

RESEARCH ARTICLE

The attitudes of obesity patients towards sleeve gastrectomy

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Abstract

The aim of the study is to explore the attitudes of obesity patients towards bariatric surgery (specifically sleeve gastrectomy) and understand the impact of this surgery on their health and psychological improvement. To achieve this, the descriptive approach was used by administering a questionnaire to a sample of 50 patients suffering from obesity, aiming to collect data on their opinions and attitudes towards the surgery. The following results were reached:

- The results of the questionnaire showed that the majority of patients in the sample had positive attitudes towards bariatric surgery, as they expressed optimism about its ability to reduce weight and improve their general health.
- It was also found that the patients' attitudes towards the surgery were not influenced by personal factors such as age or weight.

Keywords: Attitudes, obesity, bariatric surgery, body image.

1. Problem Statement

Obesity is a complex health condition where the quantity of body fat increases excessively, and it is not only a problem of aesthetics but a medical risk that increases the likelihood of developing several diseases and health complications. These include: cardiovascular disease, diabetes, hypertension,

elevated cholesterol levels, liver diseases, and other dangerous medical conditions (فياض، 2024).

According to the World Health Organisation, obesity rates are constantly increasing. 2.5 billion adult individuals (aged more than 18) are overweight, and 890 million individuals are living with obesity (WHO.int/ar/news).

In Algeria, obesity rate is 30% among women, 14% among men, and 10% among children. This reflects the serious extent of obesity spread (Algerian Ministry of Health, formation.sante.gov.dz).

Thus, obesity is a serious public health issue that affects individuals' life quality since it increases their vulnerability to several dangerous physical diseases. However, obesity's effect is not merely on individuals' physical health; rather it affects psychological and social well-being.

Among the psychological effects of obesity, there are: depression, anxiety, and stress, resulting from body image disturbance, dissatisfaction with appearance, and low self-esteem. These factors lead the individual to isolation and avoidance of social gatherings.

Due to these consequences, the individuals affected by obesity seek to find a solution. Confronted with a limited set of options, they are obliged to choose between a long-term path involving physical exercise and

strict diets and a short-term path involving surgical intervention. This last is considered more effective than sport and diet, but it carries risks and complex complications.

Among the currently widespread surgical interventions are gastric bypass, gastric banding, intragastric balloon insertion, and sleeve gastrectomy. This latter, also known as longitudinal gastric resection, is surgically removing a large portion of the stomach to be tube-shaped and smaller, which helps individuals to eat less quantities of food and lose weight (النخيلان والقلاف، 2023، ص 2).

Accepting or refusing such surgical interventions is influenced by the individual's beliefs, experiences, and exposure to others' experiences, especially those shared in social media. The sum of information from these experiences forms a cognitive and value-based system that shapes a clear social and psychological attitude towards this surgery.

Obesity patients' attitudes towards sleeve gastrectomy are influenced by several factors, such as social and cultural factors. However, the most important factor influencing the patients' attitudes is false or incomplete scientific and medical knowledge, which captures only the positive side of sleeve gastrectomy, such as rapid weight, attaining an ideal body, and ease in doing daily activities. Most studies on the effects of sleeve gastrectomy focus on the well-being of those who underwent the surgery (النخيلان، 2023، ص 5) and overlook the potential risks and complications including infection, hernia, and bleeding.

Given the lack of studies -within the scope of this research paper- addressing the different psychological and social dimensions of sleeve gastrectomy, the present study seeks to shed light on obesity patients' attitudes towards sleeve gastrectomy. Thus, the research question is: what are the attitudes of obese patients towards sleeve gastrectomy?

2. Research Hypotheses

– Main hypothesis:

There are positive attitudes among obese patients towards sleeve gastrectomy.

– Sub-hypothesis 1:

There are statistically significant differences in attitudes towards sleeve gastrectomy based on age.

– Sub-hypothesis 2:

There are statistically significant differences in attitudes towards sleeve gastrectomy based on weight.

3. Research Objectives

This study seeks to achieve the following objectives:

- Identifying the attitudes of obese patients towards sleeve gastrectomy.
- Analysing the differences in attitudes in relation to demographic variables such as age and weight.

4. Significance of the Study

- This study sheds light on foundational concepts that influence mental health. By focusing on a particular portion of society (obese patients), the results of this study contribute to preventive and therapeutic fields through understanding the individual's attitude towards surgical intervention as a solution to improve self-perception and body image of obese patients.
- It provides individuals suffering from severe obesity with information about treatment options and the suitability to their health complications.
- It enables specialists in nutrition to provide effective consultations for individuals trying to lose weight, and also to develop awareness campaigns and effective obesity treatments.
- It enables students and researchers to explore medical, psychological, and social aspects of obesity and sleeve gastrectomy surgery.

5. Previous Research and Studies

5.1. Study by Bara Al-Ghlyani et al. (2024), titled: Awareness and Attitudes Towards Bariatric Surgery

Among the Population in the Kingdom of Saudi Arabia

This study aimed to assess the level of awareness, knowledge, and attitudes towards bariatric surgery among population in Saudi Arabia. It focused on understanding common perceptions and barriers that may influence accepting such type of treatment, and identifying the factors related to the level of knowledge and willingness to consider surgery as a therapeutic option. A cross-sectional study was conducted using an electronic questionnaire distributed among adult residents of Riyadh City. The sampling methods used were purposive non-probability sampling and snowball technique. A total of 313 adult participants participated in the study with a mean age and BMI (body mass index) of 26.98 kg/m². The study found the following:

- 41.9 % of the participants considered obesity a disease.
- 48.9 % recognised the effectiveness of bariatric surgery to treat severe obesity.
- 71.2 % of participants expressed their unwillingness to undergo surgery.

5.2. Study by Amina Jasim Muhammed Fathi (2022), on: The Effect of Sleeve Gastrectomy on a Number of Physiological and Biochemical Variables in Obese Patients

The researcher in this study aimed to assess the safety, effectiveness, and complications of sleeve gastrectomy, as well as its effect on a number of biochemical variables and lipid profiles. She also assessed the surgery's effect on certain hormones activity such as ghrelin, adiponectin, and resistin among patients with severe obesity. The study included patients with a BMI of 40kg/m² or higher, aged between 20 and 50 years. The results revealed remarkable improvement in these indicators after surgery, which proves the effectiveness of sleeve gastrectomy as a therapeutic option for severe obesity.

5.3. Study by Mostafa Abdallah Talba Mohammed and Ashraf Ahmed

Mohammed El-Sayed (2024), on: Some Variables Contributing to the Tendency Towards Cosmetic Surgery Among Student Teachers at Al-Azhar University

The researchers sought to examine the extent and type of relationship between self-esteem, social appearance anxiety, media influence, social criticism of body image and the tendency to undergo cosmetic surgery. It also aimed to identify the extent to which these variables contribute to the likelihood of undergoing cosmetic surgery, and explore the differences in undergoing cosmetic surgery based on cultural (rural/ urban) and economic (low/ high) backgrounds among female student teachers in Al-Azhar University.

The sample included 100 participants of university female students from the third and fourth years of the Faculty of Education for Girls in Asyut and Cairo campuses of Al-Azhar University, aged between 21 and 22 years. Data collection tools included researcher-developed scales to measure self-esteem, social criticism of body image, media influence, social appearance anxiety, and the tendency towards cosmetic surgery.

The results indicated:

- A statistically significant negative correlation between self-esteem and the tendency to undergo cosmetic surgery.
- A statistically significant positive correlation between social appearance anxiety, media influence, and social criticism of body image and the tendency towards cosmetic surgery among the student teachers. It was also possible to predict the tendency towards cosmetic surgery based on these variables.

Generally, studies have shown that different surgical or nonsurgical interventions can influence the body image. Nevertheless, it is preferable to follow a holistic approach combining physical activity, psychological consultations, and healthy nutrition to achieve a

sustainable improvement in body image and overall well-being.

6. Terminology Related to the Study

6.1. Attitudes

Kresh and Crulshfield define attitudes as an enduring organisation of motivational, perceptual, emotional, and cognitive processes linked to the aspects of individual's life (محمد ابراهيم عبد، 2005، ص76).

6.2. Obesity

According to the World Health Organisation (WHO), overweight is a condition in which fat deposits increase excessively in the body. It is a complex chronic disease characterised by excessive fat accumulation in the body, which can harm the individual's health.

6.3. Sleeve Gastrectomy

It is a widely known surgical procedure that aims to remove unwanted subcutaneous fat from particular parts of the body. It involves the

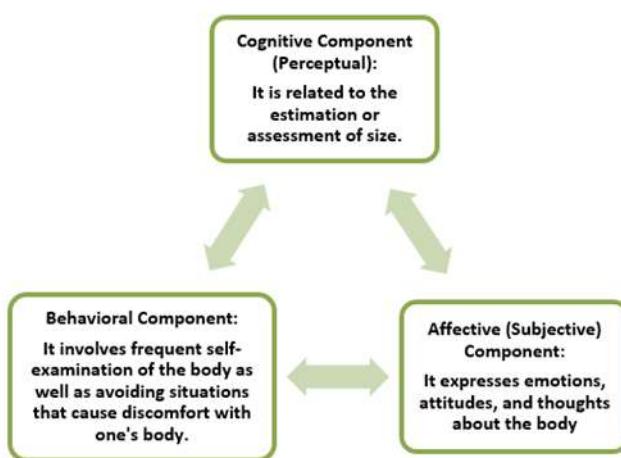
insertion of metallic instruments through small incisions into subcutaneous fat tissue to suction large amounts of fat using negative pressure, which facilitates weight loss in an appropriate way (Liposuction: principles and techniques, 2022, p. 3).

6.4. Body Image

It is the mental representation of the individual on their physical composition and functional competence. It is defined through a set of factors including the shape and proportionality of body parts, overall physical structure, functional performance, and the social dimension of body image (الشبراوي، 2001، ص13).

And according to (الدخيل، 2007), it is a combination of three components including cognitive (perceptual) component, an emotional (affective) component, and a behavioural component (دراغمة، 2018، ص16).

Figure 1. Main components comprising body image



The interaction of these components is crucial in constructing one's mental representation of body image. According to Allen and Unwing (2003), body image plays an important role one's psychological health, and according to (الدسوقي، 2006), body image disturbance is a form of psychological disorder,

essentially characterised by dissatisfaction with physical appearance.

As Allen and Unwing (2003) noted, negative body image influences physical and social competence of the individual, and it is linked to pathological variables such as anxiety

symptoms, social phobia, low self-esteem, and feelings of alienation (18، ص 2018، دراجمة،).

❖ Key Statistical Facts on Obesity According to WHO

- In 2022, 1 in every 8 people was living with obesity in the world.
- Adults' rates of obesity have increased to more than the double worldwide since 1990, and rates among adolescents have quadrupled. In 2022, there were 2.5 billion overweight adults (aged 18 and above), among whom 890 million were living with obesity.
- In 2022, there was 43% of adults aged 18 and above suffering from obesity, and 16% of them were living with it.
- In 2022, 37 million children aged under 5 years were overweight.
- In 2022, more than 390 million children and adolescents aged between 5 and 19 years were overweight, among whom 160 million children and adolescents were living with obesity (WHO, March1, 2024).

❖ Effects and Consequences of Obesity

• Obesity and physical health:

- Obesity can significantly increase the risk of type 2 diabetes, cardiovascular diseases, and negatively affect bone health and regeneration. It also increases the risk of certain types of cancer and negatively affects quality of life, such as sleep and mobility (WHO, 2024).
- Obesity is one of the main risk factors for heart diseases leading to death such as atherosclerosis, hypertension, and heart attacks. This is because of the increase in fat tissue, which doubles the effort done by the heart to pump blood to all of the body parts. It is also due to elevated triglycerides and cholesterol levels, which lead to the narrowing and eventual blockage of arteries that cause sudden death.

- Obesity is also linked to gallbladder disease due to the increase in fat tissue that elevates cholesterol production and bile cholesterol secretion and concentration, which lead to the formation of cholesterol gallstones.
- Studies have also shown a correlation between obesity and gout.
- **Obesity and psychological implications**
- Obesity causes psychological problems such as dissatisfaction with body form, low self-esteem, and difficulties in professional and social life. Thus, rates of depression and anxiety increase as a result of the stigma associated with obesity.
- Obesity causes social shame, where the individual suffers from others' judgements and negative comments on their physical appearance. Consequently, they try to avoid gatherings and having friends due to deep embarrassment.
- Due to the feeling of losing control over their weight, obesity patients feel helpless and powerless to control food craving and urgent desire to eat large quantities of food, which often reaches the level of uncontrollable compulsive behaviour.
(<https://www.theearabhospital.com>)
- Psychological disorders significantly influence one's appetite. This was confirmed by a number of studies including a study conducted at the University of Minnesota, which revealed that 25% of participants reported increased food intake when experiencing psychological stress. This highlights the strong link between psychological state and hunger.
- Several studies also found a strong link between severe obesity and depression, yet it is difficult to determine causality. Individuals with obesity suffer from depression due to health complications

and negative self-image resulting from negative societal attitude, which affects their self-confidence leading to depression; whereas depression patients suffer from obesity due to physiological changes in their hormones and immune system associated with depression (دبراسو، 2020، ص791).

- Obesity causes a sense of anxiety and tension, which is, according to (سلیمان، 2005), a result of the mismatch between nutritional intake and body needs, in addition to impaired mental and psychological comfort. This leads to a distorted body image that causes body dissatisfaction (دراغمة، 2018، ص33).

❖ Diagnosis and Treatment

- Diagnosis

Obesity is an abnormal (excessive) accumulation of fat in the body. Diagnosing obesity depends on body appearance in relation to height and weight, which is known as body mass index (BMI).

- Treatment

Obesity is a chronic disease that can be treated through individualised or therapeutic intervention. This latter involves two main paths: medical-educational treatment and surgical intervention.

– Medical-educational treatment for obesity:

It involves pharmacological treatment and therapeutic education. One of the key therapeutic interventions are the programs administered by a multidisciplinary team including a physician, a nutritionist, a psychologist, and a physical therapist.

– Surgical intervention for obesity:

Surgical intervention for obesity, also known as bariatric surgery, is a surgical

procedure on the digestive system. These procedures differ from one patient to the other, and they occur through several ways. Among these we mention:

- Sleeve gastrectomy.
- Gastric bypass surgery.
- Mini-gastric bypass.
- Duodenal switch (الفياض، 2004، ص56).

Methodology and Procedures

7. Methods Used in the Study

This study adopted a descriptive-analytical approach, which involves accurate examination of the phenomenon of the attitudes of patients with obesity towards liposuction surgery, and gathering realistic and detailed information about this existing social phenomenon. It also aims to describe, analyse, interpret, and assess the phenomenon to achieve meaningful generalisations and conclusions, develop future plans, and make appropriate decisions regarding similar issues based on quantitative and qualitative data.

8. Study Population and Sample

This study used accidental sampling, also known as convenience sampling, which is a non-probability sampling technique where individuals are selected based on their easy reachability, rather than a strict random selection. This method is used when it is difficult to gather data through more complicated methods or when resources are limited.

The body mass index (BMI) of the respondents was calculated to identify individuals suffering from obesity. This was based on the criterion that a BMI exceeding 30 indicates obesity. The sample included 45 individuals, men and women, categorised according to the characteristics presented in Table 1 below:

Table 1. Characteristics of study sample

Sample Characteristics		Frequency	Relative frequency
Gender	Male	10	22,2
	Female	35	77,8
	Total	45	100,0
Age	Less than 25 years	7	15,6
	From 26 to 35	14	31,1
	From 36 to 45	12	26,7
	From 46 to 55	12	26,7
	Total	45	100,0
Weight	From 90 – 95 kg	16	35,6
	From 96 – 100 kg	12	26,7
	More than 100 kg	17	37,8
	Total	45	100,0

- **Commenting on the table of sample characteristics**
 - The table shows that the majority of sample individuals are females 78%, while males are only 22% of the sample. This may demonstrate the focus of the research or the nature of the society from which the sample was selected where females' participation was larger.
 - It is observed that the most represented age group is 26 to 35 years old with 31% followed by 36 to 45 and 46 to 55 age groups, both with 26.7%, and finally the group under 25 years with 15.6%. This indicates that the majority of sample individuals are young and middle-aged.
 - The largest proportion of participants are in the "more than 100 kg" category with 37.8%, followed by the 90 to 95 kg group with 35.6% and then 96 to 100 kg with 26.7%. This indicates that a large portion of the sample are overweight or obese, which is a main focus of the study.

9. Study Instrument

This study relied on the questionnaire as a tool to gather data from participants. The questionnaire was carefully designed to align with the study objectives and hypotheses. It included a set of closed-ended questions that aim to measure obesity patients' attitudes towards sleeve gastrectomy, in addition to demographic questions on gender, age, and weight.

The questionnaire items were constructed using a three-point Likert scale (Agree, Neutral, Disagree) to facilitate the accurate analysis of attitudes. The questionnaire was reviewed by experts in the fields of health and psychology to ensure its face validity, and some items were edited based on their remarks. To ensure instrument reliability, the questionnaire was piloted on a sample of 10 individuals with severe obesity, and the reliability coefficient was calculated using Cronbach's Alpha, as shown in table 2.

- ❖ **Cronbach's Alpha reliability coefficient calculation for the questionnaire items:**

Table 2. Cronbach's Alpha reliability coefficient for the questionnaire items.

Sample	Items	Reliability coefficient
10	31	0.904

From Table 2 we observe that the reliability coefficient for the study tool using Cronbach's Alpha is 0.904, which indicates that the questionnaire items have high and strong reliability, and thus are suitable for measuring what they were designed to measure.

Presentation of Hypotheses Results

We add 0.66 each time to determine the sample's attitudes categories as follows:

Attitude	Agree	Neutral	Disagree
Range	2.34–3	1.67–2.33	1.00–1.66

Table 3. The arithmetic mean results for the main hypothesis.

Variable	Sample	Mean	Standard deviation	Degree of freedom (df)	T value	P-value
Attitudes towardssurgery	45	1,9097	0,31476	44	0,0001	0,05

From Table 3, we observe that the mean value is 1.9097, which falls within the neutral range. Thus, a one-sample T-test was used to confirm the attitudes of obese patients towards sleeve gastrectomy. The calculated T-value is 0.0001, which is less than the significance level (0.05). Therefore, we accept the hypothesis stating: "There are positive attitudes among obese

Main hypothesis result: "There are positive attitudes among obese patients towards sleeve gastrectomy surgery."

❖ **Determining the direction of the sample=**

$$(\text{highest score} - \text{lowest score}) \div \text{highest score}$$

$$(3 - 1) \div 3 = 0.66$$

patients towards sleeve gastrectomy surgery"; thus, the main hypothesis is confirmed.

First sub-hypothesis result: "There are statistically significant differences in the attitudes of obese patients towards sleeve gastrectomy based on age variable."

Table 4. Results of ANOVA test for the first sub-hypothesis.

Variable	Sample group	Mean	Df	F value	Signification	P- value
Age	Within groups	0,374	2	1,972	0.152	0.05
	Between groups	3,985	42			

From Table 4, we see that the F value is 1.972 with a significance value of 0.1520, which is greater than 0.05. Therefore, we reject the hypothesis stating that there are statistically significant differences in the attitudes of obese patients towards sleeve gastrectomy based on

age variable. Thus, the first sub-hypothesis is not confirmed.

Second sub-hypothesis result: "There are statistically significant differences in the attitudes of obese patients towards sleeve gastrectomy based on weight variable."

Table 5. Results of ANOVA test for the second sub-hypothesis.

Variable	Sample group	Mean	Df	F value	Signification	P- value
Weight	Within groups	0,406	3	1,404	0,255	0.05
	Between groups	3,953	41			

From Table 5, we see that F value is 1.404 with a significance value of 0.255, which is greater than 0.05. Therefore, we reject the hypothesis that there are statistically significant differences in the attitudes of obese patients towards sleeve gastrectomy based on weight variable. Thus, the second sub-hypothesis is not confirmed.

Discussion and Interpretation of Study Results

Attitudes are considered a set of beliefs towards a particular topic or position. They are relatively stable and make individuals respond in a particular way.

gastrectomy surgery, and this is due to the increasing amount of information on surgical intervention procedures for obesity disease through various media outlets (audio, printed, or visual), as well as the role of social media in sharing and exchanging information and experiences worldwide. Moreover, due to modern life development, the fast-paced lifestyle, and dependence on fast food and high-calorie meals, obesity is recently widespread in all over the world.

Furthermore, wrong eating habits formed from childhood contribute to chronic obesity, in addition to other complications like diabetes, thyroid disorders, and menopause-related

- ❖ According to the achieved results, obesity patients have positive attitudes towards sleeve

hormonal changes. All of these factors made specialists in the medical field look for solutions and treatments including sleeve gastrectomy surgery, which has become appealing to many obese individuals looking for quick solutions away from strict diets and tiring exercises. The wide accessibility of information about such procedures additionally influences their ideas and attitudes. This aligns with what Amina Jassem Mohammed Fathi's study, which found that most of the sample individuals confirmed the effectiveness of sleeve gastrectomy as a therapeutic option for severe obesity.

These positive attitudes can be attributed to a dynamic process involving three components:

- Cognitive component: it is represented in the information about sleeve gastrectomy, which is widely available through media, social media platforms, and promotional content from centres specialised in such surgeries. Recently, laparoscopic sleeve surgery has attracted many patients.
- Emotional component: it is reflected in one's feelings, motivations, and needs for undergoing such surgeries. Obesity is one of the diseases that affect life quality through social disability, such as problems in classroom adjustment (for students), reduced employment opportunities (especially in physically demanding professions), and limited chances of emotional relationships and marriage due to societal perceptions. Moreover, body image and self-esteem issues of the patient hinder their social life.
- Behavioural component: this is manifested in the urgent desire to undergo such surgeries, in addition to awareness about the procedures, the centres offering them, complications, costs, and most importantly what such surgeries can

change in patients' lives within a short period of time.

- ❖ The field study results indicated the absence of statistical correlation between obesity patients' attitudes towards sleeve gastrectomy and age variable. It was revealed that concerns about obesity and the desire to achieve an ideal weight are shared among different age groups. This finding matches what Sarwe et al. (2005) noted that the decision of undergoing bariatric surgery is strongly influenced by psychological factors, such as dissatisfaction with body image and unrealistic expectations, compared to the influence of age or obesity severity. A study published in an Arab Journal of Family and Community Medicine in Saudi Arabia found similar results, which indicated that the motivation to undergo sleeve surgery is strongly linked to media influence and friends or family experiences more than it is to age.
- ❖ The results of the present study also revealed the absence of statistical correlation between patients' attitudes towards sleeve gastrectomy and weight variable. It was indicated that the influence of weight on the decision do not vary as long as the BMI falls within the high-risk category. This is consistent with findings from the study entitled *Patients' Attitudes and Beliefs Toward Bariatric Surgery in Saudi Arabia*, which did not find any clear correlation between the patients' age or weight and their acceptance or attitude towards sleeve gastrectomy. It also highlighted that psychological and social factors, such as friends pressure and the desire to enhance physical appearance, were significantly influencing in forming these attitudes.

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