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EVALUATION OF KNOWLEDGE REGARDING SURGICAL TREATMENT OF OBESITY AMONG FINAL YEAR MEDICAL STUDENTS AND RECENT GRADUATE PHYSICIANS FROM QASSIM UNIVERSITY

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Abstract

Objective: *This study aims to evaluate the knowledge regarding the possibility of surgical treatment for obesity among Final Year Medical Students and Recent Graduate Physicians from Qassim University*

Methods:*A cross sectional study carried out in Qassim medical college. A pre- tested questionnaire which was given to the participants to evaluate their knowledge & attitude about the bariatric surgery. All data are analysed by software statistical Package of Social Science. The enrolled participants should be Final Year Medical Students and Recent Graduate Physicians from Qassim University.*

Results:*The study found that participant are aware of the theoretical role that stands behind bariatric surgery in weight reduction and bariatric surgery details. A poor knowledge is found in relation to the obesity surgery indication and role of surgery in reduction risk of cancer. Additionally, we found that most of the participants wanted to have obesity surgical management approaches in their surgical curriculum.*

Key World: *Bariatric, Surgery , student , Knowledge , medical.*

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INTRODUCTION:

Obesity has presented itself as one of the most burdens preventable non-communicable health issue that is causing human diseases and economic burdens. It is defined as a body mass index (BMI) ≥ 30 kg/m2 (1,2). Globally more people are obese than underweight (3) Most importantly; it is predicted that by 2030, a substantial portion of the adult population of the world would be either obese or overweight (4).

The fact that adoption of a Western lifestyle, characterized by physical inactivity and high caloric intake, is leading to an alarming epidemiological transition marked by the shift in the leading causes of death from communicable to noncommunicable diseases. Over the past few decades, westernized lifestyle has become increasingly apparent in Saudi Arabia, and has the high obesity and overweight prevalence rates. (5,6). Indeed, the prevalence of diabetes reaches a high level affecting 35.5% of the population and are expected to be increasing particularly among females (7).

Regionally and globally, the perception of obesity has changed over time; it is now perceived as a significant health problem and a risk factor for many diseases (8). As these conditions are associated with high rates of non-communicable diseases (NCDs) related to overweight (3). Most importantly, Excess body weight is causing more years of disability, morbidity, and mortality from cardiovascular diseases, diabetes, cancers, and musculoskeletal disorders, which leads to approximately three million annual deaths worldwide (1,9). Consequently, the increased cost of obesity and its comorbidity will put a strain on the resources of governments, health care systems and individuals (10).

It is a common certainty that obesity is treated by lifestyle adjustment, diet therapy, suitable physical activity, or pharmacological treatment. However, it is valued noticing the growing significance of the surgical intervention of obesity, which not only permits for weight reduction but also decreases the mortality from obesity-associated morbidities compared with those treated without surgery (11,12).

The level of awareness about the possibility of surgical treatment for obesity among general practitioners, who are the medical professionals must be aware of the risks of different diseases in patients under their care, remains far from satisfactory (13,14). Consequently, this study is designed as a cross-sectional survey of last year medical students and interns to assess their knowledge about the possibility of surgical interventions for obesity. In a recent study conducted in Jeddah city evaluating the knowledge of bariatric surgery among interns and final year medical students at King Abdulaziz University appears to be there is a knowledge gap (15). To the best of our knowledge, Clinical year medical students at Qassim University have never evaluated on this matter neither the concept of the bariatric surgeries.

METHODOLOGY:

This study is carried out in Qassim Medical College, which is considered as one of the oldest and largest medical colleges in Kingdom of Saudi Arabia. There are around 750 medical students. It is a great choice for the induction of a cross-sectional descriptive study that will be directed to last year medical students and recent graduate physician from Qassim University.

Eligibility criteria:

The participant has to be a last year medical students or recent graduate physician from QASSIM UNIVERSITY. We excluded all 4th, 3rd, 2nd and 1st year medical students, and medical students from other universities.

Data Collection Tools:

We will conduct this study using a self-administered pre-tested English questionnaire which was obtained from a study conducted in the Kingdom of Saudi Arabia (KSA)(15), as well as from a study conducted in Poland(16). The questionnaire has 15 questions to measure the participant's knowledge & attitude about the bariatric surgery and its indications including:

- Questions about demographic data like : age , education
- Questions will be assessed using Likert score (strongly agree - agree – disagree - strongly disagree)

Data Analysis:

All values analyzed by using software statistical Package of Social Science (SPSS 20 for windows evaluation version). In addition, $\chi 2$ tests will be used for categorical variables and T-test for continuous variables; P <. 05 will be considered statistically significant.

RESULTS:

Among the participants (106), the average number of correct answers by the respondents was 4.07 out of 8, with standard deviation of ±1.18. The obtained score

results did not show normal distribution (KS=0.21, p <0.0001).

Table 1. Number and Percentages of Correct Answers by Respondents

Number of correct answers by respondents	Number of respondents (n)	Percentage (%)
0	2	1.9%
1	0	0.0%
2	6	5.7%
3	20	18.9%
4	41	38.7%
5	27	25.5%
6	9	8.5%
7	1	0.9%
8	0	0.0%

The final results are shown in Table 2. A total of 106 medical students responded to our questionnaire with female predominance 57 (53%), and 49 male (46.2%). 55 (51.9%) of the total participants are medical students, and 51 (48.1%) were medical interns Table 3.

Table 2 Responses to Individual Questions. The Result which is the correct answer is underlined

N=106	N	%
Gender		
Female	57	53.8
Male	49	46.2
Position		
5th Year Student	55	51.9
Intern	51	48.1

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Table 3. Responses Gender and Position

N=106	Answer A n(%)	Answer B n(%)	Answer C n(%)	Answer D n(%)
Question 1	5 (4.7%)	11 (10.4%)	0	90 (84.9%)
Question 2	78 (73.6%)	3 (2.8%)	4 (3.8%)	21 (19.8%)
Question 3	17 (16%)	65 (61.3%)	12 (11.3%)	12 (11.3%)
Question 4	39 (36.8%)	12 (11.3%)	42 (39.6%)	13 (12.3%)
Question 5	4 (3.8%)	7 (6.6%)	31 (29.2%)	64 (60.4%)
Question 6	17 (16%)	63 (59.4%)	3 (2.8%)	23 (21.7%)
Question 7	7 (6.6%)	76 (71.7%)	15 (14.2%)	8 (7.5%)
Question 8	28 (26.4%)	64 (60.4%)	12 (11.3%)	2 (1.9%)

Table 4. Students Response Regarding providing them an Obesity and it is Surgical Management Curriculum

	N	%
Do you think it is important for every graduates to know basic information in surgical treatment of obesity since it becomes recognized by general population?		
No	14	13.2
Yes	92	86.8
Would it be useful to include bariatric surgery in surgical curriculum during medical years?		
No	22	20.8
Yes	84	79.2

Most of medical students and interns who responded to our study 90 (84.9%) chose bariatric surgery to be the medical discipline concerned with the treatment of obesity, Lipology 11 (10.4%), Balneology 5 (4.7%). Our study found that most of participants 78 (73%) are aware of the mechanism in which bariatric surgery help in weight reduction. 12 (11.3%) of participants were able to identify the indications for the use of bariatric surgery. Questions 4 was asked to assess if the participants are aware of who should go for bariatric surgery, 42 (39.6%) were able to identify which patient needs a surgical intervention for loss of weight. Only 7 (6.6%) of the participants were aware of the role of surgical treatment for weight reduction in decreasing the risk of cancer occurrence. Most of participants 63 (59.4%) were having full knowledge about the role of surgical procedure in a reduction of health care costs for obese patients. Most of the participants 76 (71.7%) were aware that Laparoscopic mini-invasive technique also known as “Keyhole Surgery" is the safest technique to perform weight loss surgery. Also, most of the participants 64 (60.4%) were aware of the expected time for obese patients to achieve their maximum weight loss after bariatric surgery. Additionally, most of the participants 92 (86%) in the study agreed about the importance of having good clinical knowledge regarding obesity and its surgical management. Also, 84 (79.2%) of the participants want to include bariatric surgery in their surgical curriculum.

Figure 1

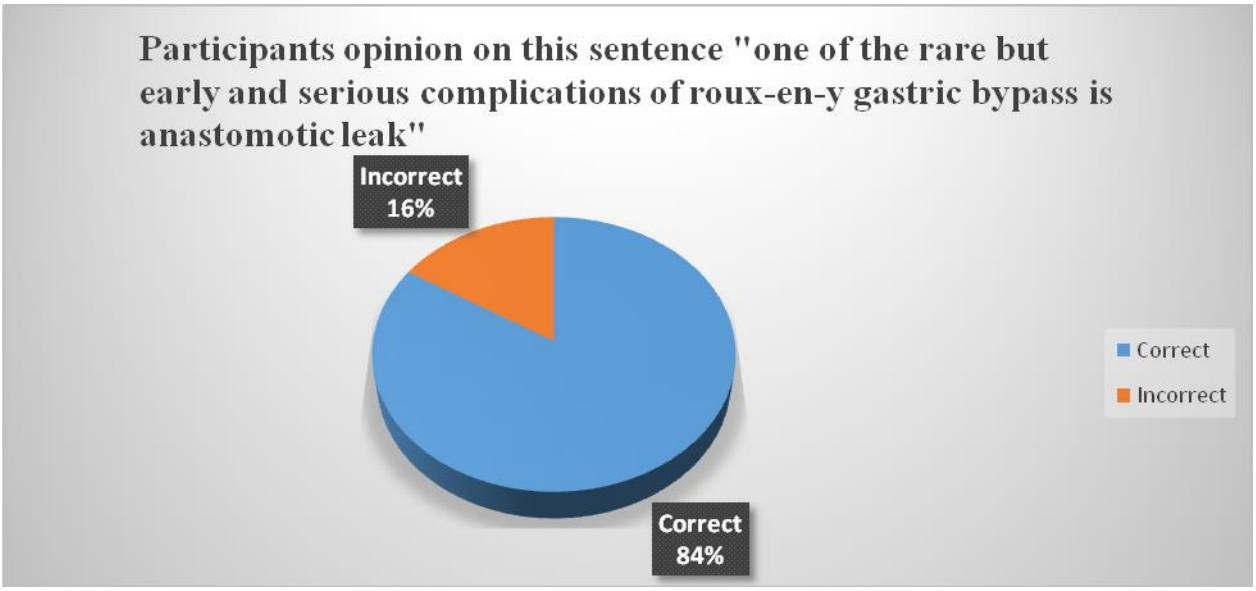


Figure 2

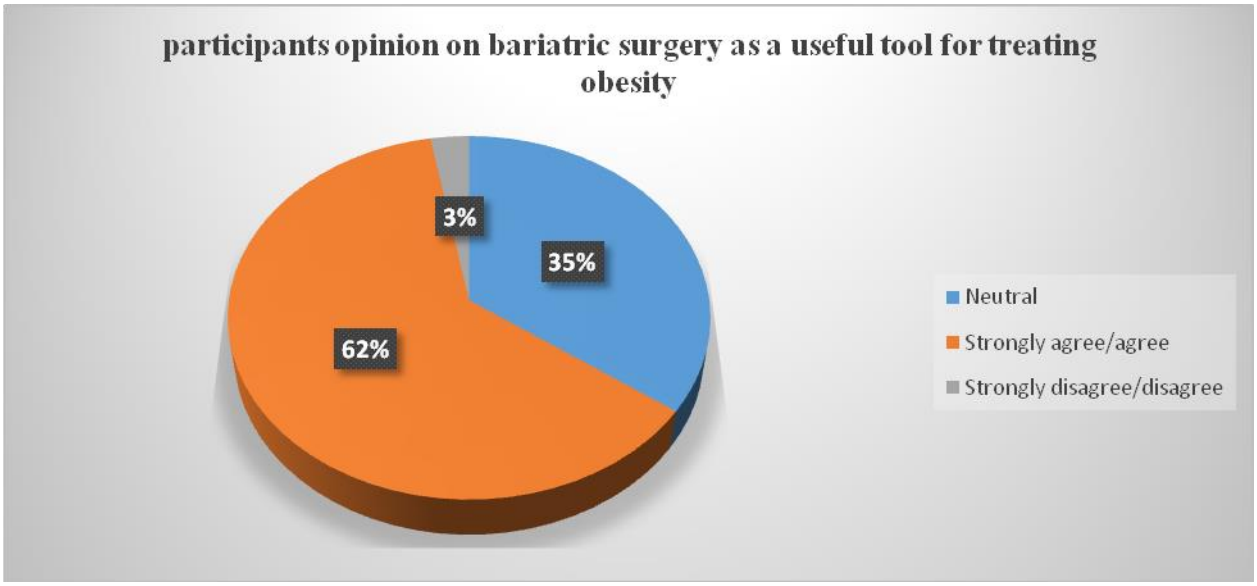


Figure 3

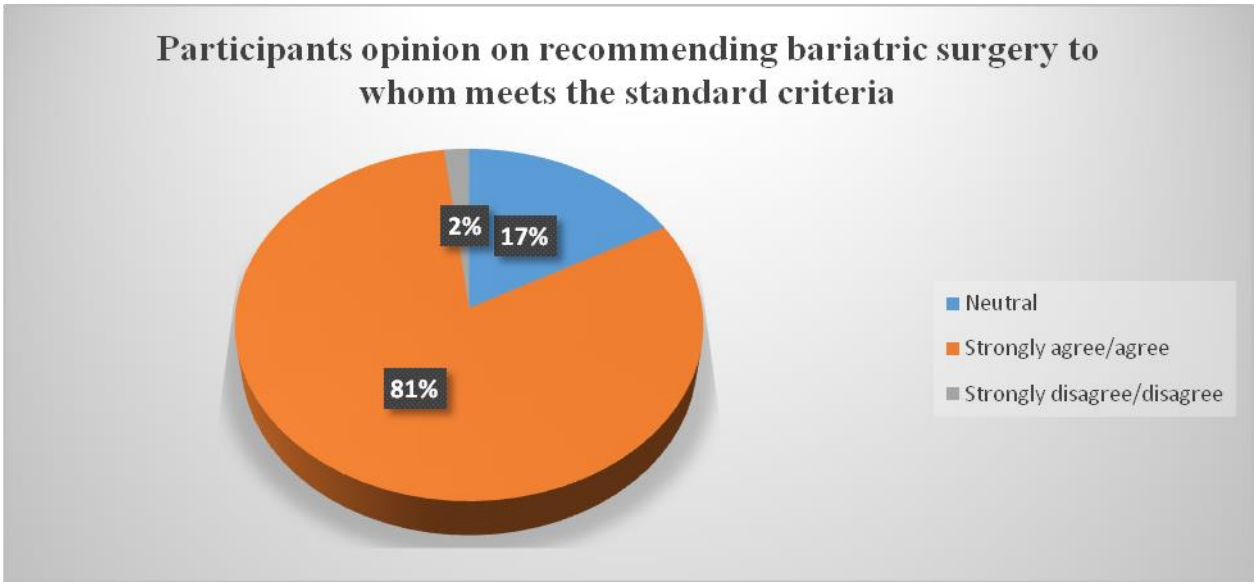
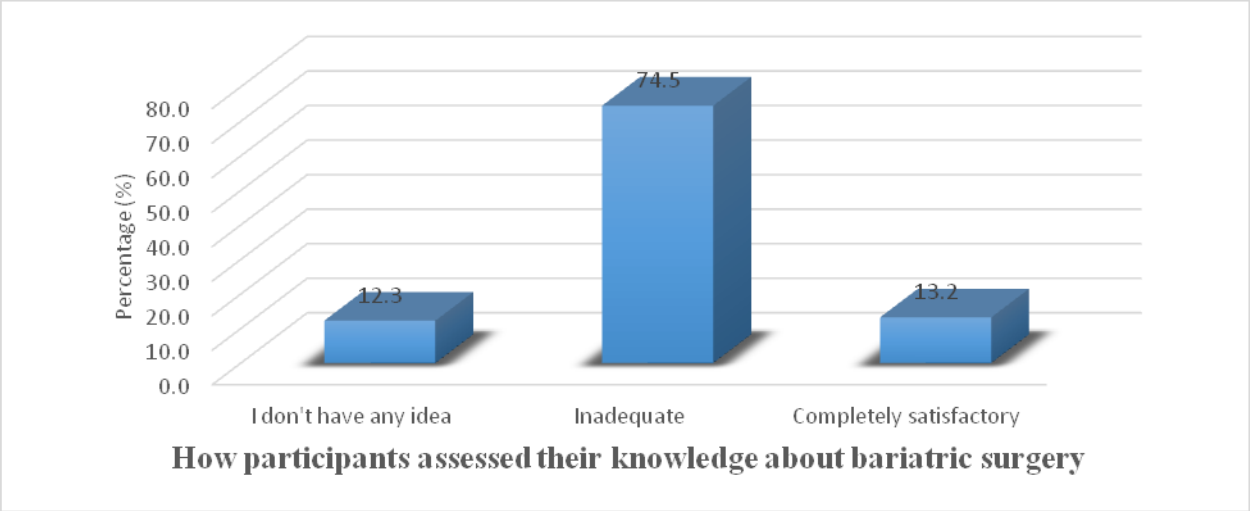


Figure 4



DISCUSSION:

Obesity prevalence has been increasing over the past 3 decades in many countries around the world. The WHO considered obesity as a global problem. However, the prevalence of obesity varies between nations, ranging from below 5% in the countries located in East and South of Asia, and reach to over 75% in certain African countries such as Nauru and Samoa (20). In Saudi Arabia, Khan F. et al. mentioned that the prevalence of obesity has been increasing significantly over years, in 1992 the overall (Men- Female) prevalence of obesity was 16.4%, in 2017 the percentage increased up to 52.9% with a higher obesity rates in the Saudi females 67.5% in compare to males 38.2% (21). In addition, The rate of obesity among Saudi children is about 18% and is dangerously showing an increasing trend (22).

According to the World Health Organization (WHO), obesity is defined by Body Mass Index (BMI) equal to or more than 30Kg/m2. It is calculated by dividing the body weight in kilograms (Kg) by the square of the height in metres (m), as a surrogate measure of total body fat (23).

Various literatures mentioned that significant increase in BMI index is associated with escalation in mortality. Framingham heart study, assessed male and female below 40 years who were non- smoker obese, it was found that both gender lived less than non- obese people (5.8 and 7.1 years) respectively (24). In addition, Fontaine et al. found a marked increase in mortality rate of obese adults in compare to non- obese adults (25). The increase in mortality is linked to the role of obesity with development of chronic diseases such as type 2 diabetes, cardiovascular disease (CVD) and cardiovascular risk factors, respiratory diseases such as asthma, musculoskeletal disorders such as osteoarthritis and low back pain, several cancers, and depression (26, 27).

Generally speaking, it is clear for medical students, physicians and most of educated population that obesity is managed by lifestyle modification, diet therapy, appropriate physical activity, or pharmacological treatment. It should be noted that there are different surgical approaches that can help in obesity management. However, the level of knowledge and awareness of medical students regarding the role of surgery in weight reduction and improving patient's life remain unclear and far from satisfactory. The aim of this study is to assess Qassim last year medical students and interns regarding their knowledge about the possibility of surgical interventions for obesity.

As mentioned earlier, Nawawi A et al. conducted a study in Jeddah city to assess final year medical students and interns at King Abdulaziz University regarding their knowledge about bariatric surgery and it is role in weight reduction and found that the knowledge level was far from satisfaction (15). Another study done among Polish medical students about their knowledge in the surgical treatment of obesity revealed a lack in basic concepts related to the treatment of such disease, and that the medical community should be given more attention and education about this problem. Additionally, Giaro M

et al. evaluated the knowledge of 778 general practitioners (GP) about bariatric surgery and obesity; he found that only 8.1 of the participants have a clinical information about the indications of bariatric surgery for treatment of obesity (17).

It was difficult to obtain studies related to our concern to compare, as (To the best of our knowledge) the number of international publication related is low. Qassim university medical curriculum provides a good knowledge for the medical students about morbid obesity and its complications and management options. We found that most of the participants from Qassim university medical students are aware about the theoretical knowledge that stands behind the role of bariatric surgery in weight reduction (63%), and bariatric procedures details (76.7%). Nawawi A et al. (15) found that the knowledge of bariatric surgery among final year medical students and interns in Jeddah city is not very high. Additionally, Matłok M et al. (19) evaluated the knowledge of students from four Polish medical universities regarding bariatric surgery and obesity; they found that their knowledge is low and needs a further increase in the awareness. Matłok M et al. attributed the poor student knowledge to the curriculum giving to the students and advised for enrolment of obesity and bariatric surgery into the surgical curriculum. Still further work needs to be done to increase the knowledge of medical students regarding bariatric surgery, as the study found that only 11.3% and 6.6% of the participants answered correctly about the surgical indication of obesity and the role of bariatric surgery in reduction cancer risk respectively.

In our study, we evaluated the medical student's opinion regarding the importance of having clinical knowledge about obesity and bariatric surgery, and if they want to be in their surgical curriculum, 86.8% and 97.2% respectively responded with an agreement.

CONCLUSION:

The level of the awareness of the Qassim University medical students regarding obesity and bariatric surgery is relatively high in comparison to other studies done in some universities. This can be attributed to the surgical curriculum provided to the students from Qassim University teaching faculty, and as our study shows that the medical students are willing to learn about obesity and bariatric surgery. It is essential to focus on a problem such as obesity and management options as it becomes more common than before. As a result, the newly graduated physician should have full knowledge about it.

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