

# Factors and barriers influencing the decision to undergo body contouring surgery after bariatric surgery

## A cross-sectional study

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### ABSTRACT

**الأهداف:** التعرف على العوامل والتنبؤات التي تلعب دوراً في تشكيل عملية صنع القرار المرضى ما بعد علاج السمنة عند التفكير في الجراحة التجميلية.

**المنهجية:** تم إجراء هذه الدراسة المقطعية في مستشفى المركز الطبي التخصصي بالرياض، المملكة العربية السعودية. تم جمع بيانات الدراسة في الفترة ما بين يناير ومارس 2023. ولجمع البيانات اللازمة، تم توزيع استبيان ذاتي على المشاركين من خلال منصة المراسلة WhatsApp.

**النتائج:** ومن بين 445 استجابة تم تحليلها، أبلغ 71.2% عن وجود طيات جلدية زائدة. خضع ما مجموعه 62 (13.9%) من المشاركين لجراحة نحت الجسم، وتم إجراء معظمها في منطقة الجذع (67.7%). ارتبط كون المريض أنثى بمعدلات إحصائية أعلى بشكل ملحوظ لجراحة نحت الجسم (82.3%)، وكذلك تحقيق أفضل وزن بعد عامين (37.1%)،  $p=0.003$  أو أكثر من عامين (14.5%)،  $p=0.003$ . من بين أولئك الذين لم يفكروا في إجراء جراحة نحت الجسم، كان السبب الأكثر أهمية الذي تم الإبلاغ عنه هو الاعتقاد بعدم الحاجة إلى مثل هذه العمليات الجراحية، وهو ما يمثل 41.1% من الردود.

**الخلاصة:** وجدت هذه الدراسة أن كون المرضى إناث، وتحقيق الوزن الأمثل في غضون عامين أو أكثر بعد جراحة السمنة، والتغير المتوسط الأصغر في مؤشر كتلة الجسم كانت تشكل تنبؤات هامة لجاء جراحة نحت الجسم في المستقبل. هذه النتائج مهمة لتقديم المشورة والتثقيف لمرضى ما بعد السمنة فيما يتعلق بخياراتهم لإجراءات نحت الجسم.

**Objectives:** To identify the factors and predictors that play a role in shaping the decision-making process of post-bariatric patients when considering aesthetic surgery.

**Methods:** This cross-sectional study was carried out at the Specialized Medical Center Hospital in Riyadh, Saudi Arabia. Data collection for the study occurred between January and March 2023. To gather the necessary data, a self-administered questionnaire was distributed to participants through the messaging platform WhatsApp.

**Results:** Among the 445 responses analyzed, 71.2% reported having excess skin folds. A total of 62 (13.9%) participants underwent body contouring surgery,

most of which was carried out in the trunk region (67.7%). Being female was associated with statistically significantly higher rates of body contouring surgery (82.3%,  $p=0.002$ ), as was achieving one's best weight after 2 years (37.1%,  $p=0.003$ ) or more than 2 years (14.5%,  $p=0.003$ ). Among those who did not consider body contouring surgery, the most important reason reported was the belief that such surgeries were not needed, accounting for 41.1% of responses.

**Conclusion:** This study found that female gender, achieving optimum weight within 2 or more years post-bariatric surgery, and a smaller median change in body mass index were significant predictors of future body contouring surgery. These findings are important for advising and educating post-bariatric patients regarding their options for body-contouring procedures.

**Keywords:** bariatric surgery, body contouring surgery, predictors, barriers, predictive factors

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The rising prevalence of obesity and its consequential health complications has led to a notable increase in the utilization of bariatric surgery.<sup>1</sup> Extensive research has consistently demonstrated the efficacy of bariatric surgery as a highly effective method for weight loss, with substantial improvements observed in metabolic health parameters and overall quality of life.<sup>2</sup> However, one common challenge following significant weight loss after bariatric surgery is the presence of excess skin and soft tissues, which can result in body contour deformities and dissatisfaction with one's physical appearance.<sup>3</sup> In such cases, aesthetic surgery offers a valuable solution for post-bariatric patients, enabling them to enhance their body contour and improve their overall appearance.<sup>4</sup> The American Society of Plastic Surgeons reported that in 2020 alone, 46,577 body contouring procedures were carried out in the United States following massive weight loss.<sup>5</sup> A study carried out in Saudi Arabia involving 128 patients revealed that a significant proportion (78.1%), expressed a desire to undergo body contouring surgery following bariatric surgery.<sup>6</sup> However, it is important to note that despite the advantages of aesthetic surgery, not all post-bariatric patients choose to pursue it. The decision to undergo aesthetic surgery is influenced by various factors, encompassing sociodemographic, psychological, and clinical aspects.<sup>3,4</sup> Gaining a comprehensive understanding of these factors and predictors is essential for enhancing patient counseling and satisfaction in the context of post-bariatric care.

Several factors influence the decision to undergo aesthetic surgery after bariatric surgery, as observed in studies carried out in the United States. These factors include age, gender, insurance status, and geographic location. Younger females are more likely to opt for aesthetic surgery, as are individuals residing in densely populated areas. A study based on the Statewide Planning and Research Cooperative System (SPARCS) database, which analyzed 37,806 patients, revealed that female patients who were young, Hispanic, insured, and had undergone sleeve gastrectomy were more inclined to undergo aesthetic procedures.<sup>9</sup> These findings emphasize the importance of considering these factors when counseling patients and providing individualized care. Patients' dissatisfaction with their body image,

particularly in the waist/abdomen and thigh regions, is a prevalent factor influencing the decision to undergo aesthetic surgery after bariatric procedures.<sup>10-12</sup> It is important to note that there is a significant correlation between psychological factors and cosmetic surgery, as many post-bariatric patients experience the negative impact of excess skin on their mental well-being.<sup>13</sup> After undergoing aesthetic surgery, patients reported significant improvement in their depressive symptoms; the main 2 being 'feelings of worthlessness' and 'difficulty concentrating'.<sup>14</sup>

This study aims to fill a critical research gap by investigating the factors and predictors that drive post-bariatric patients to pursue aesthetic surgery, particularly in the context of Saudi Arabia where limited literature exists on this topic. The study will focus on exploring the sociodemographic, psychological, and clinical factors associated with the decision to undergo aesthetic surgery after bariatric procedures. The findings of this study will provide valuable insights into the motivations behind patients' choices and enable clinicians to better tailor patient counseling and care, ultimately optimizing post-bariatric surgical outcomes.

**Methods.** This study employed a cross-sectional survey design to examine the factors and predictors associated with undergoing aesthetic surgery among individuals who had previously undergone bariatric surgery. A total of 448 participants who met the inclusion criteria were recruited from the Specialized Medical Center Hospital in Riyadh, Saudi Arabia. The inclusion criteria required participants to be over 18 years of age and to have undergone bariatric surgery at least 6 months prior to the study. Those who had undergone aesthetic surgery prior to bariatric surgery were excluded from the study. Patients below the age of 18 or those who declined to participate were also excluded. Participants were assured of anonymity, and written informed consent was obtained from all individuals who agreed to take part in the survey. To determine the sample size, we utilized the Raosoft sample size calculator, taking into account a 5% margin of error and a 95% confidence level. The calculator recommended a minimum sample size of 274 participants. Considering possible incomplete or ineligible responses, we slightly oversampled, and a final sample of 445 participants was recruited for the study.

Data collection was carried out using a self-administered survey questionnaire, which they received via WhatsApp. The survey was pilot-tested among 20 bariatric surgery patients to assess its clarity and

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validity. After translation, the questionnaire underwent further validity and reliability testing. Face validity was evaluated through cognitive interviewing with 20 participants who provided feedback on question comprehension and cultural appropriateness. Minor wording revisions were carried out based on their input. Content validity was ensured through rigorous forward-backward translation carried out by independent translators. Internal consistency as measured by Cronbach's alpha was 0.85, demonstrating high reliability. To ensure accurate translation, the English questionnaire was professionally translated into Arabic and then back-translated for verification. The translated questionnaire was administered online through Google Forms in a self-administered format. The purpose of the study was clearly stated in the interface to provide participants with a clear understanding. The questionnaire was developed based on previously published studies that covered similar topics.<sup>7,9,15</sup>

The questionnaire was divided into 3 parts. The first part gathered socio-demographic information, including age, gender, nationality, relationship status, and education level. The second part focused on bariatric surgery-related questions, such as the type of surgery, time elapsed since the surgery, body mass index (BMI) before and after the surgery, and the presence of post-surgery skinfolds. The final part consisted of questions pertaining to patients' desires and barriers towards undergoing body-contouring surgery, whether they had already undergone plastic surgery after bariatric surgery, and their level of satisfaction with the outcomes.

Ethical approval for the study was obtained from the Institutional Review Board and Research Ethics Committee, with reference number E-22-7399. All participants provided informed consent prior to their participation, and the study adhered to the principles outlined in the Declaration of Helsinki. The research was carried out in accordance with the guidelines outlined in the STROBE checklist, ensuring the appropriate reporting of observational studies.<sup>16</sup>

**Statistical analysis.** Data analysis for this study was carried out using RStudio, specifically utilizing R version 4.2.2. Descriptive statistics were used to present the data, with frequencies and percentages reported for categorical variables, and median and interquartile range (IQR) reported for continuous variables. Inferential statistics were applied to examine the factors associated with undergoing body-contouring surgery. For categorical variables with multiple categories, Fisher's exact test or Pearson's Chi-squared test was employed. For numerical data, the Wilcoxon rank

sum test was utilized. The effect of bariatric surgery on change in BMI was analyzed using the Wilcoxon rank sum test. As this test is designed to compare differences between 2 independent groups on a continuous variable, we first computed the BMI difference value for each patient by subtracting their postoperative BMI from their preoperative BMI. This resulted in a new variable representing the magnitude of BMI change for each individual. The Wilcoxon rank sum test was then applied to assess whether the median BMI difference value was statistically significantly different from zero, rather than carrying out a time-based analysis comparing BMI values at multiple time points before and after surgery. Use of the BMI difference variable in this manner allowed us to determine if bariatric surgery effectively reduced BMI using a non-parametric test suitable for analysis involving 2 related samples, in this case a patient's preoperative and postoperative BMI, while accounting for the non-normal distribution of BMI change scores. The significantly associated variables from the inferential analysis were further used as independent variables in a multivariate binomial logistic regression analysis. Undergoing a body-contouring surgery (no versus yes) was the dependent variable. The outcomes were presented as odds ratio (OR) and their respective 95% confidence intervals (CIs). A *p*-value of <0.05 indicated statistical significance.

**Results.** In the current study, a total of 448 responses were received through the online platform. However, 3 records were excluded due to invalid or missing age parameters, resulting in 445 responses being included in the analysis. Among the participants, the majority fell into the age group of 30 to less than 45 years (54.2%), were married (68.1%), employed (55.5%), and held a bachelor's degree (65.4%). The majority of participants were Saudi nationals (84.5%). Further details regarding the sociodemographic characteristics can be found in **Table 1**. Comorbidities were present in 16.9% of the participants, with gastroesophageal reflux disease (24.0%), hypertension (16.0%), and diabetes (14.7%) being the most prevalent conditions among those with comorbidities.

Regarding bariatric surgeries, the majority of participants had undergone their procedures more than 2 years prior (88.1%), and gastric sleeve surgeries were the most common type of surgery carried out (95.7%). The median (IQR) change in BMI after bariatric surgery was -16.6 kg/m<sup>2</sup> (-21.1 to -13.0), indicating a significant reduction in body weight. Interestingly, nearly one-third of the participants achieved their best

**Table 1** - Sociodemographic characteristics.

Parameters	Overall (N=445)	Underwent a body contouring surgery		P-values
		No (n=383)	Yes (n=62)	
<i>Age (years)</i>				
18 to <30	68 (15.3)	57 (14.9)	11 (17.7)	0.788
30 to <45	241 (54.2)	210 (54.8)	31 (50.0)	
45 to <60	125 (28.1)	107 (27.9)	18 (29.0)	
60 or more	11 (2.5)	9 (2.3)	2 (3.2)	
<i>Gender</i>				
Male	156 (35.1)	145 (37.9)	11 (17.7)	0.002
Female	289 (64.9)	238 (62.1)	51 (82.3)	
<i>Nationality</i>				
Saudi	376 (84.5)	320 (83.6)	56 (90.3)	0.172
Non-Saudi	69 (15.5)	63 (16.4)	6 (9.7)	
<i>Relationship status</i>				
Single	106 (23.8)	88 (23.0)	18 (29.0)	0.700
Married	303 (68.1)	263 (68.7)	40 (64.5)	
Divorced	31 (7.0)	27 (7.0)	4 (6.5)	
Widowed	5 (1.1)	5 (1.3)	0 (0.0)	
<i>Level of educational</i>				
Below high school	18 (4.0)	16 (4.2)	2 (3.2)	0.926
High school	89 (20.0)	78 (20.4)	11 (17.7)	
Bachelor degree	291 (65.4)	248 (64.8)	43 (69.4)	
Master degree	42 (9.4)	37 (9.7)	5 (8.1)	
Doctorate degree	5 (1.1)	4 (1.0)	1 (1.6)	
<i>Employment status</i>				
Student	21 (4.7)	20 (5.2)	1 (1.6)	0.381
Unemployed	123 (27.6)	109 (28.5)	14 (22.6)	
Employee	247 (55.5)	210 (54.8)	37 (59.7)	
Other	54 (12.1)	44 (11.5)	10 (16.1)	
<i>Household income per month</i>				
<5,000 SR	141 (31.7)	125 (32.6)	16 (25.8)	0.613
5000-10k SR	143 (32.1)	120 (31.3)	23 (37.1)	
>10k-20k SR	102 (22.9)	86 (22.5)	16 (25.8)	
>20k SR	59 (13.3)	52 (13.6)	7 (11.3)	
<i>Have any comorbidities?</i>				
Yes	75 (16.9)	64 (16.7)	11 (17.7)	0.840

Values are presented as numbers and percentages (%). SR: Saudi Riyals

weight within one year or less following the bariatric surgery, highlighting the effectiveness of the procedure in achieving weight loss.

Out of the total participants, 62 (13.9%) individuals underwent body contouring surgery following their primary bariatric procedure. Among those who underwent aesthetic surgeries (n=62), the majority opted for procedures in the trunk region (67.7%), while 35.5% chose surgeries in the breasts and 32.3% chose surgeries in the extremities. Notably, 38.7% of the participants reported being fairly satisfied, while an equal proportion expressed being very satisfied with the outcomes of their surgeries. The majority of these surgeries were paid for out of pocket. In contrast, among participants who did not undergo body-contouring surgeries (n=383), 57.4% indicated that they would

consider plastic surgeries in the future, as shown in [Table 2](#).

Overall, more than half of the participants (51.9%) expressed their intention to undergo a body-contouring surgery. Among those who did not consider such surgeries, the most common reasons cited were a perceived lack of need for these procedures (41.1%), concerns regarding high costs (17.2%), and fear of potential complications (10.4%), as depicted in [Figure 1](#). The reported barriers to undergoing body-contouring surgeries among the entire cohort included high costs (51.5%), previous experience with aesthetic surgery (25.0%), and a lack of desire to undergo.

The inferential analysis revealed several significant associations related to undergoing body-contouring surgery. Females were found to have a significantly higher



**Table 2** - Characteristics of body-contouring surgeries and participants' attitudes towards these surgeries.

Parameters	n (%)
<i>Type of the body-contouring surgery*</i>	
Trunk aesthetic surgery	42 (67.7)
Breast aesthetic surgery	22 (35.5)
Extremity aesthetic surgery	20 (32.3)
Liposuction	0 (0.0)
Facial aesthetic surgery	5 (8.1)
Lower body lift	10 (16.1)
Others	7 (11.3)
<i>Satisfaction with the result(s) of aesthetic surgery*</i>	
Poor	12 (19.4)
Fair	24 (38.7)
Very good	24 (38.7)
Missing	2 (3.2)
<i>How was body contouring surgery paid for?*</i>	
Out of pocket	59 (95.2)
Insurance or government	3 (4.8)
<i>Would consider plastic surgery in the future*</i>	
Yes	220 (57.4)
<i>Desire for body-contouring surgery</i>	
Yes	231 (51.9)
<i>Barriers to body-contouring surgery</i>	
Cost	229 (51.5)
Had no desire	72 (16.2)
Intent to lose more weight	33 (7.4)
Risks of additional surgery	64 (14.4)
Was not recommended by doctors	22 (4.7)
Underwent surgeries before	8 (25.0)
Male doctors	3 (9.4)
Marks after surgery	2 (6.3)
Health problems	1 (3.1)
Need more details	1 (3.1)
Pregnancy	1 (3.1)

Values are presented as numbers and percentages (%). \*Responses are based on 62 participants who underwent a body-contouring surgery.  
†Responses are based on 383 participants who did not undergo a body-contouring surgery.

likelihood of undergoing such procedures compared to males (82.3% vs. 17.7%,  $p=0.002$ , as shown in **Table 1**). Furthermore, individuals who achieved their best weight after 2 years (37.1% vs. 24.8%,  $p=0.003$ ) and more than 2 years (14.5% vs. 6.0%,  $p=0.003$ , as indicated in **Table 3**) following bariatric surgery were significantly more likely to undergo subsequent body-contouring surgeries. Additionally, the median change in BMI after bariatric surgery was significantly lower among those who underwent body-contouring procedures (median = -14.2, IQR: [-20.3, -11.6]) compared to those who did not (median = -17.0, IQR: [-21.1, -13.3],  $p=0.025$ , **Table 3**).

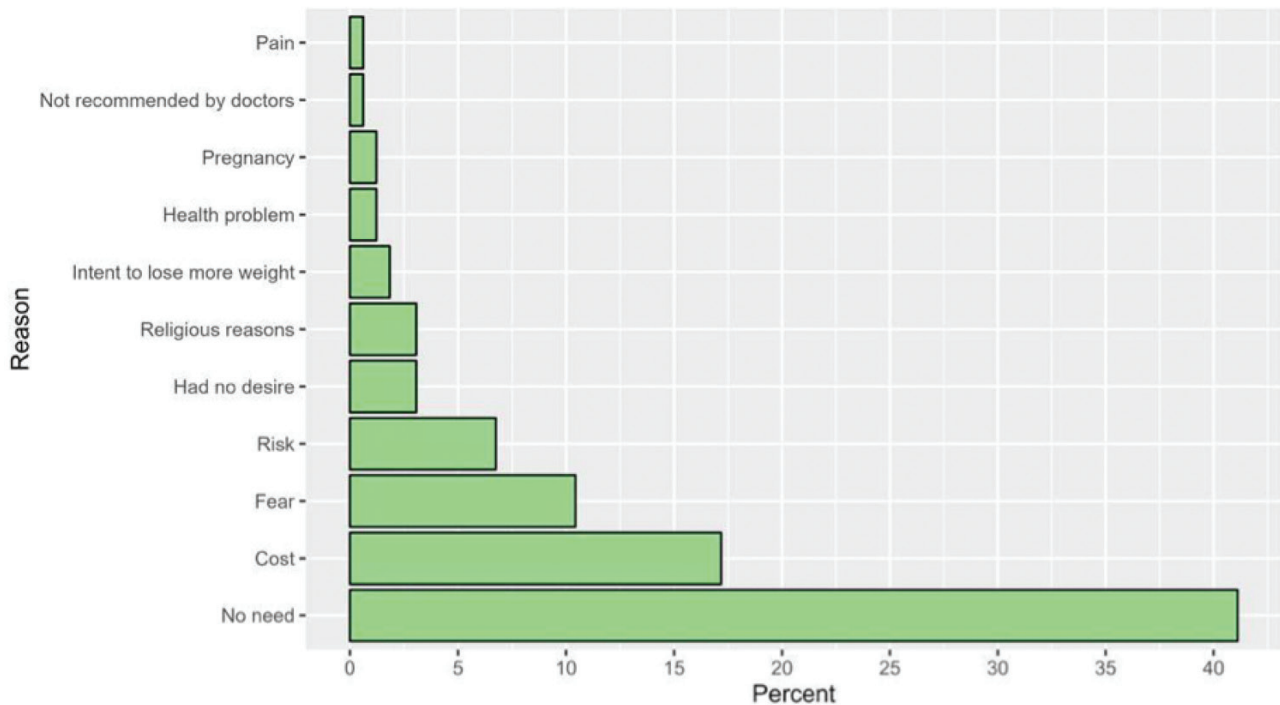
The multivariate binomial regression model revealed that several factors independently predicted the likelihood of undergoing a body-contouring surgery. Being female was found to be a significant predictor,

with females having 2.6 times higher odds of undergoing body-contouring surgery compared to males (OR=2.6, 95% CI: [1.3-5.6],  $p=0.008$ ). Additionally, achieving the ideal weight within 2 years (OR=2.2, 95% CI: [1.2-4.1],  $p=0.009$ ) and more than 2 years (OR=3.5, 95% CI: [1.4-8.3],  $p=0.005$ ) following the bariatric surgery were also significant predictors of undergoing body-contouring surgery, as displayed in **Table 4**.

**Discussion.** Bariatric surgery is recognized as an effective treatment for obesity and its associated comorbidities.<sup>2</sup> However, significant weight loss achieved through bariatric surgery can lead to the development of excess skin and fat, which can cause dissatisfaction with one's body appearance.<sup>4</sup> Consequently, an increasing number of individuals who have undergone bariatric surgery are seeking aesthetic or body-contouring surgeries.<sup>7</sup> This survey-based study aims to identify the factors and predictors associated with undergoing aesthetic surgery among patients who have previously undergone bariatric surgery. The findings of this study have the potential to provide valuable insights to healthcare providers and policymakers, helping them understand the demand for cosmetic services following bariatric surgery and ultimately improving patient outcomes and satisfaction.

According to the study, a significant proportion of participants (61%) had either undergone or expressed their intention to undergo body-contouring surgery, which aligns with findings from a previous study carried out by Aldaqa et al<sup>6</sup> in the same region. Consistent with previous research highlighting, gender as a significant predictor of surgical procedures, it is not surprising that females were more likely to undergo body-contouring surgeries.<sup>7,9</sup> In fact, data from the American Society for Aesthetic Plastic Surgery indicates that over 90% of aesthetic surgery consumers are female.<sup>5</sup> Achieving the ideal weight within 2 or more years following the bariatric procedure was identified as a major significant predictor, along with a lower median change in BMI.

Interestingly, this study found that age, relationship status, education, and employment status were not significant predictors of the decision to undergo body-contouring surgery. Additionally, despite a majority of procedures being paid for out-of-pocket, household income was not a significant predictor of body contouring, which contradicts the notion that higher income is associated with a higher likelihood of undergoing such procedures. These discrepancies may be attributed to differences in study design, sample size, or characteristics of the study population.



**Figure 1** - The proportions of reasons for not considering plastic surgeries among those who did not consider body contouring surgery (n=154).

**Table 3** - Characteristics of bariatric surgeries.

Parameters	Overall (N=445)	Underwent a body contouring surgery		P-values
		No (n=383)	Yes (n=62)	
<i>Time since bariatric surgery (year)</i>				
<1 year	4 (0.9)	4 (1.0)	0 (0.0)	0.735
1-2 years	49 (11.0)	44 (11.5)	5 (8.1)	
>2 years	392 (88.1)	335 (87.5)	57 (91.9)	
<i>Type of bariatric surgery</i>				
Gastric sleeve	426 (95.7)	368 (96.1)	58 (93.5)	0.208
Roux-en-y gastric bypass	10 (2.2)	9 (2.3)	1 (1.6)	
Other	9 (2.0)	6 (1.6)	3 (4.8)	
<i>Other types of bariatric surgery*</i>				
Mini bypass	2 (22.2)	1 (16.7)	1 (16.7)	0.762
Re-sleeve	1 (11.1)	1 (16.7)	0 (0.0)	
Re-sleeve then SASI	1 (11.1)	0 (0.0)	1 (33.3)	
SASI	5 (55.6)	4 (66.7)	1 (33.3)	
<i>Change in BMI after bariatric surgery</i>				
Yes	-16.6 (-21.1, -13.0)	-17.0 (-21.1, -13.3)	-14.2 (-20.3, -11.6)	0.025
<i>Time to achieve best weight after bariatric surgery</i>				
After one year or less	295 (66.3)	265 (69.2)	30 (48.4)	0.003
After 2 years	118 (26.5)	95 (24.8)	23 (37.1)	
More than 2 years	32 (7.2)	23 (6.0)	9 (14.5)	
<i>Presence of excess skin fold post bariatric surgery</i>				
Yes	317 (71.2)	268 (70.0)	49 (79.0)	0.144

Values are presented as numbers and percentages (%). \*Data was described based on 9 participants who had other types of bariatric surgeries. SASI: stomach aspiration surgical intervention, BMI: body mass index

**Table 4** - Results of the multivariate regression analysis for the predictors of undergoing body-contouring surgeries.

Parameters	OR	95% CI	P-values
<i>Gender</i>			
Male	Ref	Ref	
Female	2.62	1.34-5.56	0.008
<i>Change in BMI after bariatric surgery</i>			
Kg/m <sup>2</sup>	1.02	0.99-1.07	0.327
<i>Time to achieve best weight after bariatric surgery</i>			
After one year or less	Ref	Ref	
After 2 years	2.23	1.21-4.07	0.009
More than 2 years	3.50	1.40-8.27	0.005

OR: odd ratio, CI: confidence interval, BMI: body mass index

In comparison to studies carried out by Gusenoff et al<sup>8</sup> and Felberbauer et al,<sup>15</sup> our study reported a higher proportion of patients planning and undergoing body-contouring procedures (61%). Interestingly, the percentage of individuals who did not consider body-contouring surgery due to cost was only 17.2% in our study. This discrepancy may be attributed to the Saudi healthcare system, which provides free access to medically necessary aesthetic procedures, including post-bariatric surgery, at governmental hospitals. In contrast, Felberbauer et al<sup>15</sup> found that only 14.9% of post-bariatric patients underwent body-contouring procedures in Austria, potentially due to the stigma associated with plastic surgery and cultural differences. Furthermore, a study carried out by Alterie et al<sup>9</sup> in the United States between 2004 and 2010, involving 37,806 patients, reported that only 5.58% of their study population underwent post-bariatric aesthetic procedures. However, it is worth noting that this study was carried out before the surge in cosmetic procedures that began around 2014, which could contribute to the lower percentage. Additionally, differences in study sample sizes may also play a role in the observed variations. According to a recent British study, patients who underwent body-contouring surgery after bariatric surgery were more likely to be female, older, have higher education, and higher income compared to those who did not undergo such procedures.<sup>7</sup> These findings align with the patterns observed in our study, suggesting some consistency across different populations regarding the demographic characteristics associated with the decision to undergo body-contouring surgery after bariatric procedures.

The most commonly carried out body-contouring procedure among post-bariatric patients in our study was the excision of excess skin and tissue in the abdominal area, which is consistent with findings from

other studies.<sup>7</sup> These findings have practical implications for healthcare providers and practitioners involved in the care of post-bariatric patients who are considering body-contouring surgery. It highlights the importance of providing proper counseling and education tailored to the needs of this specific patient subgroup. Moreover, our study identified several significant predictors of undergoing body-contouring procedures after bariatric surgery. Being female, achieving the ideal weight within 2 or more years post-bariatric procedure, and having a lower median change in BMI were found to be significant predictors. These factors should be taken into account when counseling patients regarding the timing, type, and approach to body-contouring surgery.

**Study limitations.** The cross-sectional nature of the data limits our ability to establish causal relationships. Furthermore, the study was carried out at the Specialized Medical Center Hospital in Riyadh, Saudi Arabia, and had a relatively small sample size, which may limit the generalizability of the findings to a broader population. Additionally, we did not explore long-term outcomes and complications of body-contouring surgery in post-bariatric patients. Future studies should aim to address these limitations by carrying out larger-scale studies, utilizing longitudinal data, and investigating other relevant sociodemographic, psychological, and clinical factors that may influence patient decisions regarding body-contouring surgery. In addition, future research should focus on investigating the clinical implications of body contouring, particularly its impact on psychological well-being and the potential for reducing the need for medication.

In conclusion, the study revealed that a majority of post-bariatric patients were interested in or had already undergone body-contouring surgery. Female gender, achieving the ideal weight within a certain timeframe, and a lower change in BMI were identified

as significant predictors of undergoing body contouring procedures. These findings have important implications for counseling and educating post-bariatric patients regarding their options for body-contouring surgery. Future research can expand on these findings by exploring additional sociodemographic, psychological, and clinical factors that may influence the decision to undergo body-contouring surgery after bariatric procedures. This would contribute to a better understanding of patient preferences and guide clinical practice and future research endeavors in this area.

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