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# Assessment of motivating and demotivating factors to undergo bariatric surgery in high-risk populations with correlation to generalized anxiety disorder and influence of others: a cross-sectional study

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**Background:** Very few research have looked at the causes and influences that push individuals into bariatric surgery. Although bariatric surgery is effective in boosting self-esteem, little is known about the precise physical characteristics people want to alter. **Methods:** This study was a descriptive, correlational cross-sectional study to achieve the objectives of the study. All overweight and obese population in Jeddah, Saudi Arabia. Study instrument was designed based on the data present in the latest literature. Study tool consisted of: (1) sociodemographic data, (2) motives of bariatric surgery, (3) concerns about bariatric surgery, (4) people affecting the decision of seeking bariatric surgery, and (5) general anxiety disorder scale.

**Results:** The study included 567 participants. More than half of the study participants were females (n = 335, 59.1%). The mean age among study participants was 27.88 years. Most of the participants selected themselves as the main person (n = 329). In the second place comes "person who had the surgery" (n = 72). A family member was prevalent among 59 participants and a friend among 57 participants. The partner has the least frequency. The most common reason was self-esteem among 26% followed by body image among 20%. The most frequent factor was "I am satisfied with my current weight loss method) among 220 participants followed by "I am afraid of any surgery and will avoid it unless absolutely needed" among 51 participants.

**Conclusion:** Bariatric surgery patients want to improve their health and live longer. Several people are dissatisfied with their bodies and seek cosmetic surgery. Patients desire bariatric surgery for their own and their loved ones', physicians', and peers' reasons. This study supports emphasizing the reasons why Jeddah, Saudi Arabia residents choose bariatric surgery and the demotivating issues.

Keywords: bariatric, surgery, weight loss

#### Introduction

Patients who are morbidly obese may get several health and quality of life (QoL) advantages from bariatric surgery<sup>[1,2]</sup>. Patients report increases in self-esteem and body image up to 4 years after surgery<sup>[3]</sup>, in addition to the medical issues that may be eradicated or better controlled<sup>[4]</sup>. Although many patients choose bariatric surgery to improve their health, few research

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#### **HIGHLIGHTS**

- Very few research have looked at the causes and influences that push individuals into bariatric surgery.
- Patients seek bariatric surgery for a variety of reasons, the most common of which are a desire to enhance their physical health and live longer.
- The results of this research lend credence to the recommendations of highlighting the reasons why would participant select to undergo bariatric surgery and the demotivating factors among the population from Jeddah, Saudi Arabia.
- This is the first research to pinpoint individual decisionmakers in patients' pursuit of bariatric surgery.

have examined the role that patients' perceptions of their physical appearance and other variables play in this choice. Patient bariatric surgery preoperative counseling and support services need an understanding of the elements that may simultaneously impact patient desire for surgery.

Worries about medical issues and health were shown to be more influential than concerns about attractiveness, QoL, and other psychosocial aspects in two studies done more than 15 years ago<sup>[5,6]</sup>. Recent research<sup>[7]</sup> verified that people sought

surgical treatment largely for physical health reasons, but they also cited emotional motives like 'desperation' as a reason to go under the knife. The latter research's results were congruent with those of another small qualitative investigation<sup>[8]</sup>, although the study's limitations were its reliance on retrospective reporting and its mostly white and female population. Furthermore, Brantley et al. [9] showed that the majority of patients cited health as the main reason for considering bariatric surgery, whereas just 4% cited vanity as the key reason. Examining the top three reasons why patients seek surgery, however, the number of patients citing attractiveness grew to over 20%<sup>[9]</sup>, suggesting that appearance may in fact be a key motivating factor for many patients. Knowledge of patients' motivations and expectations for surgery necessitates an update that includes a comprehensive assessment of factors that may simultaneously affect patients' decisions in light of the significant changes in bariatric surgery safety, access, and procedures that have occurred in recent decades<sup>[10,11]</sup> (rather than dichotomous or rank-ordered evaluations).

Patients may also have different expectations about the cosmetic results of bariatric surgery. Many patients go into surgery with false assumptions about how much weight they would lose and how their bodies will alter as a consequence<sup>[7,12]</sup>. After surgery, some people may feel bad about their bodies because of the extra skin they did not expect to have<sup>[13]</sup>. Most patients following bariatric surgery do not have access to body contouring surgery to remove extra skin in particular body locations<sup>[14]</sup>, and those who do may be dissatisfied with their results<sup>[14,15]</sup>. A recent meta-analysis emphasized the fact that most previous research on body image in bariatric surgery have relied on broad measures of body dissatisfaction<sup>[16]</sup>. To effectively advise patients regarding changes to their bodies as a result of surgery, the authors stressed the necessity for examining 'multidimensional aspects of body image' beyond generic measurements<sup>[16]</sup>.

Patients may be encouraged to pursue surgery for a variety of reasons, including those related to their health and mental well-being, but some individuals may also play a vital part in this process. To far, there has been no research to determine whether or not a patient's close network (including family, friends, partners, colleagues, healthcare providers, and others) influences their choice to have surgery. Patients who are thinking about or getting ready for surgery may find this information helpful.

Multiple Saudi Arabian research have shown that laparoscopic sleeve gastrectomy is a viable option for the treatment of morbid obesity in adults. This is because it causes people to lose weight, which boosts their confidence and QoL, and because it restores the normal metabolism of variables in tissues, among other benefits<sup>[17,18]</sup>. Research conducted in Jeddah, Saudi Arabia, has shown that both prebariatric and postbariatric dietary knowledge, as well as awareness of the safety, efficacy, and repercussions of bariatric surgery, are inadequate<sup>[19–21]</sup>. Several studies<sup>[22,23]</sup> found that health is the primary motive indicated by patients seeking bariatric surgery, followed by a strong desire to improve the body's look, enhancing QoL, and lengthening lifetime.

The purpose of this research was to provide a more nuanced evaluation of patients' unhappiness with and desire for surgery to improve the look of certain body parts to bring previous studies on patients' motivation for seeking bariatric surgery up to date. The specific objectives of this study were: (1) to study the influence of others on the decision of seeking bariatric surgery, (2)

determine the motivating factors to undergo bariatric surgery among overweight people, and (3) spotlight on the demotivating factors to undergo bariatric surgery among overweight people.

In addition, the research adds to the body of knowledge by examining the impact of various individuals on surgical decision-making for individual patients. We hypothesized that, in keeping with previous studies<sup>[5,6]</sup>, patients would cite concerns about their physical condition as the key factor in deciding to have surgery. We figured that people would be very unhappy with their bodies and would be eager to have surgery to alter their look in a number of ways. Along with close loved ones, such as relatives or partners and spouses, we hypothesized that patients would choose themselves as the most influential person influencing their choice to pursue bariatric surgery.

#### Methods

#### Study design and setting

This study was a descriptive, correlational cross-sectional study to achieve the objectives of the study. A cross-sectional study because of the capture information based on data gathered for a specific point in time. The data gathered in the form of participants at a single point of measurement. The advantages of cross-sectional study includes proof and disproof assumptions, not costly to perform, and does not require a lot of time. Furthermore, it captures a specific point in time, contains multiple variable at the time of the data snapshot, the data can be used for various types of research, and may findings and outcome can be analyzed to create new theories or in-depth research. This study was conducted among overweight and obese population in Jeddah, Saudi Arabia. Data was collected during the first week of September 2022.

#### Study population

All overweight and obese population in Jeddah, Saudi Arabia. Obesity and overweight were defined according to WHO<sup>[24]</sup>.

#### Sampling and Sample

Participants were randomly selected from general population in Jeddah, Saudi Arabia, the desired number of participants would be 400 people at least. To be 95% confident, with a 5% margin of error, in a population size around one million Saudi adults in Jeddah City, with around 30% response rate, we will need to survey 1000 participants to recruit 300 as a study population.

## Instrument of the study

Study instrument was designed based on the data present in the latest literature. Study tool consisted of: (1) sociodemographic data, (2) motives of bariatric surgery<sup>[5]</sup>, (3) concerns about bariatric surgery<sup>[25]</sup>, (4) people affecting the decision of seeking bariatric surgery<sup>[22]</sup>, and (5) general anxiety disorder scale<sup>[26]</sup>.

#### Data collection

In this study, data was collected through online questionnaire among population in Jeddah, Saudi Arabia with BMI more than 25 kg/m<sup>2</sup>.

# Table 1 Characteristics of study participants.

Characteristics	N = 567
Sex [n (%)]	
Male	232 (40.9)
Female	335 (59.1)
Nationality [n (%)]	
Saudi	431 (76.0)
Non-Saudi	136 (24.0)
Occupation [n (%)]	
Employed	386 (68.1)
Nonemployed	18 (31.9)
Age [mean (SD)]	27.88 (0.422)
Height [mean (SD)] (cm)	163.63 (0.75)
Weight [mean (SD)] (kg)	76.81 (1.06)

#### Statistical analysis

Data obtained from the questionnaire were entered and analyzed using SPSS IBM program, version 23 computer software. Sociodemographic data are presented using descriptive statistics as means, median, percentages, and SD. Normality analysis was done to determine the use of either independent t-test and one-way analysis of variance are used to show statistical significance among participants characteristics or nonparametric tests. The  $\chi^2$  test is used to show relationship between categorical variables.

#### Ethical and administrative consideration

Approval of Batterjee Medical College was gained to allow collect data from study participants. Furthermore, informed consent was gained from study participants.

#### **Results**

The study included 567 participants. More than half of study participants were females (n=335, 59.1%). The mean age among study participants was 27.88 years. Most of the study participants were Saudi (n=431, 76%). Moreover, most of the study participants were employed (n=386, 68.1%). The mean

BMI among study participants was 28.6 kg/m<sup>2</sup> indicating that all of study participants are at least overweight (Table 1).

## Person who has the most influence upon the decision of undergoing bariatric surgery or avoiding it

Most of participants selected themselves as the main person (n=329). In the second place comes "person who had the surgery" (n=72) as illustrated in Figure 1. A family member was prevalent among 59 participants and a friend among 57 participants. The partner has the least frequency.

#### The reason for planning to undergo bariatric surgery

Figure 2 demonstrates the percentage of the reason for planning to undergo bariatric surgery among people included in this study (n=64). The most common reason was self-esteem among 26% followed by body image among 20% as demonstrated in Figure 2.

#### Views and concerns about bariatric surgery

Figure 3 highlights the percentage of the demotivating factors for undergoing bariatric surgery among study participants (n = 343). The most frequent factor was "I am satisfied with my current weight loss method) among 220 participants followed by "I am afraid of any surgery and will avoid it unless absolutely needed" among 51 participants as shown in the figure.

#### Discussion

An updated look at what drives people to seek out bariatric surgery is provided by the present research. Improvements in physical health and life expectancy were cited most often by patients as important reasons in making their choice. Consistent with previous research, this suggests that patients' physical health is more important than their worries about their looks or other psychosocial issues when deciding whether or not to have surgery<sup>[5,6,8,9]</sup>.

Although "work" was ranked as the lowest motivating factor overall, it was ranked higher by non-White participants and those with higher BMIs than it was by white participants and those with

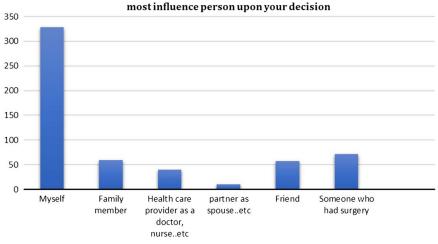


Figure 1. Frequency of the affecting person on the decision to undergo the surgery.

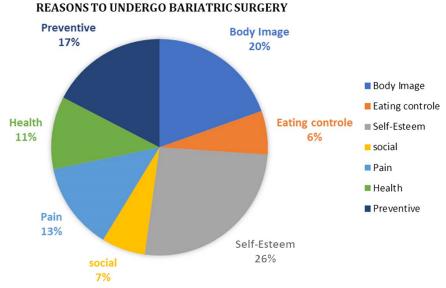


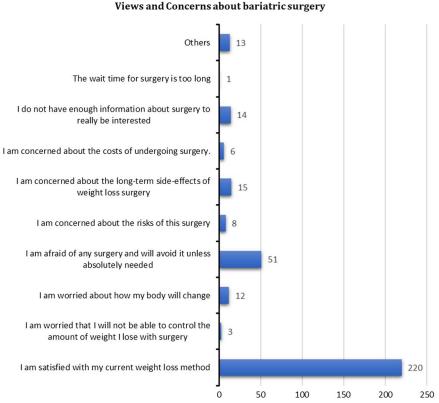
Figure 2. The reason why participants decide to undergo bariatric surgery.

lower BMIs who were pursuing bariatric surgery. Patients with more physical impairment (including disability) or with greater perceived impairment by employers who may discriminate against employing persons with BMI of 40 kg/m<sup>2[27–30]</sup> may be more concerned about their capacity to work. It is especially important for minorities who are obese to lose weight to improve their employment chances since they may face "double discrimination" as a result of their intersecting stigmatized identities<sup>[31]</sup>. Changes in QoL and other psychosocial characteristics may be studied in the future as a result of bariatric surgery, as may be the prevalence of impairment and discrimination in the workplace related to obesity.

Patients' concern with their physical appearance was a major component in their decision to get surgery even if it was not the main reason they sought it. Patients were most unhappy with their stomachs and thighs, as well as their skin color and weight. Patients wanted surgery to alter the shape of their chest, shoulders, breasts, stomach, thighs, and calves. These results are consistent with previous research showing that patients with obesity who seek nonsurgical weight loss are also the most dissatisfied with their waist, thighs, and lower body<sup>[32]</sup>, and that tummy tucks, upper arm lifts, and thigh or lower body lifts are among the most common body contouring procedures after massive weight loss<sup>[33]</sup>. In addition, analysis showed that higher perceptions of psychosocial, QoL, and work-related motives for pursuing bariatric surgery were linked with greater willingness to change. Patients may equate physical alterations with gains in social and vocational functioning, as shown by our results. Patients should be counseled about the potential cosmetic and functional effects of extra skin after surgery to establish reasonable expectations and avoid disappointment after the procedure. Possible areas for further study include the relationship between preoperative motivation and postoperative outcomes such weight reduction, diet adherence, QoL, mood, and body image<sup>[7]</sup>.

This is the first research to pinpoint individual decision-makers in patients' pursuit of bariatric surgery. The majority of patients who sought out bariatric surgery said that they were motivated to do so by themselves. Aside from friends and coworkers, persons who had themselves had bariatric surgery were cited as inspirations. This data has ramifications for both the training of medical staff and the organization of counseling sessions for those thinking about having bariatric surgery. Some doctors may have misconceptions and unfavorable attitudes about bariatric surgery because they think it's a "easy cure" for patients who aren't committed to making lifestyle changes<sup>[34–36]</sup>. It may be especially important to disseminate accurate information to primary care providers about the advantages of bariatric surgery so that healthcare professionals can (if indicated) communicate this information to patients who may hold their own misconceptions about this treatment option and may not have otherwise considered it<sup>[36]</sup>. Patients considering bariatric surgery may benefit from hearing from individuals who have been through the process themselves by having individuals who have undergone the procedure speak at information sessions, having access to online support group resources, and/or being required to attend an inperson support group before surgery.

This study has limitations since it used cross-sectional selfreport data from a single city, only Jeddah. Over time, a patient's dissatisfaction with their looks and concentration on particular characteristics and people may change. Future study may examine motivating factors, people, and desire to change appearance postoperative. More bariatric surgery patients should duplicate the current outcomes (including factor analysis of the Repetitive Behavior Scale). A larger sample size is needed for more thorough statistical modeling of additional factors (such as prior weight loss efforts) that may influence surgical intentions. Our sample did not analyze the importance of insurance eligibility as a motivation for considering bariatric surgery. Future study should investigate motivational elements in a sample of patients with and without insurance coverage, or among those who don't know their insurance status, to accurately determine the relative influence of this feature on patients' desire to seek bariatric surgery.



#### Figure 3. Frequency of demotivating factors to undergo bariatric surgery among study participants.

#### Conclusion

Patients seek bariatric surgery for a variety of reasons, the most common of which are a desire to enhance their physical health and live longer. Several patients also report being quite unhappy with their bodies and wanting to have surgery to alter the look of certain areas. Patients seek out bariatric surgery for several reasons, including their own motivations and those of their loved ones, their doctors, and their peers who have done the procedure. The results of this research lend credence to the recommendations of highlighting the reasons why would participant select to undergo bariatric surgery and the demotivating factors among population from Jeddah, Saudi Arabia.

# **Ethical approval**

Institutional and review board approval was obtained from the ethical and scientific community of Batterjee Medical College for Sciences and Technology.

#### Consent

Participation was voluntary for all participants and all the participants had the right to withdraw at any time.

#### Sources of funding

None.

#### **Conflicts of interest disclosure**

The authors declare that they have no financial conflict of interest with regard to the content of this report.

# Research registration unique identifying number (UIN)

Not applicable.

#### Guarantor

Ahmed H. Mousa.

### Provenance and peer review

Not commissioned, externally peer reviewed.

#### References

- [1] Buchwald H, Avidor Y, Braunwald E, et al. Bariatric surgery: a systematic review and meta-analysis. JAMA 2004;292:1724–37.
- [2] Schauer PR, Bhatt DL, Kirwan JP, et al. Bariatric surgery versus intensive medical therapy for diabetes 5-year outcomes. N Engl J Med 2017;376: 641–51
- [3] Sarwer DB, Wadden TA, Spitzer JC, et al. 4-year changes in sex hormones, sexual functioning, and psychosocial status in women who underwent bariatric surgery. Obes Surg 2018;28:892–9.
- [4] Adams TD, Davidson LE, Litwin SE, *et al.* Health benefits of gastric bypass surgery after 6 years. JAMA 2012;208:1122–31.

- [5] Munoz DJ, Lal M, Chen EY, et al. Why patients seek bariatric surgery: a qualitative and quantitative analysis of patient motivation. Obes Surg 2007:17:1487–91.
- [6] Libeton M, Dixon JB, Laurie C, et al. Patient motivation for bariatric surgery: characteristics and impact on outcomes. Obes Surg 2004;14: 392–8
- [7] Peacock JC, Perry L, Morien K. Bariatric patients' reported motivations for surgery and their relationship to weight status and health. Surg Obes Relat Dis 2018;14:39–46.
- [8] Roberson DW, Neil JA, Pories ML, et al. Tipping point: factors influencing a patient's decision to proceed with bariatric surgery. Surg Obes Relat Dis 2016;12:1086–90.
- [9] Brantley PJ, Waldo K, Matthews-Ewald MR, et al. Why patients seek bariatric surgery: does insurance coverage matter? Obes Surg 2014;24: 961–4
- [10] Reames BN, Finks JF, Bacal D, et al. Changes in bariatric surgery procedure use in Michigan, 2006-2013. JAMA 2014;312:959–61.
- [11] Flum DR, Kwon S, MacLeod K, et al. The use, safety and cost of bariatric surgery before and after Medicare's national coverage decision. Ann Surg 2011;254:860–5.
- [12] Wee CC, Jones DB, Davis RB, et al. Understanding patients' value of weight loss and expectations for bariatric surgery. Obes Surg 2006;16: 496–500.
- [13] Steffen KJ, Sarwer DB, Thompson JK, et al. Predictors of satisfaction with excess skin and desire for body contouring after bariatric surgery. Surg Obes Relat Dis 2012;8:92–7.
- [14] Ktizinger HB, Abayev S, Pittermann A, et al. After massive weight loss: patients' expectations of body contouring surgery. Obes Surg 2012;22: 544–8.
- [15] Sarwer DB, Fabricatore AN. Psychiatric considerations of the massive weight loss patient. Clin Plast Surg 2008;35:1–10.
- [16] Ivezaj V, Grilo CM. The complexity of body image following bariatric surgery: a systematic review of the literature. Obes Rev 2018;19: 1116–40.
- [17] Aldaqal S, Sehlo M. Self-esteem and quality of life in adolescents with extreme obesity in Saudi Arabia: the effect of weight loss after laparoscopic sleeve gastrectomy. Gen Hosp Psychiatry 2013;35: 259–64.
- [18] Bawahab M, Assiri A, Maksoud W, et al. Effects of weight reduction after sleeve gastrectomy on metabolic variables in Saudi obese subjects in Aseer Province of Kingdom of Saudi Arabia. Obes Surg 2017;27:2005–14.
- [19] Alkhaldy A, Alshehri B, Albalawi N, et al. General and postbariatric nutritional knowledge among patients undergoing bariatric surgery. J Nutr Metab 2020;2019:6549476.
- [20] Altaf A, Abbas M. Public perception of bariatric surgery. Saudi Med J 2019;40:379–84.

- [21] Abouhamda A, Gan Y, Altowairqi F. Perception of knowledge, attitude, practice of safety, effectiveness, consequences and management of bariatric surgery among community in Jeddah City. 2020.
- [22] Pearl R, Wadden T, Walton K, et al. Health and appearance: factors motivating the decision to seek bariatric surgery. Surg Obes Relat Dis 2019;15:636–42.
- [23] Jolles SA, Alagoz E, Liu N, et al. Motivations of males with severe obesity, who pursue medical weight management or bariatric surgery. J Laparoendosc Adv Surg Tech A 2020;29:730–40.
- [24] WHO. Obesity. 2020. Accessed 9 August 2020. https://www.who.int/topics/obesity/en/#:~text=A%20crude%20population%20measure%20 of,than%2025%20is%20considered%20overweight
- [25] Wharton S, Serodio K, Kuk J, et al. Interest, views and perceived barriers to bariatric surgery in patients with morbid obesity. Clin Obes 2016;6: 154–60.
- [26] Spitzer R, Kroenke K, Williams J, et al. A brief measure for assessing generalized anxiety disorder. Arch Intern Med 2006;166:1092.
- [27] Pearl RL, Wadden TA, Tronieri JS, et al. Everyday discrimination in a racially diverse sample of patients with obesity. Clin Obes 2018;8:140–6.
- [28] Spahlholz J, Baer N, Konig HH, et al. Obesity and discrimination a systematic review and meta-analysis of observational studies. Obes Rev 2016;17:43–55.
- [29] Mays VM, Cochran SD, Barnes MW. Race, race-based discrimination, and health outcomes among African Americans. Annu Rev Psychol 2007;58:201–5.
- [30] Puhl RM, Andreyeva T, Brownell KD. Perceptions of weight discrimination: prevalence and comparison to race and gender discrimiation in America. Int J Obes 2008;32:992–1000.
- [31] Himmelstein MS, Puhl RM, Quinn DM. Intersectionality: an understudied framework for addressive weight stigma. Am J Prev Med 2017;53:421–31.
- [32] Sarwer DB, Wadden TA, Foster GD. Assessment of body image dissatisfaction in obese women: specificity, severity, and clinical significance. J Consult Clin Psychol 1998;66:651–4.
- [33] American Society of Plastic Surgeons. 2017 Plastic Surgery Statistics Report. 2017. https://www.plasticsurgery.org/documents/News/Statistics/ 2017/plastic-surgery-statistics-full-report-2017.pdf
- [34] Vartanian LR, Fardouly J. Reducing the stigma of bariatric surgery: benefits of providing information about necessary lifestyle changes. Obesity (Silver Spring) 2014;22:1233–7.
- [35] Trainer S, Brewis A, Wutich A. Not 'taking the easy way out': reframing bariatric surgery from low-effort weight loss to hard work. Anthropol Med 2017;24:96–110.
- [36] Funk LM, Jolles S, Fischer LE, et al. Patient and referring practitioner characteristics associated with the likelihood of undergoing bariatric surgery: a systematic review. JAMA Surg 2015;150:999–1005.