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Adolescents' Perspectives of Life after Metabolic Bariatric Surgery: A Mixed Method Study

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Adolescents' Perspectives of Life after Metabolic Bariatric Surgery: A Mixed Method Study

Purpose: Metabolic bariatric surgery is an effective treatment option for adolescents with severe obesity. The purpose of this study is to gain a better understanding of the psychosocial impact MBS has on adolescents' personal, social, and familial lives.

Methods: A descriptive qualitative design was used, and 8 adolescents who were at least 6 months post-MBS and had undergone laparoscopic sleeve gastrectomy completed semi-structured interviews. Data was collected from January 2 to March 27, 2025; thematic analysis was conducted, and Urie Bronfenbrenner's theoretical framework was utilized. Quantitative data were collected using the Impact of Weight on Quality of Life-Kids Survey.

Results: Thematic analysis demonstrated the emergence of three categories: Internal changes involving both physical and mental adjustments; external changes involving relationships and adapting to social eating, and improved accessibility to activities; reflections on decision making involving MBS as the best decision and framed as their last resort, viewed as life changing, and had no regrets. The overarching theme was that MBS did not alter their core identity. Adolescents reported high levels of health-related quality of life after surgery.

Conclusion:

This study highlights the importance of patient-centered care and offers practical guidance for enhancing clinical practice. It reveals crucial insights into the psychosocial effects of MBS on adolescents, noting changes in confidence and social environments.

Key Points:

- Adolescents can navigate the physical and mental adjustments to MBS.
- Participants reported increased confidence and improvements in their social lives.
- MBS did not alter the adolescent's core identity.

- High levels of health-related quality of life following MBS were demonstrated

Keywords: Adolescent; Metabolic bariatric surgery; Qualitative methods; Obesity

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Introduction

Pediatric and adolescent obesity, defined by a body mass index (BMI) at or above the 95th percentile for age and sex, represents a major health crisis in the United States, with a prevalence of 19.7% (Stierman et al., 2021). This represents approximately 14.7 million children living with obesity. Childhood obesity predisposes to a host of other medical conditions, including hypertension, type 2 diabetes mellitus, liver disease, obstructive sleep apnea, orthopedic issues, and several types of cancer (Tirosh et al., 2011; Ward, Bleich, Long, & Gortmaker, 2021; Zhang et al., 2024). High BMI during adolescence also increases the risk of cardiovascular death in young adulthood (Juonala et al., 2011). In addition to the physical effects, prior research has demonstrated a significant impact on children's mental health and quality of life. Children and adolescents with obesity have been reported to have health-related quality of life scores comparable to children with cancer (Schwimmer, Burwinkle, & Varni, 2003). Depression rates are also quite high, cited at 30% amongst children seeking treatment for obesity (Zeller, Roehrig, Modi, Daniels, & Inge, 2006).

There has been a recent focus on the medical treatment of obesity in the pediatric population. The American Academy of Pediatrics now recommends treatment of child and adolescent obesity with multidisciplinary care, including medications and Metabolic and Bariatric Surgery (MBS) (Hampl et al., 2023). MBS includes several surgical procedures designed to treat obesity and obesity-related comorbidities through anatomic and physiologic changes to the gastrointestinal tract. There is prospective evidence supporting MBS amongst adolescents, with a total body weight loss from 20% to 40% up to 10 years following surgery and significant reductions in obesity-related comorbidities (Inge et al., 2019; Inge et al., 2016; Inge et

al., 2017; Olbers et al., 2017; Ryder et al., 2024). Although an estimated 6 million adolescents in the United States meet criteria, only about 1,500 adolescents undergo MBS annually (Messiah et al., 2025) indicating that MBS remains underutilized in the pediatric population. This may be due to a variety of factors, including stigma and concerns regarding the safety of elective surgery in children and adolescents (Campbell et al., 2022). However, the safety of MBS has been extensively demonstrated in the adolescent population. The largest single institution study analyzed 2,504 children who underwent sleeve gastrectomy, with a 1% adverse event rate and no procedure-related mortality (Alqahtani, Elahmedi, Abdurabu, & Alqahtani, 2021). Database analysis of the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program, including almost 11,000 patients aged 10-19 years old found marginally lower rates of preoperative complications, reoperation, and readmission compared to the older cohorts (Shacker et al., 2025)

Childhood obesity is impacted by a complex interplay of factors, including genetics, epigenetics, environmental exposures, medical conditions, medications, eating behaviors, and social determinants (Williams, Braddock, Houser, Blair, & Browne, 2022). Additionally, children with obesity face significant bullying and weight bias (Braddock, Browne, Houser, Blair, & Williams, 2023). While ethical questions have been raised regarding MBS in youth, systematic reviews regarding psychosocial status and mental health amongst adolescents before and after surgery have demonstrated reductions in anxiety and depression, and improvement in quality-of-life scores (Martinelli et al., 2023).

There is limited information regarding adolescents' perception of MBS and how it affects them personally, socially, and within the family unit. Prior research has sought to understand adolescents' motivations for seeking MBS and has found common themes of personal goals,

improved health, bullying, and negative self-esteem as motivators (Garcia, Watt, & Six-Means, 2023). However, little is known about the attitudes and beliefs of adolescents after undergoing MBS. MBS requires months of preparation involving diet and lifestyle counseling, education around surgery, medical testing, and psychological evaluation. Even after physical recovery from surgery, it involves changes to diet and a lifetime adherence to vitamins, laboratory monitoring, and healthcare follow-up. Given the significant commitment required, this study sought to better understand the adolescent experience around surgery and the impact of MBS on their lives. The purpose of this study is to investigate how adolescent MBS patients adjust personally, socially, and within their families following MBS via interviews and survey responses.

Methods

The qualitative aspect of this study utilized a descriptive study methodology, as this approach offers the researcher an inherently simple and flexible way of understanding a particular phenomenon facing nursing and healthcare (L. Doyle, McCabe, Keogh, Brady, & McCann, 2020). Qualitative descriptive methodology is an appropriate method of research when the aim is to discover the who, what, and where of events or experiences facing informants, especially in an area that is poorly understood (Kim, Sefcik, & Bradway, 2017). For the purposes of this study, a qualitative descriptive approach will be implemented, as it provides the strongest method for addressing the research questions and is well-suited to this study cohort.

The quantitative data for this study were collected by using the IWQOL-Kids, which has been tested with findings that demonstrate excellent test-retest reliability and preliminary documentation of minimal clinically important difference scores using the standard error of measurement (Modi & Zeller, 2011). We did not use a statistical program as we only presented descriptive data for the quantitative methods. We used a convergent parallel mixed-methods

design, collecting qualitative and quantitative data separately and then merging the results for interpretation (Creswell, 2017). NVivo version 2023, a qualitative research software program, was used, allowing the research team to build codes and categories during the analysis phase.

Urie Bronfenbrenner's (1979) ecological framework was used to better understand the impact MBS had on adolescents. This theory provided a lens through which to view the participants' journeys within their unique environment. Bronfenbrenner describes this ecological model as a microsystem that relates to and interconnects with the mesosystem, ecosystem, and macrosystem. For the purposes of this MBS study, the microsystem represented the individual adolescent; the mesosystem, their school, friends, and peers; the exosystem, the community in which they live; and the macrosystem, the societal and cultural norms in which they live. The way in which these systems relate to one another influences how the participants viewed their MBS experience and provides a framework to interpret our qualitative results (Figure 1).

Participants

Adolescents who participated in this study were between 15 and 20 years old, fluent in English, and at least 6 months post-MBS. All participants were required to have undergone their laparoscopic sleeve gastrectomy surgery at a large academic medical center on the West Coast and to be followed by the MBS clinic staff. The surgical program is formally accredited by the American College of Surgeons' Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program. All demographic data is available in Table 1.

Recruitment

Participants for this study were recruited through the MBS clinic via referrals from the clinical team. Patients and/or parents who expressed interest in the MBS study provided permission for their names to be shared with the principal investigator (PI), and they were given

the PI's contact information if they preferred to reach out to the PI individually. Screening and enrollment procedures are visualized in the Consort Diagram (Figure 2). This study was approved by the institutional review board for human subjects and ethics prior to participant contact and enrollment.

Study procedures

Once assents and consents were obtained, participants were asked to complete the Impact of Weight on Quality of Life-Kids (IWQOL-Kids) Survey (Kolotkin, 2006), which comprises four perceptual domains, and a demographics sheet which included age, sex, gender, time since MBS, ethnicity, education level, and whether other family members had MBS. Data were collected and managed using the university's Research Electronic Data Capture (REDCap) tools(Harris et al., 2019; Harris et al., 2009). Participants were then scheduled for a 60-90 minute semi-structured interview using a formal interview guide (Table 1). The interview was performed with only the PI and participant present. Interviews were conducted via Zoom video calls from January 2 to March 27, 2025. Interviews allowed for back-and-forth dialogue to exist between the PI and the participant. Qualitative data adhered to the reporting standards outlined in the Consolidated Criteria for Reporting Qualitative Health Research Checklist(Tong, Sainsbury, & Craig, 2007).

Interview description

Interviews were conducted by the PI, who had no prior relationship with the adolescent participants and is a qualitative scholar. The interview guide was divided into three sections: personal reflections, perception of family, and relationships with friends (Table 2). This allowed data to be collected systematically and consistently. Adolescents were invited to only answer questions they were comfortable answering and could pause at any time during the interview.

Saturation was reached upon completing 8 interviews, when similar concepts and no new information emerged during coding (Strauss, 1998).

The IWQOL-Kids Questionnaire

The IWQOL-Kids Survey (Kolotkin, 2006) is a self-report questionnaire of 27 items with responses ranging from 1 ("always") to 5 ("never"). Higher scores indicate better weight-related quality of life. Four subscale scores (Physical Comfort, Body Esteem, Social Life, and Family Relations) and a total score are computed, with scores ranging from 0 to 100, where 100 indicates no weight-related quality-of-life concerns.

Data analysis

Interviews were conducted over Zoom, utilizing both video and audio recording. Audio tapes were sent to a transcriptionist using HIPAA secure transmission, and transcripts were produced. The coding team was trained to perform thematic analysis by the PI. Codes were generated after the team had read the transcripts line-by-line and coded individually, and then the interpretation was shared and compared iteratively. Thematic analysis is a common approach used in qualitative descriptive studies as it allows the research to get close to the data during analysis (Vaismoradi, Turunen, & Bondas, 2013). During the coding sessions, all four coders identified relationships between the codes, created categories, and developed a thematic map (Vaismoradi et al., 2013). Consensus was reached by the team after several iterations, memos, and notes were consistently synthesized at each meeting. The construction of an overarching theme involved open coding and the identification of significant categories using thematic analysis (De Santis & Ugarriza, 2000). Each interview was coded and interpreted through a vertical analysis, which enabled the researchers to examine the interview details as a separate, unique story. The research team conducted a series of meetings in which horizontal analysis was

performed, and the group compared patterns and connections during the study's analysis phase. Using Bronfenbrenner's Ecological Framework (Bronfenbrenner, 1979) allowed for a more nuanced conceptualization of how MBS impacted adolescents' lives. Thematic analysis and exemplar quotations using Bronfenbrenner's Ecological Framework are available in Table 3.

The research team ensured principles of rigor and robustness by using reflexivity and reflection during the analysis. Individual biases, beliefs, and attitudes were recognized and acknowledged by the team to enhance credibility and trustworthiness.

Results

Qualitative Results

Internal Changes: Microsystem

Following MBS, this cohort of adolescents experienced an internal growth that impacted them mentally, physically, and personally. The data analysis revealed three subcategories within the category of internal changes: Both physical and mental adjustments became easier with time, MBS leads to improved confidence, and despite significant changes, adolescents retain their identity and sense of self after MBS.

1. Both physical and mental adjustments became easier with time

At the microsystem level, the adolescent adjusted mentally and physically over time. The immediate post-operative period required adapting to major lifestyle changes, and they had to learn about their new eating habits. As time progressed, this adjustment and adaptation became easier for them, and they experienced improved physical and mental health.

2. MBS leads to improved confidence

This cohort of adolescent MBS surgery participants shared feelings of improved confidence as their weight decreased, and they were more comfortable in social situations. This boost in

confidence was a result of their ability to engage in physical activities that they previously avoided. Their emotional well-being improved, reflecting a renewed self-image.

3. Despite significant changes, adolescents retain their identity and sense of self after MBS

Following MBS, the adolescents described themselves as not becoming a different person but a more empowered version of themselves. Their personality traits, passions, and views on life remained integral to their identity and remained unchanged as a result of this surgical procedure. The adolescents spoke about their identity as separate from their weight loss and changed physical appearance.

External Changes: Mesosystem, Exosystem, and Macrosystem

Adolescent participants also reflected on changes they noticed among the people, spaces, and opportunities external to themselves that they experienced after MBS. In contrast to internal changes occurring at the person-level, these observations were made in response to how individuals, communities, and society have changed around the adolescent since undergoing surgery. These external changes were further organized into four subcategories: 1) support of friends and family (Mesosystem), 2) society's stigmatization of obesity (Macrosystem), 3) social eating difficulties (Mesosystem), and 4) improved accessibility (Exosystem).

1. Support of friends and family

Adolescents emphasized the importance of support from friends and family as a key aspect of their MBS journey. Participants discussed the consistent and often unwavering support they received from family members, including parents, siblings, and grandparents, as well as peers.

2. Society's stigmatization of obesity

Participants noted differences in the way they were treated post-MBS by others and discussed recognizing the impact of society's stigmatization of obesity through this process. This

subcategory included adolescents' descriptions of how other people responded differently to them after going through MBS and losing weight.

3. Social eating difficulties

Adolescents reflected on a variety of challenges experienced with social eating (eating with others) after MBS. Patients were instructed to eat smaller amounts and more frequently due to the restricted size/capacity of their stomach. The importance of social eating, particularly within this age group, was demonstrated by the difficulty adolescents had in participating in and navigating through social eating situations post-surgery.

4. Improved accessibility.

Adolescents in this study reported improved accessibility to activities in their environment following MBS. This subcategory was broadly defined and included increased accessibility across various domains, from clothing to sports participation and travel. Participants noted that fewer accommodations were needed after MBS to participate in daily life activities.

Cross-sectional theme: MBS as the Best Decision

A persistent narrative raised by the participants was that pursuing MBS was a good decision. Participants frequently reflected on their thought processes regarding surgery and reported being very satisfied with their decision.

1. MBS was initially viewed as the "last resort."

Despite satisfaction with the decision to undergo MBS, many participants voiced feeling that, at the time, surgery was their "last resort". They expressed frustration over exhausting all other strategies for weight loss and feeling that MBS was the final option remaining.

2. MBS viewed in retrospect as life-changing

However, participants ultimately described the experience of MBS to be a positive one, which transformed their lives for the better. They reported feeling a renewed sense of motivation and encouragement about their journey and how it has shaped them.

3. "No regrets"

While many participants described surgery as hard work and reflected on the many ways they have had to adapt, there was ultimately a common theme: adolescents shared that they harbored no regrets. When asked what advice they would provide to other adolescents considering surgery, participants recommended that potential patients seriously weigh the challenges while also considering the many potential benefits.

Quantitative Results

Participants' scores on the IWQOL-Kids (Kolotkin, 2006) questionnaire indicated that, on average, adolescents post-MBS did not report weight-related quality of life difficulties (IWQOL Total score: 76.50 ± 19.17, range: 40.74-100). The sample reported higher scores on the social life (91.15 ± 9.30; range: 75-100), physical comfort (82.81 ± 21.64; range: 33.33-100), and family relations subscales (82.29 ± 18.33; range: 62.5-100) compared to the body esteem subscale (58.68 ± 32.31; range: 8.33-100). Thus, the sample reported the most weight-related quality of life concerns regarding body esteem post-surgery compared to the other domains measured. Participants reported a wide range of scores on the body esteem subscale, suggesting substantial discrepancies among participants when reflecting on weight-related quality of life in this domain.

Discussion

This mixed-methods study provided a deeper understanding of the lives of adolescents who experienced MBS. The qualitative data reflected three specific categories: Internal changes

involving both physical and mental adjustments, which led to improved confidence and a strong sense of self; external changes involving relationships, adapting to social eating, and improved accessibility to activities in their environment; and reflections on decision-making involving MBS. Participants viewed MBS as the best decision for their health and well-being and had no regrets.

Post-MBS, the adolescents in the study experienced the surgery as "life changing" and highlighted more positive than negative changes as a result. One mixed-method study exploring the effects of adolescent bariatric surgery among young adults 10 years post-surgery revealed four themes in their qualitative data analysis: taking control, challenges to weight loss, body image adjustment, and growing up, and similar to our study, they found the concept of social eating requiring adjustment and adaptation (DeMello et al., 2023). Unlike our study, which found that adolescent participants reported improved confidence, this was not the case in DeMello et al., where some participants (N=20) gained confidence after MBS, but others still viewed themselves as they had prior to the surgery and lacked confidence. Similar to our study, an interpretative phenomenological analysis found that of the nine adolescents recruited, one key theme identified was that surgery was viewed as a last resort (J. Doyle, Colville, Brown, & Christie, 2018).

Practice Implications

The results of this study have important clinical implications for adolescents considering MBS as a treatment option. Further, sharing these common post-MBS themes and experiences reported with adolescents in the pre-operative surgery process may better prepare youth and their parents/guardians for life post-MBS. In addition to the required medical workup and psychological evaluations, highlighting patients' voices may help prospective patients make a

more informed decision about whether to pursue MBS. Integrating this information into MBS programs in a standardized way may support patient autonomy in decision-making, alleviate concerns about adjusting to post-surgery life, and answer questions families have when preparing for MBS. It is also imperative that referring providers to MBS programs remain aware of patients' lived experiences and communicate research-based findings with patients. As such, the results of this study may also help reduce bias, stigma, or unsupported beliefs about the quality of life and psychosocial impacts of MBS in adolescents.

Overall, adolescents in this study reported high weight-related quality of life across the sampled domains, except body esteem. Compared to large samples of treatment-seeking youth with obesity (Modi & Zeller, 2011; van der Voorn, Camfferman, Seidell, & Halberstadt, 2023) the post-MBS adolescents sampled in this qualitative mixed-method study reported comparable overall weight-related quality of life scores. The wide variability in responses to questions that comprise the body esteem subscale suggests that unique individual experiences may play a greater role in weight-related quality of life in this domain than in the other measured domains, such as social life and family relations. Since this measure was only administered post-MBS surgery, it is not possible to speculate how weight-related quality of life scores might have changed in this sample from pre to post-surgery. Previous research has shown significant improvements in weight-related quality of life scores from pre to post MBS among adolescents, with sustained improvements up to 24-months (Reiter-Purtill et al., 2020). It may be beneficial to include these outcomes data when discussing MBS as a treatment option with adolescent patients and their families.

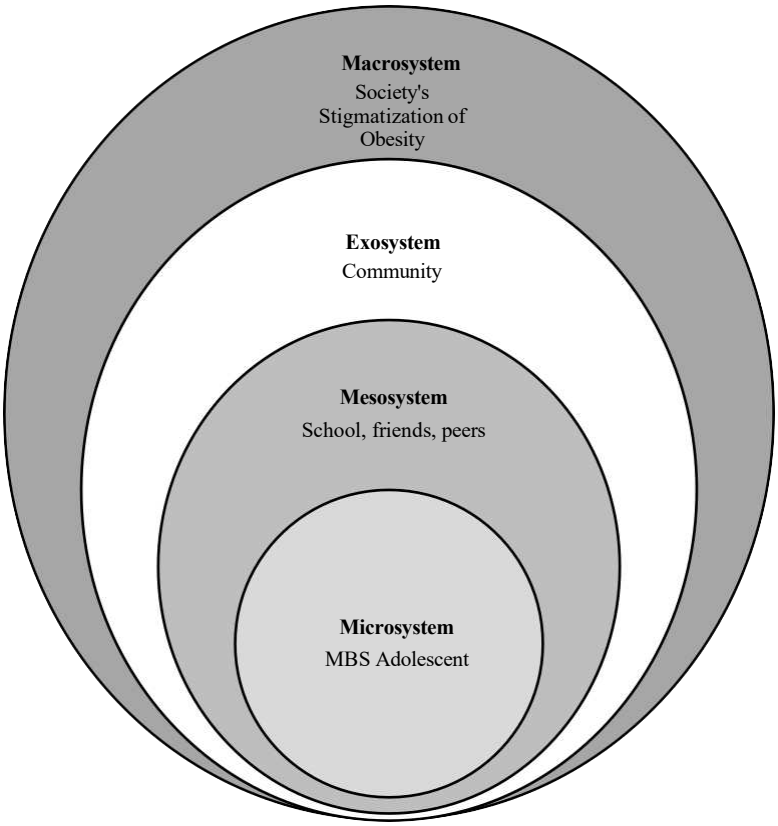
Limitations

This study has limitations, including a small sample size and a post-MBS perspective. There may also be a participant selection bias, in which adolescents with more positive experiences chose to participate in the research project. While additional steps in the coding and consensus processes were taken to protect against coder bias, the coders' personal beliefs may have unintentionally influenced the selection of codes and overarching theme. Additionally, participants were not interviewed before MBS; thus, data on the decision-making process and post-surgery changes are solely retrospective and may be influenced by post-surgery experiences. The study also has notable strengths, including utilizing a mixed-methods approach, the racial/ethnic diversity of the sample, and perspectives across adolescent years (from early high school to college).

Conclusion

In conclusion, this mixed-methods study provides novel insight into the pre and post-operative experience and decision-making process of adolescents undergoing MBS. Given the limited utilization of MBS for the treatment of severe obesity in this age group, these findings may help eligible patients and their family members better weigh the risks and benefits of undergoing surgery. While providers can offer insight into the physical risks and positive health benefits, the lived experiences of patients discussed in this work may offer other adolescents more information about the impact of MBS on their personal and social lives. Future research should explore why adolescents viewed MBS as a "last resort" treatment option. Overall, these findings are reassuring regarding the positive impact that MBS can have on adolescent patients navigating a complex phase of life.

Figure 1. Urie Bronfenbrenner's Theoretical Framework and the adolescent MBS participant.



Internal Changes: Microsystem

Both physical and mental adjustments become easier with time.
MBS leads to improved confidence
Despite significant changes adolescents retain their identity and sense of self after MBS

External Changes: Mesosystem

Support of friends and family was a key aspect of the MBS journey.
The importance of social eating is demonstrated by the difficulty in participating

External Changes: Exosystem

The adolescent noticed improved accessibility to activities in their environment.

External Changes: Macrosystem:

The adolescent notices the difference in the way they are treated and society's stigmatization of obesity.

Best Decision:

Crossing all systems.

The decision to pursue surgery was framed as their last resort.

Figure 2.
Consort diagram illustrating recruitment of participants.

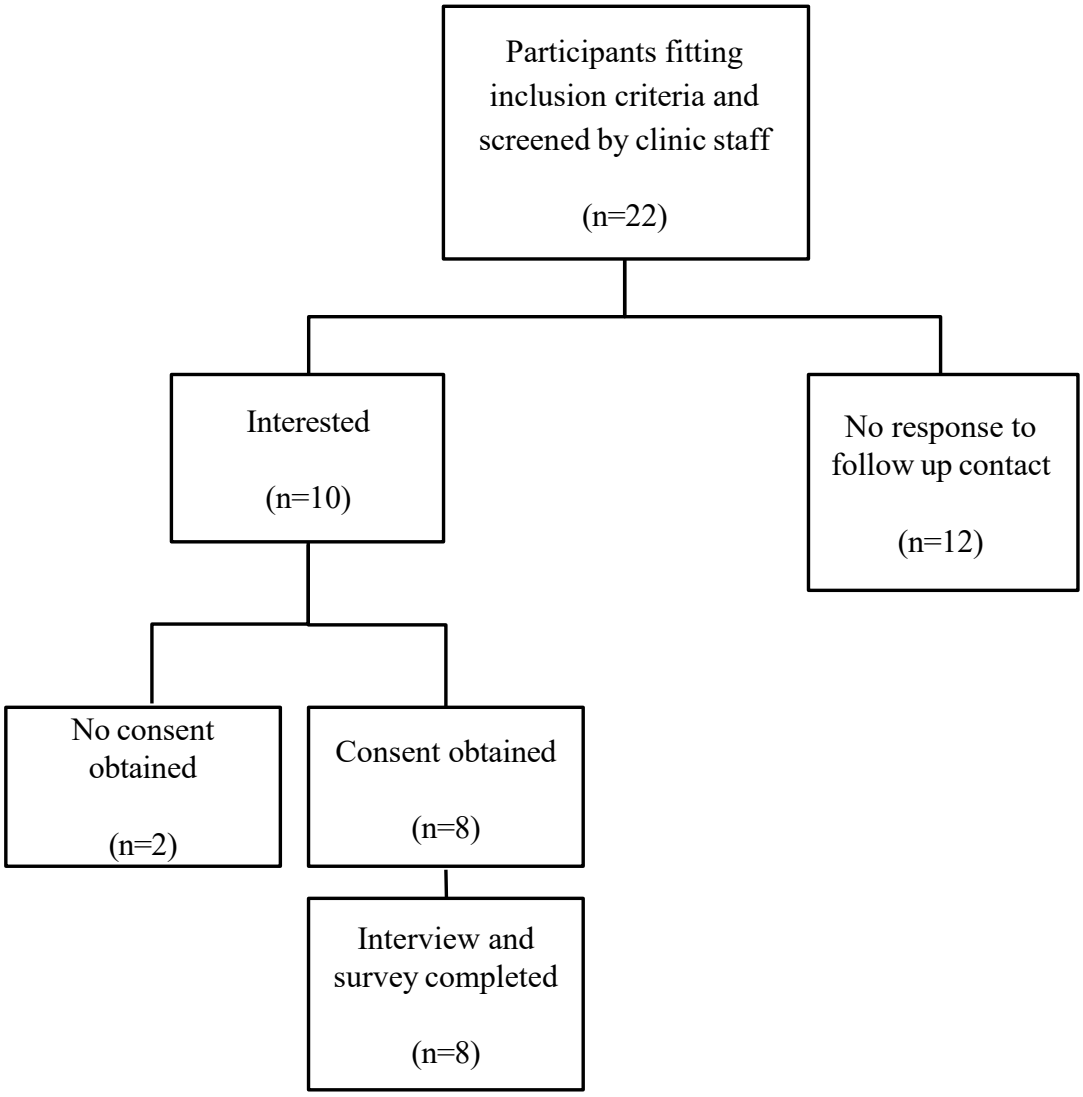


Table 1.
Demographic characteristics of participants (N = 8)

	Overall (N=8)
Age	
Mean (SD)	17.5 (1.6)
Range	15 – 20
Race*	
American Indian or Alaska Native	2 (25%)
Asian or Asian American	2 (25%)
Black or African American	0 (0%)
Hispanic or Latinx	4 (50%)
Middle Eastern or North African	0 (0%)
Native Hawaiian or Pacific Islander	0 (0%)
White or European	3 (37.5%)
Sex	
Female	6 (75%)
Male	2 (25%)
Education level	
High School Student	4 (50%)
High School Graduate	2 (25%)
College Student	2 (25%)
Number of siblings	
1	4 (50%)
2	1 (12.5%)
3	3 (37.5%)
Age at time of MBS	
Mean (SD)	16.4 (1.4)
Range	14 – 18
Family History of MBS	2 (25%)

** Participants could identify with more than one racial category.*

Table 2. Sample questions from semistructured interview guide.

Interview topic	Sample questions
Personal reflections	Describe how you decided to have MBS. How has this surgery impacted your life personally? Describe yourself to me. Is this different from how you would have described yourself to me before the surgery?
Perceptions of family dynamics	What did your family think about this decision and how did that make you feel? Do you talk to your family about food, eating, and the surgery? Do you feel close to a certain member of your family and discussing these issues with them, please tell me about that.
Perceptions of relationships with friends	Have you noticed any changes in your relationships with your friends since the surgery? Describe to me a little about your social life, who you hang out with, and how these groups have changed since surgery.

MBS = Metabolic Bariatric Surgery

Table 3.

Thematic Analysis and exemplar quotations for MBS participants.

Category	Exemplar quotations
Internal Changes: **Microsystem** Both physical and mental adjustments become easier with time.	1. It's gotten a lot easier, a lot easier, especially being over a year after. It's definitely gotten a lot, a lot easier. (PA1) 2. During the postop diet, here and there I'd have moments where I'd be like, 'wow,' like, 'I'm so frustrated.' Like I just want to eat normal food or I don't want to have like a protein shake and things like that. But like the first week postop was just, like, constant, like, being upset and being sad and things like that. But then after that it was just like, you know, living my life. (PA2)
MBS leads to improved confidence.	1. Like as an athlete, I never realized how like my skill was affected based off my weight. Like now, I can run faster, or I can jump higher or things like that, and so I've also noticed like a performance difference in the way that I play volleyball. And that also gives me a confidence. (PA2) 2. I would say it did have a big effect on me. I feel like my personality has stayed the same, but I feel like my confidence has grown. 'Cause just before I had my surgery was the musical last year when -- we did in Chicago. And like, we were dancing. We were doing the same things that we're doing during this musical, but I've noticed I have a lot more confidence. I have a lot less, like, anxiety when performing and what people think about me. Because I've become more confident in myself since the weight loss and I've also seen, like, my physical abilities have increased since I've lost the weight. I've been able to move in different ways. I've been able to, like, do different things that I wasn't able to do prior. (PA7) 3. So I feel like even though I'm not as fit as I could be, I feel like I'm healthier than I've been in a very long time and it does show physically. So I feel like I'm able to present

	more of who I am beyond just my weight and I feel less insecure about it. (PA6)
Despite significant changes, adolescents retain their identity and sense of self after MBS.	1. It was like I was me, but I was a different me, and like now I'm a better me, like a better [name of participant] and I'm happy to be here. (PA2) 2. I'd say I'm still the same person, but I've been able to kind of embrace myself a little bit more, and I feel like I've been able to – I don't know. Well I wouldn't say I wasn't outgoing before surgery, but I'd say it's easier to be outgoing. Like you have more energy. How do I say it? Like I'm still the same. It's just I have more ability to actually do what I want. (PA5) 3. I think that I'm pretty much the same. Like I feel like I do have a bit more, like, sense of self beyond my body now, like, yeah. Yeah. And I do think that I'm probably a bit more confident, like I dress differently. Like I used to always wear like a mask, like one of the surgical masks. I don't wear that anymore, you know. (PA6)
External Changes: **Mesosystem** Support of friends and family was a key aspect of the MBS journey.	1. Like my grandma and I actually had like a really sweet moment and she was like, "You know, like, regardless of how you look, like, we will always love you, we'll always support you." And she was like, "I'm glad that you're telling me" and even like throughout surgery and everything, like, we would text each other and I'd send her updates about how I'm doing and things like that. (PA2) 2. I personally feel like my friends then were always extremely nice to me, really just genuine people that I loved to hang out with. I feel like they never treated me differently for my weight. They never said anything that made me feel uncomfortable or nothing like that. (PA3) 3. I feel so relieved or – after surgery, I felt so relieved to know that, like, my weight was never like a factor to my friends, like, it doesn't really matter. I think even if, like, I woke up tomorrow and I gained back all the

	weight that I had lost, I know my friends still would be my friends and treat me the same as they treated me the day before. (PA4)
External Changes: **Macrosystem** The adolescent notices the difference in the way they are treated and society's stigmatization of obesity.	1. But I feel like now, in an odd way, I feel like I get offered more help in the store or just little things. People open the door open for you, or I'll go on walks in the morning and you have strangers, like, yeah, strangers telling you "good morning," and it's just little things like that that I had never experienced before that kind of made me like really, I guess, see that. (PA4) 2. I think that like in terms of like socially and stuff, I feel like before people would stare at me because I was big, but now people don't really like notice me at all, you know. So it's kind of just like I'm just, like, normal, and like all that kind of stuff, you know? (PA6) 3. But like, this may be, like, random, but it's like, I post stuff on the Internet, on social media and stuff, I remember when I posted something when I was really big, people made fun of me. . (PA6)
The importance of social eating is demonstrated by the difficulty in participating after MBS.	1. Sometimes, getting this small little plate of food, and my friends eating this big plate of food, watching them (friends) eat a whole big thing and me only being able to eat a small thing. And then, you know, them feeling like they have to rush because I finished early, and it's a very mentally diminishing for your friends and family and stuff. But if you have a strong mindset, you can definitely get through it. (PA1) 2. Like sometimes, if I'm with my friends and they want like a dessert or something, then I'll just like maybe eat one less bite of my main meal and have, like, one bite of the dessert with them so I can still have that aspect with them. And then, I just take leftovers home, and it's like my meal for the next day or something like that. But I just kind of navigate it differently, I guess, depending on who I'm with. But like at the end of the day, like, people shouldn't be paying attention to what I am and am not eating. It's not really their business, so it's like, I don't worry too

	much about what other people are thinking. It's like we're all out here to eat, so let me eat. (PA2) 3. Also, like the social aspect, like eating is a huge part of our social culture and you go out to eat with your friends. You go out to like – like there's food at school. Lunchtime's a whole social ordeal, and then when you're still on those pureed stage, when you're still on that liquid stage, it's like what of like – and it sucks. And also, even when you can eat normal foods, you're only able to eat like half of a hard boiled egg. And it's just like 'I'm full, guys.' (PA7)
The adolescent noticed improved accessibility to activities in their environment.	1. Also, a big benefit is the, like, clothes aspect. I can go to a normal – I can go to Old Navy and find clothes that fit me now. I can go to, like, an in-person store and find clothes that fit me. I can go to a store with my friends and look at the same clothes as them, and just go to like the large or the extra large while they look at the smalls, but still I'm there with them. (PA7) 2. Yeah, I think it's kind of like that because, I think that like the way that you dress does kind of reflect on, like, what you like, and what you do, and that kind of thing. And, like, I'd just wear like this huge shirt, like a Star Wars shirt. Like, this is a shirt that I would wear. It's like a really big Star Wars shirt and I would wear it, like, every day. I don't even like Star Wars. I don't know why I wore it all the time. But now it's like I wear like cute tops, like babydoll tops, like those kind of tops, like with bell bottoms jeans and stuff. (PA6) 3. I never felt comfortable enough to, like, really wear what I wanted, and kind of, like, go out and do the things, or – I remember like my friends, they wanted to go like do water park things, or go to the boardwalk, and little things like that and I wouldn't allow myself to go, just because of the fact that I was, well, I don't even know, like, if I can fit on the roller coaster. What if I'm too heavy to go on the slide? And just little thoughts like that, that

	you kind of have in the back of your head all the time. And it's so different now. (PA4)
Best Decision: **Crossing all systems** The decision to pursue surgery was framed as their last resort.	1. I tried a lot of different things and that was like kind of one of the last resort tools for me. So, I know, like, it wouldn't have happened any sooner. But yeah, I'm glad that now I can reap the benefits of it and see that, and I can be a better player in person now. (PA2) 2. I tried everything before and nothing would work for me to lose weight. And then this came about and it gave me the motivation again. (PA1) 3. Like I've tried probably every diet there was. I've tried everything. I've tried like -- I've tried liquid diets, I've tried milkshakes. I've tried meal prepping. Like I've tried vegetarian at one point, which I did not like. I even tried keto for a little while, which my doctors did not like, because it's not really good like in terms of, like, me growing. But I tried everything at this point. I tried everything (PA7)
In retrospect, adolescents viewed the surgery as life-changing.	1. Literally life-changing. It was literally life-changing. This surgery, it was honestly the best decision I could've ever made. It was amazing. (PA1) 2. So this situation, it also showed me, like, how much the people around me cared for me and supported me, which is a really big thing for me because losing so much weight in such a short amount of time is a really big – like I guess it's very life-changing. It makes a difference, it does. (PA4) 3. Well it's easier to talk to people, like, new people. It's definitely been a huge confident boost, saying like, if I can do this, you know, if I can lose a bunch of weight, I can do it again, or I can do almost anything. Yeah, it's been a huge help for me. (PA5)
Despite the challenges with MBS the adolescent had no regrets with their decision.	I just remember, like, being pretty upset after the surgery, and I almost kind of regretted it a little bit, although, you know, postop self now, like what, nine months, I'm like, she was silly, she was a silly little gal, because I do not regret it. (PA2)

	2. I would say think about it, think about it hard. Think how is this going to benefit my life and how is it going to make my life harder. So, I would just say think about it, truly, 'cause I don't regret the surgery, I don't. I'm quite happy with my choice because I do feel better. I am healthier. My labs are coming back as normal as my friends' are. Like I was normal before, but now I feel normal. (PA7) 3. If you have the opportunity, you know, there's no downsides, really. There's no downsides to getting the surgery. You'll find out more about yourself that way. (PA5)

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