



Original Research Article

Falling short in bariatric surgery: An exploration of key barriers and motivators of attrition



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ABSTRACT

Background: In the United States, obesity-related diseases pose significant healthcare challenges, with bariatric surgery offering a potential solution. However, bariatric surgery completion rates, particularly among Black and Hispanic populations, remain low.

Objective: This study applied the Theoretical Domains Framework (TDF) to explore behavioral factors influencing bariatric surgery program attrition among a majority Black participant population to inform interventions for improving attrition.

Methods: We conducted semi-structured interviews with 40 surgical and non-surgical participants and conducted deductive content analysis informed by six TDF constructs to explore factors influencing bariatric surgery program attrition.

Results: Participants' decision-making regarding bariatric surgery is influenced by behavioral factors, including knowledge, skills, social roles, beliefs about capabilities, optimism, and beliefs about consequences.

Conclusion: Understanding multifaceted factors influencing bariatric surgery attrition will inform the development of tailored interventions that address knowledge gaps, enhance skills, and consider social role conflicts to improve patient engagement and decision-making in managing obesity, especially for Black populations.

1. Introduction

In the United States (U.S.), the prevalence of obesity has risen significantly with rates reaching 42 % in 2021.¹ Management of obesity has centered on lifestyle modification, medical weight loss strategies, and bariatric surgery.² Bariatric surgery aids in weight loss, achieving up to 31 % total body weight loss compared to 10 % with lifestyle modifications alone.³ However, less than 1 % of patients eligible across all demographics complete the procedure.² This is influenced by many factors including failure to refer, self-pay status, public health insurance, older age, and poor social supports.⁴ In the US, obesity disproportionately affects Black and Hispanic communities, yet these groups constitute a minority of bariatric surgery patients. Prior research suggests insurance status is a possible barrier with a larger percentage of Hispanic patients designated as self-pay, leading to an increase in out-of-pocket costs

associated with the surgery, making it unaffordable. These out-of-pocket costs associated with surgery deter surgery completion.^{5,6}

Personalized factors such as gender, age, income status, familial responsibilities, and wait times also contribute to the complexity of bariatric surgery attrition. For instance, male patients, older individuals, and those with longer wait time for surgery are associated with higher rates of bariatric surgery attrition. Despite representing 11 % of eligible patients, Black men who are eligible for surgery only account for 2.4 % of bariatric surgery patients.⁷ Additionally, the bariatric surgical process can be complex: the demands of managing a new diet, coupled with family responsibilities and meal planning, add layers of complexity to patients' daily lives. Patients facing food insecurity but do not receive Supplemental Nutrition Assistance Program (SNAP) benefits are 2.6 times less likely to undergo surgery, while those receiving SNAP benefits are 2.2 times less likely to have bariatric surgery.⁸

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Previous studies have identified common factors influencing bariatric surgery attrition, including long preoperative wait times, stigma associated with the surgery, and fear of the procedure.^{9,10} Current data indicate that 60 % of patients who initiate the bariatric surgery process complete surgery, with lower rates observed amongst the Black and Hispanic population.^{9–11} Chao et al. conducted a qualitative study that applied a behavioral science and health research framework, called Theoretical Domains Framework (TDF), to identify complex behavioral influences.^{12–15} Their study aligned with other quantitative studies and found common factors of attrition, such as long preoperative wait times, surgery stigma, and fear of surgery.^{6,9,12,16} Although Chao et al. focused on a predominantly white population,¹² their methods informed our study in exploring factors to bariatric attrition in predominantly non-Hispanic Black (NHB) individuals.

This study utilizes semi-structured interviews with predominantly NHB patient cohort to delve into specific objectives. We evaluate patient characteristics linked to bariatric surgery program attrition, particularly considering the impact of race and ethnicity. Additionally, it aims to uncover motivators and barriers influencing bariatric surgery completion rates in NHB patients. By examining these factors, the study applies the TDF to investigate behavioral factors, for a diverse patient population, contributing to attrition rates in bariatric surgery programs.

2. Methods

2.1. Setting and participants

The participating hospital is a 912-bed tertiary care facility, located in an urban area with an associated rural catchment area. This study was approved by the local institutional review board (IRB).

Interviews were completed in English and occurred between June 2021 and October 2022. We used purposive sampling, which involves a non-probability sampling approach.¹⁷ In this study, we sampled participants from a bariatric surgical clinic, aiming to include 20 patients who had completed bariatric surgery and 20 patients who had not. We completed a retrospective analysis of the new bariatric consult database kept as part of our standard clinical practice. Study enrollment was determined to be 40 participants, 20 in each cohort (completed vs not completed bariatric surgery) as this was the expected number for thematic saturation. We defined a “bariatric surgery participant” as someone who had at least one consultation with a bariatric surgery provider (nutritionist, psychiatrist, psychologist, or surgeon), regardless of whether they had successfully completed surgery or had decided not to continue with the program. Participant remuneration was provided for consideration of their time through a \$50 electronic gift card given at the conclusion of the interview. Exclusion criteria included individuals planning pregnancy within the next 18 months or those in which medical weight loss was recommended alone.

A retrospective chart review was conducted using Powerchart (Oracle Cerner, Kansas City, MO). Demographic data was collected for each patient by chart review including age, sex, body mass index (BMI), and comorbidities. Inclusion criteria encompassed individuals over the age of 18 with a BMI greater than or equal to 35 kg/m² and obesity associated comorbidities, or a BMI greater than or equal to 40 kg/m².

2.2. Data collection

We used an exploratory qualitative design of semi-structured interviews based on the TDF with participants in the bariatric surgery program.

2.3. Interview guide development

The interview guide was pilot tested in a previous study¹² and addressed domains relevant to bariatric surgery decision-making,

including (1) participants' knowledge about the procedure and associated health outcomes, (2) their ability to enact pre- and post-operative lifestyle changes, (3) considerations of social and professional identity, (4) consequences of pursuing or not pursuing surgery, (5) self-reported confidence and optimism, (6) environmental or social distractions throughout the bariatric process, and (7) emotional barriers and/or facilitators during the journey. Interview questions were designed to uncover new insights, gather rich data, and allow for profound conversations with participants of the bariatric surgery program.

2.4. Participants recruitment and sampling

The study comprised two distinct populations: (1) individuals who completed the bariatric surgical process resulting in a bariatric surgical procedure, referred to as *surgical* participants, and (2) participants who completed a consultation who did not go on to receive bariatric surgery, referred to as *non-surgical* participants.

2.5. Data collection methods

Participants were eligible for the study if they completed a new bariatric surgical consultation and if this was completed as least 1 year prior to the study date. Participants were recruited in this study through sequential invitations from patients who were eligible for bariatric surgery at a single urban clinical center's comprehensive bariatric surgical program. Eligible participants were called in a reverse sequence, with those who were most recently seen in clinic contacted first until we met our goal study enrollment.

To ensure a comprehensive understanding, the research team employed a rigorous interview guide based on the TDF. These interviews were conducted over Microsoft Teams, recorded, and transcribed, with durations ranging from 25 to 55 minutes.

2.6. Data analysis methods

The study team met to determine initial code mapping to the TDF (A.S, D.B, Y.A, K.M). Transcripts and notes were uploaded in a qualitative data analysis software called Dedoose (Los Angeles, CA). We conducted a primary deductive content analysis guided by the TDF, in Dedoose, and then performed a follow-up inductive content analysis, in Microsoft Excel (Seattle, Washington), to identify themes for pursuing bariatric surgery after consultation with a bariatric surgical provider.¹⁸ All 14 TDF domains were explored, and the results of final thematic analysis are reflected in this paper. This allowed for systematic and iterative analysis to identify patterns within the interview data. Four coders (A.S, D.B, Y.A, B.H.) met periodically and used a consensus-based process to agree and refine themes. The relatively large sample size for a qualitative study, with 20 participants in each cohort, offered a comprehensive exploration of themes until saturation was reached.

3. Results

During the study period, a total of 679 patients underwent the bariatric surgical program online webinar and scheduled a surgeon consultation. Of these, 128 participants underwent bariatric surgery (surgical participants) and 316 did not undergo bariatric surgery (non-surgical participants). A total of 40 participants were recruited into the study with 20 surgical participants and 20 non-surgical participants. Among the non-surgical cohort, four individuals decided to discontinue their participation from the bariatric program after the initial consultation with the surgeon. The demographic distribution of participants in the study is summarized in [Table 1](#).

Attrition was examined across all 14 domains of the TDF during deductive content analysis and 7 domains emerged including knowledge, skills, social role/professional identity, beliefs about capabilities,

Table 1
Participant demographics.

Patient Demographics	Surgery Patients (N = 20)	Non-Surgery Patients (N = 20)
Age, yr, mean (range)	43.7 (28–65)	41.2 (24–65)
Gender - N (%)		
Male	3 (15)	4 (20)
Female	17 (85)	15 (75)
Non-binary	0 (0)	1 (5)
Race - N (%)		
Black	13 (65)	16 (80)
White	6 (30)	4 (20)
American Indian/Alaskan Native	1 (5)	0 (0)
Ethnicity - N (%)		
Non-Hispanic	20 (100)	18 (90)
Hispanic	0 (0)	2 (10)
Consult BMI, kg/m ² , mean (range)	48.61 (40–64)	49.97 (35.3–73)

Abbreviations: BMI; body mass index.

optimism, beliefs about consequences, and intentions. [Table 2](#) demonstrates the domains of the TDF with associated definitions and specific themes that emerged.

4. Knowledge

Both surgical and non-surgical participants had varying degrees of knowledge concerning their conditions and treatment options. They had several ways of obtaining knowledge prior to attending the webinar. For instance, participants mentioned utilizing search engines, e.g. Google, and social media, e.g., YouTube, Instagram, TikTok and Facebook, to understand the bariatric surgery procedure and life modifications afterwards. Participants also described how friends and family, who had undergone bariatric surgery, helped inform their decision to proceed with surgery. Key themes identified include sources of information, understanding and misunderstanding, and information overload.

4.1. Non-surgical participants

Non-surgical participants emphasized the benefit of information from friends and family. Participants explained that information about post-operative side effects discouraged them from completing the process. One patient explained that she researched bariatric surgery as her

husband was preparing for the procedure, “*I did my own research trying to help him [my husband] go through the surgery ... it was not for me.*”

4.2. Surgical participants

Surgical participants appeared to possess a clearer understanding of the purpose and potential outcomes of bariatric surgery compared to their non-surgical counterparts. For example, participants had more knowledge of the different types of surgery, with one person explaining, “*I knew I wanted to have the sleeve, and I knew that they had to cut a portion of your stomach.*” A different patient acknowledged lifestyle changes as a result of the surgery, “*I knew I was going to have to cut a lot of those things out, and I knew I still like it.*”

Both surgical and non-surgical participants expressed mixed feelings about the program's informational aspects. While there was no distinguishable difference in the positive relationship participants had with their providers, a recurring theme noted from both cohorts was the terminology used as well as the pace and amount of information given during their initial consult. One surgical patient mentioned that the information “*... was helpful, but a lot. I didn't know where to begin*”, with another nonsurgical patient unaware of the reason for his consultation with the provider, as well as future steps that needed to be taken in the program with other stakeholders:

“I never quite understood the whole program or why I was there. I saw the doctor one time ... you don't have a chance to digest it or understand or know this is really what I want to go to”

5. Skills

Participant discussions centered around the essential skills required for participants to effectively manage their conditions and navigate the bariatric care process. Key themes identified include managing diet, family responsibilities, and meal planning.

5.1. Non-surgical participants

Participants expressed concerns and faced barriers related to managing family responsibilities alongside the need for dietary changes and meal planning. Several participants expressed a lack of confidence in independently changing their diets stating, “*It would not be easy, I can't change my eating pattern.*” Additionally, they were apprehensive about adopting a protein shake diet, which would comprise a significant

Table 2
TDF domain definitions from bariatric surgery candidates.

TDF domain	Definition	Non-surgical patient Themes	Surgical patient Themes
Knowledge	Understanding and awareness of information related to one's condition, treatment options, and healthcare process	Demonstrate confidence in managing their condition without surgery	Understanding of surgical interventions' purpose and outcomes
Skills	Proficiency in tasks/activities required to manage one's condition or navigate the healthcare process effectively	Require skills for dietary changes and managing lifestyle factors without surgery	Need skills related to post-operative care and lifestyle adjustments
Social/professional role and identity	Influence of social and professional roles on perceptions and behaviors related to healthcare	Express concerns about how treatment decisions will impact their social roles within their family	May also consider impact of surgery on their social and professional identities
Beliefs about capabilities	Confidence in one's ability to perform behaviors necessary for managing health and adhering to treatment plans	Exhibit confidence in managing their health without surgery	Believe in effectiveness of surgical intervention
Optimism	Positive outlook or expectation regarding the outcomes of healthcare behaviors and treatment choices	Exhibit optimism about ability to improve health through non-surgical means	Express optimism about potential beliefs of surgical intervention
Beliefs about consequences	Perceptions of the potential outcomes or consequences of behaviors and treatment choices	Weigh consequences of dietary changes and lifestyle modifications	Consider potential outcomes and challenges of surgery
Intentions	Planned or intended behaviors regarding healthcare decisions and actions	Intend to pursue alternative treatment options based on confidence in managing health without surgery	Clear intuition to undergo surgical intervention based on beliefs about its effectiveness

Abbreviations: TDF; Theoretical Domain Framework.

portion of their immediate pre- and post-surgery diet. Furthermore, they highlighted the difficulty of anticipating the preparation of separate meals for themselves and their families post-surgery, indicating the difficulties and frustration in making two meals for their family: one that adhered to their post-operative diet, and another that their family would enjoy. Participants would have to “*plan way ahead*,” something they were not used to prior to starting the bariatric surgery program.

5.2. Surgical participants

Participants learned specific skills related to post-operative care and lifestyle adjustments. Beyond the surgical procedure itself, these participants recognized the importance of maintaining their health post-surgery, acknowledging that the surgery was merely the initial step in their journey, and it, “*wasn't an end all to be all ... a step in the right direction*.” Their acquired skills encompassed various aspects, including regular exercise, purchasing and preparing healthy foods, and navigating the mental and emotional challenges associated with post-surgery life adjustments. One patient became overwhelmed by their post-surgical recovery stating, “*Like, OK, you need to, like, get it together. But like, the mental aspect of like, I knew it was there, but I didn't realize how bad it was or how intense it could be after surgery that that was like, the big thing for me because I was, like, breaking down.*”

6. Social/professional role and identity

Participants' social and professional roles influenced their perceptions and behaviors concerning bariatric care. Both surgery and non-surgical participants expressed multifaceted concerns about how their health-care decisions would intersect with their familial and social responsibilities. Key themes identified include balancing family roles and social expectations.

6.1. Non-surgical participants

Participants often grappled with the delicate balance between their roles as providers and their commitment to weight management. Prioritizing one's own health needs and the intricate balance of maintaining familial responsibilities left little room for dedicated time to engage in health-promoting behaviors. One non-surgical participant highlighted this impact of social roles on steering individual health decisions: “*Being a mom ... I have to do this with this kid today ... I forget to maybe exercise or I ... can't exercise.*”

6.2. Surgical participants

A common concern in the surgery cohort was managing social obligations, particularly in the setting of eating at a restaurant while undergoing dietary changes or weight management efforts. While many participants would want to go out and dine with friends and family, their dietary restrictions, such as, “*not being able to consume alcohol*” and time in post-operative recovery prevented them from doing so. Participants expressed feelings of isolation and inadvertently making their “*friends mad at me*” for opting out.

Moreover, for both cohorts, societal expectations regarding physical fitness and productivity were evident in participants' narratives. One non-surgical participant, who had attempted to lose weight in the past, reflects the intricate dynamics between social expectations and personal health behaviors:

“*I'll just need to not be lazy and work the weight off, you know. But I'm physically unable. Even when I was exercising, just the cramps and the pain and stuff like that. You know, I don't know if I'm messing in something I don't know what the heck is going on.*”

This statement from a male patient underscores the complex interplay between societal expectations in maintaining a healthy body, individual

perceptions of physical capability, and the challenges inherent in weight management efforts.

7. Beliefs about capabilities to manage health and adhere to treatment plans

Participants' beliefs regarding their capabilities in managing health and adhering to treatment plans varied between non-surgery and surgery participants. Key themes include confidence in managing health and belief in surgical intervention.

7.1. Non-surgical participants

Non-surgery participants were ambivalent about their ability to lose weight and to maintain their health without resorting to surgical intervention. One non-surgical patient expressed uncertainty about bariatric surgery helping to reach her health goals, “*I would say it's a 50/50 chance that [surgery] could help. It probably would have helped, but when I think about it ... I could just exercise and eat healthy.*”

7.2. Surgical participants

On the other hand, surgical participants expressed belief in the effectiveness of bariatric surgery to address their health issues and achieve weight loss goals. A surgical participant explained how the procedure was a tool in achieving weight loss and that success would require a broader approach that addresses well-being, “*It [the surgery] was only a tool ... a lot of people don't understand. It's a lot of mindfulness training ... helps you get what you need to be physically, but not a holistic ... approach.*”

Notably, both groups expressed satisfaction with access to healthcare providers and their interactions with them but noted feeling overwhelmed by the volume of information provided like scheduling follow up appointments and the different dietary restrictions.

8. Optimistic outlook on healthy behaviors and treatment choices

Both surgical and non-surgical participants were optimistic regarding healthcare behaviors and treatment choices. Key themes include optimism about health outcomes and belief in non-surgical methods.

8.1. Non-surgical participants

Non-surgical participants exhibited optimism and more agency about their capacity to achieve weight loss and improve their health through non-surgical means. Many participants who did not pursue surgery had already been implementing behaviors towards weight loss. One non-surgical patient was skeptical about needing surgery to achieve her health goals as a result of her existing effort to lower her A1C levels, “*The whole point of the surgery is to stop me from eating whatever I want and to make me do what I'm supposed to do ... my A1C [levels] to lower ... I realized I was already doing it.*”

8.2. Surgical participants

Similarly, surgical participants expressed hope regarding the potential benefits of surgical interventions in addressing their health concerns and achieving desired weight loss outcomes. One surgical patient attributed profound importance to bariatric surgery changing her life, “*I will say the surgery was the most meaningful change I could ever make.*” The significance of optimism in guiding treatment decisions was pivotal in shaping patient choices.

9. Beliefs about consequences

Both surgical and non-surgical participants considered the potential impacts of their treatment choices on resolving comorbidities and achieving their weight loss goals. Key themes identified include lifestyle impact, weight loss perception, and health outcomes.

9.1. Non-surgical participants

Non-surgical participants were more focused on how the surgery would impact their current lifestyle, citing concerns such as familial commitments, logistical challenges, and dietary restrictions post-op. A non-surgical patient, who described herself as a busy mother, questioned her ability to maintain post-treatment dietary guidelines due to her hectic schedule, saying, *“I’m looking listening to everything that they say I have to do. I don’t know that I have the time to eat the way I’m supposed to eat because I’m constantly on the go.”* Many non-surgical participants also highlighted difficulties related to food access and dietary choices, often opting for fast food due to time constraints or personal food preferences.

Additionally, a few non-surgical participants were aware of the post-operative weight loss and were hesitant about losing an excessive amount of weight and not maintaining their imagined body shape and weight. One patient mentioned, *“I want surgery, but I don’t also want to be too skinny. Like I still want to be a little thick and like some of the people that I saw, you know, who experienced the surgery is like they got skinny.”*

9.2. Surgical participants

As previously mentioned, surgical participants largely believed that surgery had been instrumental in achieving their health goals and enhancing their quality of life, though they expressed concerns about experiencing various post-op side effects and weight regain. One surgery patient stated, *“You rely on it as a tool and you can gain weight back and there’s a lot of health issues that could come with it.”*

10. Intentions

Participants’ intentions regarding their treatment choices were influenced by factors such as perceived benefits, barriers, and social roles. Key themes identified include alternative treatment plans, surgical commitment, and family and social motivations.

10.1. Non-surgical participants

Non-surgical participants intended to pursue alternative treatment options based on their confidence in managing their health without surgery and their beliefs about the consequences of surgical intervention. A non-surgical patient expressed *“I feel like I still have the same chance of losing or removing my hernia and work on changing my eating habits and exercise and lose weight. It’s the same chances as the bariatric surgery, and that’s why I was kind of, you know, on hold”*. After attending the bariatric surgery program classes, many non-surgical participants felt confident enough in their knowledge and abilities to lose weight independently, without needing to undergo surgery.

10.2. Surgical participants

Surgical participants on the other hand were motivated to opt for surgical intervention based on their beliefs about its effectiveness and potential benefits. Many surgery participants believed that surgery would allow them to address their existing comorbidities and improve their quality of life. One surgery patient stated *“I’ve never been fully successful, so and I want to make a change. I need to lose weight. So, for my health, you know. Also like I said, I have two grandkids. So, I want to be healthier too, to be around longer for them and to be able to hang out with them a little bit more.”* Many surgical participants voiced a desire for the surgery, not just

for personal benefits, but also to help enhance their presence with friends and family. They mentioned benefits such as improved mobility, increased self-confidence, and the energy to engage more with their loved ones.

11. Discussion

To our knowledge, our study is the first to explore factors contributing to attrition rates among a primarily NHB patient population in bariatric surgery programs using a qualitative approach and the Theoretical Domain Framework (TDF). We identified several key findings related to racial disparities in bariatric surgery completion. The ongoing low penetrance of bariatric surgery in the management of obesity is likely multifactorial, as is demonstrated by the various drivers of attrition explored in this study. Table 3 summarizes next steps to explore in facilitating the bariatric surgical process, decreasing attrition, and making this life-saving modality more approachable to patients of every background, with a focus on the needs of Black patients.

In this majority Black population, participants expressed varying degrees of knowledge concerning bariatric surgery and its associated lifestyle modification. Many felt overwhelmed with the amount of information and medical terminology involved. Participants who successfully completed surgery found that communication was clear and effective, particularly appreciating interactions with their surgeon and

Table 3
Tailored approaches to enhance engagement and support in bariatric care.

Tailored approaches mentioned to address needs/concerns of bariatric care patients focusing on enhancing engagement, empowerment, and support
1. Preparation and Education: It was suggested that providing patients with pre-consultation education could better prepare them for their appointments and treatment options. Example: Inform patients about the purpose of their visit, the expected outcomes, and the potential treatment pathways available to them Justification: Priming patients with information beforehand may help patients feel more engaged & empowered to participate in their care decisions
2. Skill-Building: Recognizing the need for certain skills to navigate the bariatric care process, there was discussion about offering skill-building sessions to patients. Example: Teach meal planning strategies, time management techniques, and coping mechanisms for managing stressors related to dietary changes and lifestyle adjustments Justification: Equipping patients with practical skills may help them feel more confident in their ability to adhere to treatment plans and achieve their health goals
3. Supportive Resources: Providing patients with access to supportive resources, e.g., online forums, peer support groups, or counseling services, was suggested. Example: Offer emotional support, practical advice, and encouragement throughout the bariatric care journey. Justification: By connecting patients with supportive communities, they may feel less isolated and more motivated to stay engaged in their treatment.
4. Tailored Communication from Providers: Emphasizing the importance of tailored communication between providers and patients, it was suggested that healthcare professionals should meet patients where they are and avoid making assumptions about their knowledge or capabilities. Example: Adopt patient-centered approach to communication Justification: Providers can better understand patients' perspectives, address their concerns, and tailor treatment recommendations to suit their individual needs and preferences
5. Flexible Program Structures: Recognizing the barriers and challenges faced by patients, particularly those related to family responsibilities and logistical constraints, there was discussion about offering more flexible program structures. Example: Adjust appointment schedules, offer virtual consultations, or provide alternative modes of support to accommodate patients' diverse needs and circumstances. Justification: By offering flexibility in program structures, patients may feel more supported and empowered to actively participate in their care despite external challenges

the team. They felt that the communication with multiple providers, including mental health and cardiology specialists, enhanced their comfort with the process and provided a better “*understanding of what I was signing up for.*” This supports the need for an ongoing multidisciplinary approach to managing bariatric surgery patients and facilitating their completion of a bariatric surgical programs.

Our findings in the knowledge domain led us to recommend improved, culturally tailored educational materials (Table 3). Insights from the skills domain informed our suggestion for enhanced support systems, particularly in areas of meal planning and mental health coping strategies. The social/professional role and identity domain findings highlighted the need for interventions that address social and cultural expectations faced by Black patients considering bariatric surgery.

Our study expands upon previous research by Chao et al. with a predominately white population.¹² Both our findings and those by Chao et al. identified pre-operative requirements and wait times as barriers to pursuing surgery with our study identifying additional nuances specific to a Black population.¹² Additionally, we discovered a unique concern about some Black patients about becoming “*too skinny*” from bariatric surgery, which could deter them from pursuing the procedure. This finding underscores the diverse body image ideals and self-identity within different cultural contexts, a factor not mentioned in previous work with white patients.

Participants also voiced that the commitment to the bariatric program requirements, both pre- and post-operatively was difficult. This was similar to findings by Chao et al.¹² The dilemma patients face post-operatively of maintaining their post-operative diet while attending to the diets of their families and other social events is particularly problematic. Studies have shown that this predicament may affect relationships with spouses, children, and coworkers.¹⁹

Interestingly, many participants noted mental health skills as a crucial area for development. While participants may become more optimistic in seeing the results of their weight loss goals, others struggle with their mental health throughout the program due to changes in diet, side effects, social isolation, and depression.^{20–22} This finding suggests a need for ongoing mental health support systems throughout the bariatric surgery process, a consideration that may be particularly important for Black patients given historical disparities in access to mental health services.²³

While our study provides valuable insights into the behavioral factors influencing bariatric surgery program attrition among a majority NHB patient population, several limitations should be acknowledged. Our study was conducted at a single center, which may limit the generalizability of our findings. However, qualitative studies are time intensive, and though conducted only at a single center, we have 40 participants which is a robust number and is the largest study size that we are aware of for a qualitative study of this nature. Another limitation is that data were collected through semi-structured interviews, which are subject to self-reporting biases. However, they are one of the most powerful tools to examine patients' lived experiences, attitudes, and beliefs motivating choices regarding health. Finally, we did not collect data on participants' educational background or health literacy. Given the themes that emerged surrounding information overload and knowledge about the process, understanding our patient cohort's level of education and level of health literacy could have provided valuable context for interpreting our results and informing future interventions.

We plan to explore these topics through a co-design framework, incorporating patient, provider, and programmatic stakeholders to develop generalizable programmatic frameworks to aid in decreasing attrition in the bariatric surgical process. Future research should aim to address these limitations by conducting larger, multi-center studies with more diverse patient populations. Furthermore, future studies should explore how familial and societal expectations influence patients' perceptions and behaviors regarding weight management and treatment choices, with a focus on developing tailored, patient-centered interventions to support people in their weight loss journey and improve

bariatric surgery program retention, especially among Black patients.

12. Conclusions

Our qualitative study, with predominantly black participants undergoing the bariatric surgical process, demonstrates that the etiology of bariatric attrition is multifactorial. Societal drivers and expectations impact patient decision making towards bariatric surgery and their ability to gain knowledge about the procedure and process are highly influential. Program duration was again emphasized and continues to warrant re-evaluation. Developing tools for providers and team members that include cultural dexterity in body ideals and norms that can help to inform preoperative counseling is instrumental in increasing the retention of participants in bariatric surgical programs.

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CRediT authorship contribution statement

Advait Suvarnakar: Writing – review & editing, Writing – original draft, Formal analysis, Data curation. **Bat-Zion Hose:** Writing – review & editing, Methodology, Formal analysis. **Deanna-Nicole Busog:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Data curation. **Summer McCloud:** Data curation. **Grace F. Chao:** Writing – review & editing. **Kristen Miller:** Writing – review & editing, Methodology, Formal analysis, Data curation. **Ivanesa Pardo:** Writing – review & editing. **Yewande Alimi:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

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