen-2024-091390>).

Received 19 July 2024

Accepted 21 February 2025



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ABSTRACT

Objectives Patients experience significant physical and psychological changes within the first 3 months post-surgery, yet few studies focus on patient experiences during the early postoperative period. This study aimed to explore the patient experiences and expectations for nursing follow-up during the home recovery period following metabolic and bariatric surgery.

Design A qualitative descriptive study design was used. Participants were selected using a purposive sampling method, and semi-structured interviews were conducted to collect data, which then were analysed using the content analysis method.

Setting The study was conducted in a tertiary hospital in eastern China.

Participants 21 patients (8 men and 13 women; aged 18–51 years) who received metabolic and bariatric surgery were included, with 16 within 3 months post-surgery and 5 beyond 3 months.

Results Four themes emerged: (1) Physical and psychological rehabilitation: patients were enthusiastic and motivated about their physical recovery and mental well-being. (2) Stress and challenges: patients encountered various pressures and challenges, especially in dietary transitions and emotional management. (3) Adjustment and adaptation: patients were committed to managing discomfort and developing healthy dieting strategies through personal effort and diverse support. (4) Expectations for comprehensive support: patients desire comprehensive support and services from healthcare providers.

Conclusions Healthcare providers should focus on the early postoperative experiences of patients and deliver personalised health education and emotional support to help them navigate the postoperative adaptation and ultimately achieve long-term health goals.

INTRODUCTION

The global prevalence of obesity has increased significantly due to shifts in dietary habits and lifestyles, posing serious health and economic challenges. Currently, 16% of adults worldwide are classified as obese.¹ Conventional medical treatments often fall short in managing obesity and its related complications, making sustained long-term weight loss difficult to achieve.² With laparoscopic surgery advanced, metabolic and

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The study used qualitative descriptive design, providing comprehensive, in-depth insights into patient experiences and expectations during the early postoperative phase following metabolic and bariatric surgery.
- ⇒ To the best of our knowledge, this study is the first qualitative study to capture patient perspectives within the critical 3 months post-surgery, informing tailored postoperative care strategies.
- ⇒ Data from five participants beyond 3 months post-surgery were collected based on retrospective self-reports, which may introduce recall bias, potentially affecting the detail and accuracy of patient experiences.
- ⇒ This study was conducted at a single tertiary hospital, which may limit the transferability of the findings.

bariatric surgery has become an increasingly popular intervention for achieving substantial weight loss among patients with obesity.³ Metabolic and bariatric surgery could alter the digestive tract's volume or pathway, modifying food intake and absorption to achieve weight loss and improve metabolic health.^{4 5} In China, 90 million people are affected by obesity, with 12 million of them classified as severely obese, making it the country with the highest prevalence of severe obesity globally.⁶ This demand has led to a rapid increase in metabolic and bariatric surgeries, with approximately 30 071 procedures performed in 2022—a 20% rise from the previous year.⁷ Aligned with Enhanced Recovery After Surgery protocols, patients are often discharged 1–2 days post-surgery, with home-based recovery and care becoming central to their postoperative management.⁸ Therefore, healthcare providers need to focus on home-based recovery and keep continuous postoperative follow-up, which is essential to sustain long-term weight loss and minimise postoperative complications.⁹ The European Association for Endoscopic Surgery guideline

on metabolic and bariatric surgery recommends scheduled, multidisciplinary follow-up post-surgery to support patients undergoing metabolic and bariatric surgery across various aspects of life and maximise the benefits of surgery through a high-frequency and diverse follow-up model.¹⁰ Nurses play a vital role in the follow-up multidisciplinary team, managing follow-up schedules, providing guidance and investing considerate time in postoperative care. During the first year after surgery, patients need to visit outpatient settings in the hospital five times. However, the follow-up adherence is suboptimal, with rates declining from 63.97% in the first postoperative year.^{11–13} Patients frequently report feelings of isolation and abandonment, which encounter discontinuation of follow-up,¹⁴ which could lead to increased postoperative complications, poorer weight loss outcomes and a heightened risk of malnutrition.¹⁵

The early postoperative stage (within 3 months post-surgery) is critical for adapting to the significant lifestyle and dietary changes, often involving challenges such as unpredictable gastrointestinal side effects or a temporary ‘loss of body control’ when eating.^{16 17} Despite these challenges during this time, patients tend to be highly motivated and self-driven achieve self-transformation and rapid weight loss could greatly boost the confidence of patients to take action. Effective support from nurses during this stage is crucial to promote lasting habits and weight control.¹⁸ Exploring patient experiences and expectations during this early recovery phase is essential for designing follow-up services that align with patient preferences, which can, in turn, improve patient follow-up adherence.^{19 20}

While several qualitative studies have explored patients’ post-surgical experiences, most have focused on patients 6 months or more after surgery. Lier *et al*²¹ examined patient experiences 5 years post-surgery, finding that patients experienced lifestyle and diet changes and positive emotional experiences resulting from weight loss, and meanwhile, they reported physical discomfort and body image concerns related to excess skin post-surgery. Lin and Tsao²² interviewed 17 patients 2 years post-surgery and reported that managing complications while adjusting to a small stomach is challenging. Hou²³ explored the experiences of patients 6 months post-surgery, identifying various positive outcomes including normalised laboratory parameters and increased self-confidence, and negative effects like hair loss and skin laxity. However, fewer studies focus on the first 3 months post-surgery—a pivotal period for establishing long-term health behaviours. This study aims to fill this gap by exploring patient experience and expectations during this early stage.

METHODS

Design

A descriptive qualitative method using content analysis was employed to gain a deep understanding of patients’ experiences and expectations within 3 months after

metabolic and bariatric surgery.²⁴ The study followed the COREQ (Consolidated Criteria for Reporting Qualitative Research) checklist to ensure thorough reporting.^{25 26}

Participants

Patients who received metabolic and bariatric surgery in a hospital in Jiangsu, China were selected using a purposive sampling method to ensure the maximum variation in terms of age, gender and time since surgery. Inclusion criteria were age over 18, undergoing a first-time metabolic and bariatric surgery, capacity for verbal communication and absence of intellectual or psychiatric disorders. Patients with recent severe postoperative complications such as gastrointestinal fistulas or bleeding were excluded due to potential readmission bias. Researchers verified the surgery dates through hospital records, contacted the patients by phone, explained the study purpose and procedure and obtained their informed consent. The sample size was determined by data saturation, which was achieved when no new information emerged.²⁶

Data collection

One-to-one, semi-structured interviews were conducted with patients by the first author at Nanjing Drum Tower Hospital, a large comprehensive tertiary hospital performing over 600 metabolic and bariatric surgeries annually. Each participant completed a single individual interview. The interviewer, a female nursing postgraduate student with 2 years of experience in qualitative research and nearly 10 years of clinical nursing experience in metabolic and bariatric surgery conducted interviews in a private and quiet consultation room to ensure confidentiality. Interviews were audio-recorded with the participant consent, and participants completed a brief demographic questionnaire before the interview.

The interview guide was developed by the research team through literature review and group discussion, with pilot testing conducted on three patients to refine questions. The interview questions include: (1) Can you describe your daily life at home after surgery? (2) What challenges have you encountered in managing your postoperative symptoms? What measures do you take to address these challenges? (3) What are your emotional and psychological experiences after surgery? (4) Could the available healthcare services and resources meet your needs? (5) What are your expectations for nursing follow-up care after surgery? The interviews were performed based on the techniques of timely and effective questioning and repetition and clarification, in a language-neutral, non-judgemental and non-inducing manner. The body language of the participants was observed and noted by the interviewer. Each interview lasted for 39±13 min.

Data analysis

Interviews were transcribed verbatim by the interviewers within 48 hours, incorporating observations of non-verbal behaviour in the interview notes. Content analysis was used to analyse data using NVivo (V.14).^{24 27} Two researchers

read the transcribed interviews repeatedly and carefully to obtain a sense of the whole of the interviews and then coded the meaningful data units line by line. Discrepancies were resolved through discussion until coding consistency was achieved. The codes were compared and similar codes were categorised into subthemes and then main themes, which were reviewed and confirmed by two additional researchers who had not been involved in the initial coding process to confirm robustness. The relationships between themes were identified, and analysis was performed cyclically until data saturation, with no further emerging themes.

Rigour

The rigour and trustworthiness of the study are maintained through credibility, transferability, dependability and confirmability.²⁸ Credibility was supported by the interviewer's extensive experience in the nursing of metabolic and bariatric surgery. These experiences helped researchers establish trusting relationships with participants, who could feel comfortable expressing their genuine post-surgery experiences. Besides, the participants with diverse backgrounds could broaden the scope of the data, enhancing the potential applicability of the findings to other patients undergoing similar surgeries. Dependability was ensured by peer verification of content and repeated checks for data accuracy. The researcher remained faithful to the narratives derived from the interview transcripts, avoiding personal biases, thereby ensuring the study's confirmability.

Patient and public involvement

The study focused on the patient's perspective. Patients and/or the public were not involved in the design, conduct, reporting or dissemination plans of this research.

The patients participated voluntarily and signed written informed consent. Personal identities were strictly confidential, by assigning each participant an anonymous number, for example, (P1).

RESULTS

A total of 21 participants (8 men and 13 women) were included in this study. Participant demographics are presented in [table 1](#). Four major themes emerged from the data: (1) physical and psychological rehabilitation; (2) stress and challenges; (3) adjustment and adaptation; (4) expectations of comprehensive support. [Table 2](#) presents the analysis process.

Physical and psychological rehabilitation

Moving towards health

Participants reported significant physical improvements following surgery, including reduced obesity-related comorbidities, regular daily routines and healthier dietary habits.

Improvements in health conditions after surgery: My menstrual cycle is regular and my sleep is good. I used to

Table 1 Demographic information of 21 participants

	N (%) or mean±SD
Gender	
Female	8 (38)
Male	13 (62)
Age (years)	30±7.38 (18–51 years)
Type of surgery	
Sleeve gastrectomy	17 (81)
One-anastomosis gastric bypass	4 (19)
Postoperative (years)	
3 months	16 (76)
≥3 months	5 (24)
Relationship status	
Married	9 (43)
Single	12 (57)

rely on medication to fall asleep, but not anymore. I feel much better than before. (P5)

Changes in lifestyle habits: I used to stay up late, but now I have a regular schedule. For instance, I sleep before 23:00 and wake up at 06:00 or 07:00. My days feel longer and more fulfilling. (P6)

Changes in dietary habits: The biggest change is my diet. I used to frequently order takeout or eat snacks, but now my appetite has decreased significantly and I prefer healthier food. Additionally, I pay more attention to the nutritional contents of the food. (P1)

Rebuilding self-identity

Patients mentioned that the surgery boosted their motivation for self-improvement, and the enhancement in body image significantly improved their self-confidence, transforming them from previously being self-conscious to becoming more self-assured.

Beliefs and motivation brought about by the surgery: My outlook has changed significantly. Since surgery, I have felt a need to improve my health, so I bought a sports watch before my first monthly check-up. (P9)

Changes in self-confidence brought about by body image: I used to feel inferior because of my weight, but now I'm confident. I wanted to exercise before, but I never did. Now my physical ability has improved and I'm more open to sharing my emotional journey. (P4)

Stress and challenges

Multisymptom burden

Patients experienced early postoperative symptoms such as constipation, diarrhoea, orthostatic hypotension, hypoglycaemia and other symptoms, but often normalised or ignored these symptoms.

Normalising the symptoms: I think it should be a normal phenomenon, and it is probably the same for everyone after surgery. (P17)

Table 2 Themes, subthemes and corresponding codes

Theme	Subtheme	Codes
Physical and psychological rehabilitation	Moving towards health	Improvements in health conditions after surgery
		Changes in lifestyle habits
		Changes in dietary habits
	Rebuilding self-identity	Beliefs and motivation brought about by the surgery
		Changes in self-confidence brought about by body image
Stress and challenges	Multisymptom burden	Normalising the symptoms
		Choosing to downplay the symptoms
	Challenging diet transition	Experiencing appetite deprivation
		Unable to tolerate specific foods
		Confronting their own dietary habits
	Challenges in emotional management	Emotional experiences brought about by dietary deprivation
		Emotions influenced by weight
Adjustment and adaptation	Symptom self-coping methods	Individualised strategies
		Avoiding stressors
		Compromise or acceptance
		Taking extreme measures
	Taking personal responsibility	Independent decision-making
		Persistence
	The contribution of support	Support from family members
		Support from peers
		Support from professional medical staff
		Support from online information
	Expectations of comprehensive support services	Emotional support by professionals
		More online interactive communication
	Desire for personalised nursing care	Introverted personality and social challenges
		Knowing the reasons: greater understanding
	Balancing weight and health	Key period for weight loss
		Prioritising health over rapid weight loss

Choosing to downplay the symptoms: I feel embarrassed that so many people offer help for what I see as a minor problem. (P2)

Challenging diet transition

In the first 3 months post-surgery, patients gradually transitioned from a liquid diet to a regular diet. Initially, they experienced a desire to eat but were unable to do so. They attempted to eat following the suggestions from healthcare providers but struggled to consume adequate amounts of food. During the adjustment period, patients needed to modify their eating habits and often found themselves intolerant to certain foods.

Experiencing appetite deprivation: I had a craving for food in the first month, and I wanted to eat everything I saw. Now I do not have that obsession anymore. The doctors ask me to eat meat as they are afraid I'm anaemic, but I cannot eat at all. (P2)

Unable to tolerate specific foods: Noodles make me vomit. I did not realise it at first, but I kept vomiting whenever I ate those noodles. (P2)

Confronting their own dietary habits: I vomited a lot during the first 3 months. I do not know if it was because I ate too much food or ate too fast. Anyway, it was easy to feel uncomfortable and vomit. (P6)

Challenges in emotional management

Patients reported feeling frustrated due to the inability to eat desired foods, and fluctuating weight levels significantly impact their mood. When weight loss plateaued, patients experienced heightened anxiety.

Emotional experiences brought about by dietary deprivation: I was in a bad mood during the first month because I could not eat what I wanted, and I could not eat foods that I used to be able to eat. I felt very upset thinking I might never eat certain food again. (P3)

Emotions influenced by weight: When you realise that your weight has not decreased, you are disappointed and when you are physically weak, you start to regret having had the surgery. When I saw that my friends were enjoying eating, but I could not eat, I felt depressed. (P7)

Adjustment and adaptation

Symptom self-coping methods

In the first 3 months post-surgery, patients adopt various self-adjustment methods to enhance their comfort. Each patient employs individualised coping strategies.

Individualised strategies: I feel very uncomfortable after drinking, but better when I lie flat. And I cannot lie on my side, so I have to lie flat. (P21)

Avoiding stressors: One important thing in the first 3 months is that it is best not to live with your family, so I do not see family eating or hear their comments about eating more. I was living on my own at the time, and when I came home, there was nothing to eat and I did not want to cook, so I just ate protein powder or vegetable soup. These helped me transition smoothly in the first 3 months. (P12)

Compromise or acceptance: If I have gained weight and feel uncomfortable, I do not eat. I did not eat enough, and I got through it, but I was dizzy every day. (P7)

Taking extreme measures: I used to drink soup before I ate, which could make me feel full, so I do not eat much. Everything aims to control weight. Lower weight, and then focus on nutrition. (P3)

Taking personal responsibility

Patients viewed the decision to undergo surgery as a personal right requiring respect and support, free from external pressures or interference. They emphasised the importance of maintaining personal commitment, particularly during the critical initial 3 months, which they identified as essential for establishing long-term weight-loss outcomes.

Independent decision-making: I believe my suffering stems from my mother's decision about this surgery, which impacts my mindset. Only those who strongly want to do it should pursue the surgery and adhere closely to the recovery process. (P13)

Persistence: I regret not persisting from the start. I would like to share with everyone who is considering this surgery that you should stay committed, especially in the beginning. Early missteps will have lasting consequences. (P10)

The contribution of support

Patients viewed strong family and social support as crucial to successful recovery. In addition to guidance from healthcare providers, they noted that online resources served as significant sources of information during the post-surgery period.

Support from family members: My family is very supportive; they prepare foods I can eat and are mindful of my mood. Even something as simple as a homemade egg custard can be comforting. (P6)

Support from peers: I like to listen to other people's feelings, and I can learn from commonalities and differences. (P7)

Support from professional medical staff: If I have questions, I reach out directly to your group, because you are the professionals. (P20)

Support from online information: I frequently search on platforms like Xiaohongshu (a social media in China) for advice on postoperative care, and they offer various helpful recommendations. (P21)

Expectations of comprehensive support

The good nurse: closer connections

Patients expressed a need for increased online interactions with the healthcare team to provide timely guidance, reduce psychological stress and enhance the overall rehabilitation experience during the postoperative recovery period.

Emotional support by professionals: The most comforting support is when medical staff truly understand what I am going through. I feel so much better after talking to them. (P3)

More online interactive communication: After every check-up, we can connect online. This allows us to discuss what I need to pay attention to and deal with my doubts and questions. There is no need to come to the hospital every time, which is especially helpful for patients from out of town. (P4)

Desire for personalised nursing care

Patients expressed a desire for personalised and needs-based nursing care. Some patients reported difficulties articulating their needs or lacked experience with weight management, underscoring the need for foundational guidance on specific dietary and exercise practices, as well as the principles and benefits behind them.

Introverted personality and social challenges: I do not participate in WeChat discussions. I am more introverted and feel embarrassed to say anything because I think we are not close friends. (P21)

Knowing the reasons: greater understanding: My experience with weight loss is limited. Before I was discharged, I hoped for a more detailed explanation so that I could better understand my diet. Otherwise, I might make some mistakes, like eating the wrong fruits. (P16)

Balancing weight and health

Patients recognised that the initial 3 months post-surgery represented a crucial period for weight loss and expressed a desire to maximise this period through nursing support to achieve rapid weight loss. However, some patients are concerned about the risk of malnutrition and potential impacts on health, which could diminish dietary compliance. Therefore, they require guidance to achieve a balance between weight loss and overall health.

Key period for weight loss: I lost a total of 26 kg, 20 kg of which was in the first 3 months post-surgery. This rapid progress built my confidence and helped me establish lasting habits. (P11)

Prioritising health over rapid weight loss: As I age, I feel that health is the top priority. Some people focus solely on rapid weight loss, but I believe health is more important. I prioritise being healthy more than being skinny. (P13)

DISCUSSION

This study examined the experiences and expectations of patients during the initial 3 months of home recovery after metabolic and bariatric surgery. While patients generally reported positive physical and psychological changes, they also encountered significant pressures, especially regarding dietary adjustments. Patients managed discomfort and adapted to the lifestyle changes through personal efforts, as well as support from family, social networks and healthcare providers. Patients also reported their expectations for diversified follow-up from healthcare providers to meet their individualised needs. These findings indicated healthcare providers could develop and implement appropriate prevention and management protocols for common postoperative symptoms, and provide emotional support to patients during home recovery. For patients with complex or persistent mental healthcare needs, referral to specialised mental health professionals is necessary.⁵

This study's findings align with previous studies on the varied postoperative experiences of patients undergoing metabolic and bariatric surgery, both positive and negative responses.^{22 29 30} Similar to the study conducted by Lin et al.,²² this research highlights that patients face challenges such as dietary adjustments and food intolerances. However, most report improvements in their overall quality of life, with weight loss leading to both physical and psychological benefits. These consistent findings suggest that the challenges patients experience after metabolic and bariatric surgery are persistent and not limited to the early postoperative period. Clinically, this underscores the importance for healthcare providers to consider long-term, individualised interventions to address ongoing issues, in order to promote sustained recovery and optimise long-term outcomes. Unlike some studies, which attributed bad feelings largely to unsatisfied eating desires,^{22 31} the results of this study highlight weight plateauing as the primary source of patients' anxiety during the first 3 months post-surgery, likely due to the

focus on patients within this early postoperative period, whereas other studies focused on patients 1 year or more post-surgery. Since the first 3 months are often considered the 'golden phase' for weight loss, patients are especially concerned with weight reduction during this time.³² Many patients expected continuous weight loss, leading to frustration when progress slowed, possibly reflecting their unrealistic expectations of surgery outcomes. This finding is consistent with other studies that emphasise the importance of managing patient expectations to prevent psychological distress.^{32 33} During weight-loss plateaus, targeted health education could help patients maintain a balanced perspective, thus reducing anxiety and supporting long-term adherence.

In this study, participants commonly reported similar symptoms such as orthostatic hypotension, hypoglycaemia, abdominal distension, vomiting, constipation and diarrhoea. These findings are consistent with other studies focusing on post-surgery management, which also highlight similar postoperative symptoms affecting their recovery quality.⁵ Nevertheless, many patients hesitated to seek help, normalising these symptoms as 'expected', and feeling embarrassed to raise such problems that they think are 'minor'. Notably, if unmanaged, these symptoms could significantly diminish the quality of life and in cases such as orthostatic hypotension and hypoglycaemia, may pose potential mobility risks to patients.³⁴ Therefore, nurses should recognise patient 'normalization' for symptoms and develop prevention and management protocols and emergency plans to ensure safe home recovery following surgery. Besides, the effectiveness of home recovery appears to be influenced by combined individual, family and social support. Family and social support have been shown to correlate positively with postoperative weight loss.³⁵ Strict supervision from family members can help to facilitate effective rehabilitation behaviours of patients, particularly for those in the weight maintenance phase, where such oversight is crucial.³⁰ However, this study reveals that patients often experience severe emotional fluctuations, with the desire for understanding and companionship from their family members during the initial 3 months post-surgery.³⁶ Therefore, family is a crucial source of emotional support for the patient's mental health. Clinically, this underscores the importance of integrating family-centred support into the postoperative care plan to address both physical and emotional recovery needs.

Patients in this study expressed their expectations for more personalised guidance from healthcare providers, underscoring the importance of patient-centred health education in accord with individualised needs. Effective health education requires a deep understanding of the patient's motivations for undergoing surgery.³⁷ Fischer et al.³⁸ mentioned that patients' desire to solve physical health problems, meet female reproductive needs, improve life quality and pursue the goal of a beautiful and slim figure led them to receive the surgery. Therefore, tailored education that addresses specific motivations

may improve patient adherence,³⁴ particularly for young patients focusing on aesthetic outcomes. Healthcare providers should counsel these patients on the importance of balanced weight loss to avoid extreme measures that could compromise health.³⁹ Besides, it is necessary to gain a deep understanding of patients' personalities and their prior weight-loss experiences. First-time patients who are seeking to lose weight often require comprehensive and intuitive education, while those patients with prior weight-loss experience may benefit from a focus on core weight management principles, which is consistent with previous studies.⁴⁰ Additionally, healthcare providers could adopt proactive communication strategies to engage more introverted patients, ensuring they do not miss critical weight-loss opportunities. In line with these approaches, technology can play a key role in supporting personalised health education. Globally, dietary and nutritional management is increasingly supported by mobile health applications and wireless devices.^{41–43} In China, some studies have developed information management platforms, such as WeChat mini-programmes, for remote follow-up, offering patients additional resources to track their progress and receive tailored advice.

While some patients in this study were interviewed during more than 3 months post-surgery period, they provided insights into the crucial recovery period. All participants in this study widely regarded the first 3 months post-surgery as essential for building confidence, establishing healthy habits and achieving effective weight loss. Therefore, healthcare providers should prioritise patient needs during this transition period, offering appropriate support and assistance to maximise recovery outcomes.

Strengths and limitations

This study contributes to the knowledge by providing a detailed understanding of patients' early postoperative experiences and expectations, offering insights into the psychological and physical challenges they face during home recovery. One of the key strengths of this study is its focus on the subjective experiences of patients, providing valuable qualitative data that are often overlooked in clinical research. However, the study also has several limitations. The sample size was relatively small, which may limit the generalisability of the findings. Additionally, this study only examined the experiences of patients during the first 3 months of recovery. A longer-term follow-up would provide a more comprehensive understanding of recovery trajectories and the long-term impacts of metabolic and bariatric surgery on patients' health and quality of life. Future studies could investigate the long-term psychological and physical recovery processes, examining factors such as ongoing emotional well-being, weight maintenance and the impact of sustained family and social support. Additionally, exploring the effectiveness of various intervention models (eg, digital health tools and peer support networks) in improving recovery outcomes could provide important guidance for enhancing patient care. Finally, examining the role of healthcare providers

in managing patients' expectations and providing tailored education during the critical recovery period may improve overall patient satisfaction and long-term success after metabolic and bariatric surgery.

CONCLUSION

This study illuminates that the first 3 months post-surgery are crucial for patients undergoing metabolic and bariatric surgery, where they establish the foundation for long-term recovery. During this period, patients benefit from emotional and informational support from both healthcare providers and family. Healthcare providers could prioritise patient-centred care, managing both physical symptoms and emotional well-being and offering tailored guidance that addresses individual needs. Further research is needed to understand the long-term recovery process and to develop interventions that can enhance recovery outcomes.

Contributors All authors contributed to either the design or conduct of the overall programme of work. NL and YF conducted data analyses. NL produced the first draft of this manuscript, and all authors reviewed, edited and approved the final version. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria were omitted. LC is the guarantor.

Funding Special Project of Jiangsu Higher Education Association 'Jiangsu Higher Education' with project number: 2022JSGJKT043Nanjing Drum Tower Hospital 2020 Nursing Research Project, Project Number: ZSB1401

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by Nanjing Drum Tower Hospital, Affiliated Hospital of Medical School, Nanjing University Ethics Committee (NO. 2024-201-02).

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as supplementary information. Data sharing not applicable as no datasets generated and/or analysed for this study. Due to the confidential and sensitive nature of our data, data will not be made publicly available

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