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RESEARCH ARTICLE

AWARENESS, ATTITUDES, AND BACKGROUND INFORMATION ABOUT THE SURGICAL OPTIONS IN THE TREATMENT OF OBESITY AMONG THE GENERAL ADULT POPULATION

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Abstract

Obesity is a major health issue worldwide that affects greater than 20% of the people in the world. In Saudi Arabia, more than 34% of the population is considered obese, and more than 69% is considered overweight. Compounding this problem, according to a presentation at the 3rd International Obesity Conference in February 2014, it is asserted that obesity-related surgeries are not covered under Saudi healthcare. Thus, our study aims at;

1. Understanding the knowledge of surgical options in the treatment of obesity among the general adult population.
2. Assessing the attitude of surgical options in the treatment of obesity within the adult population.
3. Measuring the practice of surgical options in the treatment of obesity among the general adult population.

Methods: A randomized cross-sectional study was conducted among the adult Saudi population from different regions of Saudi Arabia. After endorsement of the ethical committee of the faculty of medicine, the data were gathered using a specifically designed self-administered electronic questionnaire translated to Arabic with close-ended multiple-choice questions to assess awareness, attitudes, and background information about sleeve gastrectomy in the treatment of obesity among the general adult population.

Results: More than half of the study respondents were females, while the rest were males. While the majority (65.1%) came from the central area, only about 14.1% of the study respondents would consider weight reduction surgery as the first method of reducing weight. Only 9.2% of the study respondents felt like weight loss surgery is effective enough in the decrease of weight, while 45.3% did not agree, and the rest did not know. There was a significant association between the efficiency of surgery and the age group at 5% $p=0.003$. Knowledge about obesity being a disease is significantly associated with $p=0.000$.

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Introduction:-

Obesity is defined as a body mass index of more than 30, has become one of the most significant public health hitches in recent years. Its prevalence is continuing to increase worldwide. As well as the burden of its associated co-morbidities and complications. Non-communicable diseases and their risk factors including obesity are now becoming a major problem not only in wealthy societies but also in developing countries [1,2]. It serves as one of

the main risk factors for Ischemic heart disease and stroke. Which are, according to the World health organization, the world's biggest killers accounting for 15.6 million deaths in 2016 alone. They also have been the leading causes of death in the past one and half decades [3]. It has been, understanding, associated with a raised risk of the many diseases and complications such as insulin resistance, fat tissue pathology or pathological metabolism. It can, as well, serve as an explanation for some complications like degenerative joint disease, impeding sleep disorder, enuresis, and dyslipidaemia, high blood pressure. Some researchers found that obesity contributes to psychological disorders as well as depression and social stigmatization [4].

According to a study done in 2005, obesity reached a 35.6% prevalence in Saudi Arabia and is expected to be higher in the coming years despite all the programs and campaigns made to enlighten the general population about its complications [5]. Recently, in 2018, researchers from Riyadh did a study to estimate a study of obesity treatment; they found the information regarding obesity and its preventive measures were high, but the perceptions regarding Bariatric surgeries were low [6].

Another study mentions that one in every three men in Saudi Arabia is overweight, and one in ten is morbidly obese. It is also estimated that 15,0000 surgeries are done annually in Saudi Arabia [7]. The main factors causing obesity include family history, diet patterns, and eating habits, genetic factors, marital status, hypertension, and the absence of physical activities [2]. There are three choices to management fleshiness; either by modification lifestyle, medication or last choice for a severe degree of obesity is by surgery [8]. The presently available nonsurgical treatments for weight decrease bring about constant weight loss in only a small fraction of the persons treated and do not reduce mortality. The contentious designation of surgical procedures as a "last resort" no longer appears in the new policy. Moreover, the expression "bariatric surgery" has been substituted by "obesity surgery" in order to make it clear that such procedures are a treatment for the disease called "obesity" [9]. The four most typical bariatric\obesity surgeries performed include; laparoscopic sleeve surgical process, small intestine switch, laparoscopic Roux-en-Y stomach bypass, and laparoscopic adjustable stomachal stripe. Sleeve surgical process (SG) is a bariatric operation that restricts the quantity of food consumption while not decreasing nutrient absorption, whereas conjointly decreasing hunger. SG, though the longer-term follow-up, showed mean excess weight loss of fifty-five percent [8]. Among the procedures mentioned before, no one can be endorsed as a universal standard; the choice of treatment is a personal one, taking due deliberation of the original weight, accompanying diseases if any, the patient's wishes and so on [9].

Justification

Obesity is a major health issue worldwide that affects greater than 20% of the people in the world. In Saudi Arabia, more than 34% of the population is considered obese and more than 69% is considered overweight. Compounding this problem, according to a presentation at the 3rd International Obesity Conference in February 2014, it is asserted that obesity-related surgeries are not covered under Saudi healthcare. Hence, our study is aimed to assess the awareness, attitudes, and background of the Saudi population about surgical options specifically Gastric sleeve surgery in The Treatment of Obesity

Research Objectives:-

The main study objective was to assess awareness, attitudes and background information about surgical choices in the treatment of obesity among the common adult population.

The specific objectives of the study stated;

1. To understand the knowledge of surgical options in the treatment of obesity among the general adult population.
2. To assess the attitude of surgical options in the treatment of obesity within the adult population.
3. To measure the practice of surgical options in the treatment of obesity among the general adult population.

Methods:-

A randomized cross-sectional study was conducted among the adult Saudi population from different regions of Saudi Arabia. After authorization of the ethical committee of the faculty of medicine, the data were gathered using a specifically designed self-administered electronic questionnaire translated to Arabic with close-ended multiple-choice questions to assess awareness, attitudes, and background information about gastric Sleevectomy in the treatment of obesity among the general adult population. The sample size was evaluated as a minimum of 384 adult Saudis according to the formula;

$$n = (NZ^2P(1 - P)/(D^2 + Z^2P(1 - P))$$

With the main inclusion criteria being adults age at least 18 years both male and female Inclusion criteria. The first part of the questionnaire required demographic information while the second part sought information about awareness and knowledge of the public on gastric sleeveectomy. The collected data were entered and statically analysed using Statistical Package for Social Sciences (SPSS) program for conducting descriptive analysis.

Analysis and Results:-

Evidence from the analysis (Table 1), it was shown that More than half of the study respondents were females while the rest were males. While the majority (65.1%) came from the central area, only about 14.1% of the study respondents would consider weight reduction surgery as the first method of reducing weight.

Table1:- Respondent demographic information.

Variable	Freq. (%)
Gender	
Female	574(53.6)
Male	495(46.3)
Geographical area	
Central	697(65.1)
Eastern	42(3.9)
Northern	59(5.5)
Southern	37(3.5)
Western	234(21.9)
Income	
5000-1000SR	256(23.9)
<5000 SR	459(42.9)
10000SR>	354(33.1)
Weight loss surgery as the first method of reducing weight	
Don't know	51(4.8)
No	868(81.1)
Yes	150(14.0)

More than 85% of the study respondents felt that weight loss surgery is risky, and perhaps the side effects of weight loss surgery outweigh the benefits. The frequency distribution for side effect opinions is shown below.

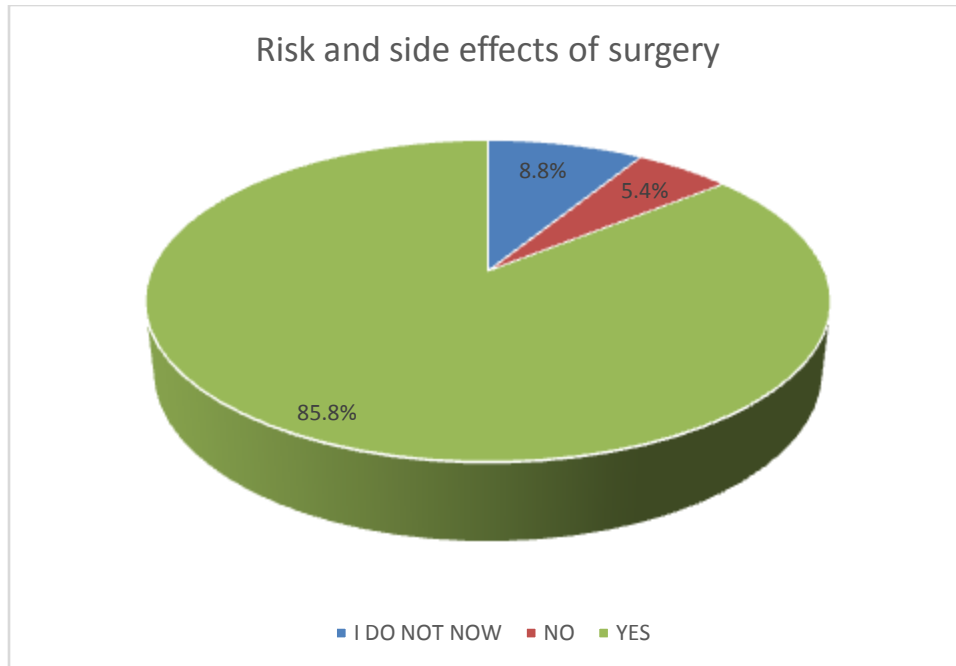


Figure 1:- Pictorial representation of side effects of surgery.

9.2% of the study participants thought that weight loss surgery was adequately successful in weight reduction, while 45.3% did not agree, and the remainder did not know.

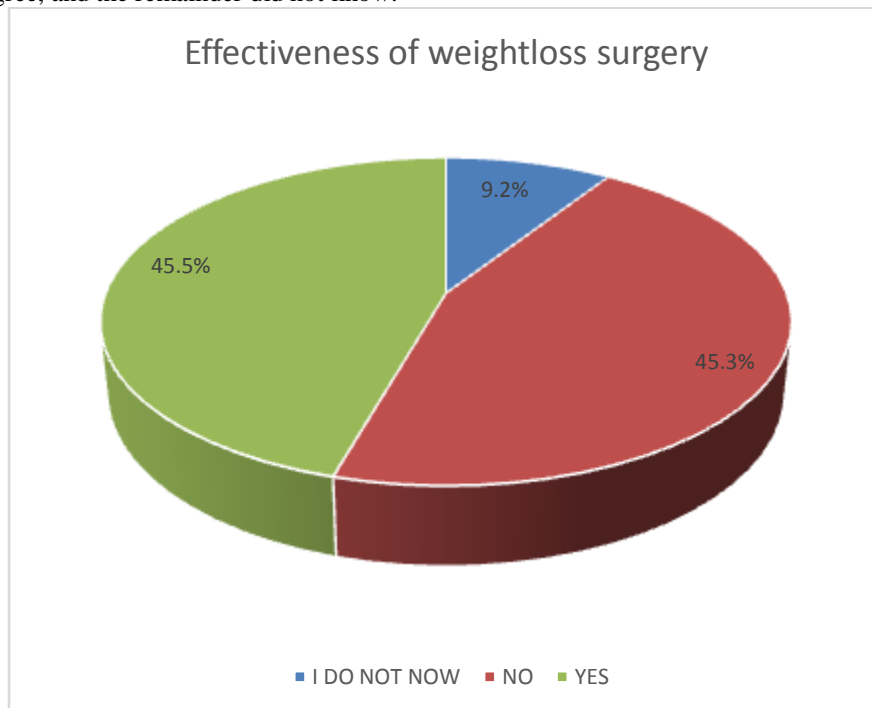


Figure 2:- Pictorial representation showing the effectiveness of weight loss surgery.

Figure 3 shows that most people (500/1067) are not sure whether diabetes is a disease or not, while an almost equal number of 45.8% of the study participants think that diabetes is a disease.

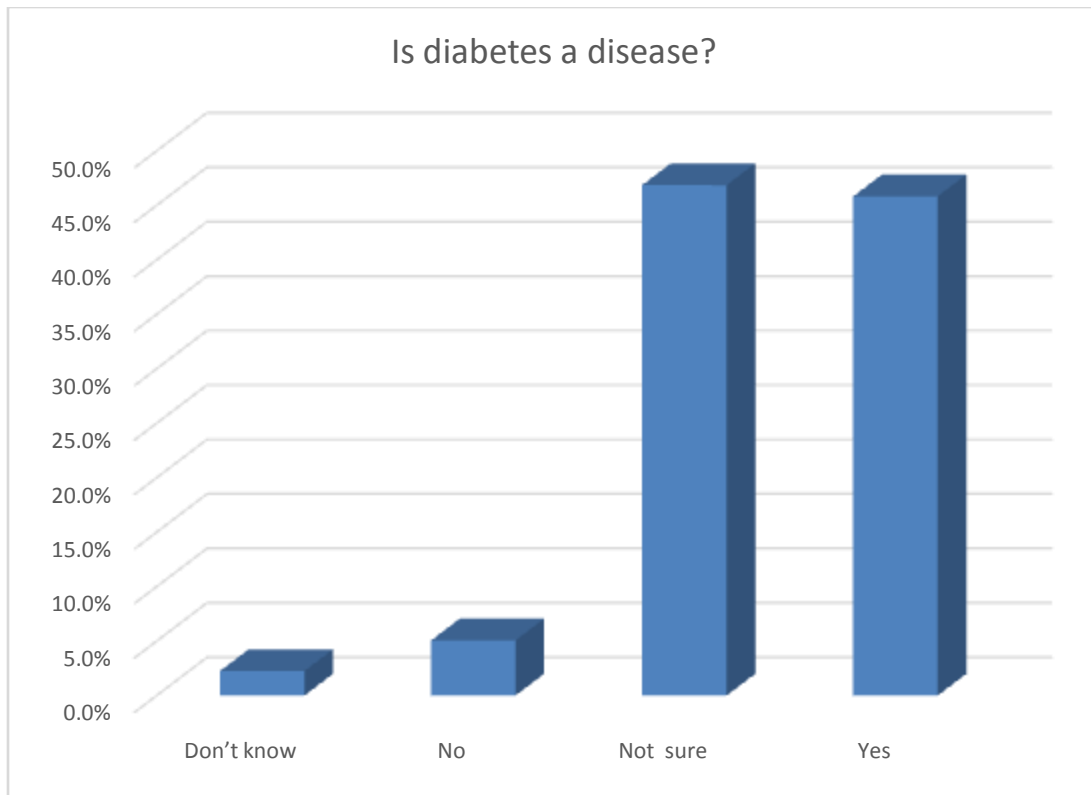


Figure 3:- Graphical representation of opinions about diabetes.

Half of the respondents in the 18-25 age bracket felt that weight loss surgery is effective, while less of the older respondents felt that the method was effective. Nevertheless, there was a substantial correlation at 5% $p=.003$ between surgical effectiveness and age group. While an average of 45.3% of respondents thought surgery was successful, there was no substantial correlation between income and rate and opinions on weight loss surgery effectiveness $p=.740$. $P=.837$ was not significantly associated with the perception of declining mortality and geographic area (Table 2).

Table 2:- Knowledge and attitudes towards surgery.

Variable	Yes (%)	p-value
Effectiveness of surgery		
Age		.003
<18	23(45.1)	
18-25	201(53.6)	
25-35	101(48.1)	
35-45	69(39.9)	
45-55	69(37.3)	
55>	23(31.5)	
Income		.740
<5000SR	113(44.1)	
5000-10000	210(45.8)	
10000>	163(46.0)	
Gender		.295
Female	259(45.1)	
Male	227(45.9)	
Geographical area		.399
Central	318(45.6)	
Eastern	14(33.3)	
Northern	32(54.2)	

Southern	18(48.6)	
Western	104(44.4)	
Reduction of mortality		
Age		
<18	20(39.2)	.006
18-25	144(38.4)	
25-35	76(36.2)	
35-45	71(41.0)	
45-55	51(27.6)	
55>	15(20.5)	
Income		.196
<5000SR	159(34.6)	
5000-10000	81(31.6)	
10000>	138(39.0)	
Gender		.044
Female	185(32.2)	
Male	193(39.0)	
Geographical area		.837
Central	246(35.3)	
Eastern	12(28.6)	
Northern	18(30.5)	
Southern	17(49.5)	
Western	85(36.3)	
Side effects		
Age		
<18	42(82.4)	.126
18-25	334(89.1)	
25-35	182(86.7)	
35-45	146(84.4)	
45-55	158(85.4)	
55>	53(72.6)	
Income		.069
<5000SR	224(87.5)	
5000-10000	391(85.2)	
10000>	302(85.3)	
Gender		.295
Female	503(87.6)	
Male	414(83.6)	
Geographical area		.409
Central	599(85.9)	
Eastern	32(76.2)	
Northern	50(84.7)	
Southern	32(86.5)	
Western	204(87.2)	

Evidence from the analysis (Table 3), it was shown that high number of respondents which account for about half of the total respondent are aged 18-25 years, 45-55 years and older than 55 years thought that obesity was disease, and that age group and knowledge about obesity being a disease are statistically significant at $p < 0.001$. However, income levels and opinions about obesity being a disease were significantly associated.

Table 3:- Knowledge and attitudes about obesity.

Variable	Yes (%)	p-value
Obesity as a disease		
Age		.000
<18	12(23.5)	
18-25	198(52.8)	

25-35	88(41.9)	
35-45	54(31.2)	
45-55	98(53.0)	
55>	39(53.4)	
Income		.029
<5000SR	210(45.8)	
5000-10000	99(38.7)	
10000>	180(50.8)	
Gender		.000
Female	166(28.9)	
Male	323(65.3)	
Geographical area		.000
Central	367(52.7)	
Eastern	15(35.7)	
Northern	6(10.2)	
Southern	12(32.4)	
Western	89(38.0)	
Drinking water and obesity		
Age		.515
<18	38(74.5)	
18-25	269(71.7)	
25-35	150(71.4)	
35-45	131(75.7)	
45-55	137(74.1)	
55>	54(74.01)	
Income		.787
<5000SR	186(72.7)	
5000-10000	338(73.6)	
10000>	257(72.6)	
Gender		.175
Female	431(75.1)	
Male	350(70.7)	
Geographical area		.695
Central	498(71.4)	
Eastern	33(78.6)	
Northern	45(76.3)	
Southern	31(83.8)	
Western	174(74.4)	

Discussion:-

The current study was a cross-sectional descriptive study carried out through self-administered surveys of adult Saudis willing to participate in the study. The fact that the study was primarily descriptive in nature suggests that the findings of the study remain descriptive. The target sample size was 384, but the final sample had many more respondents, 1067, who completed the study, which added to the advantage of the statistical power of the study. Additionally, respondents from all six regions of Saudi Arabia helped in getting a clearer picture as separated by geographical area. Diversification was also considered by including participants of different ages both genders and different income brackets.

The pie chart of perceived risks and side effects of weight loss surgery indicate an overall dislike of surgical approach to weight loss with more than 80% of the participants suggesting that the surgery approach has more risks and side effects (Sarwer, et al. 2013). This figure is complemented by the fact that less than 10% of the study participants thought that surgery was effective in the reduction of overall body weight, in addition to 72.7% preferring a healthy diet and exercise as forms of reduction of weight. The fact that there was no association between perceiving the knowledge of the side effects of surgery and age is an indication of a relatively equal perceived knowledge across the ages about the effectiveness of weight loss surgery. This result was also found by

(Sarwer, et al. 2013; Gasoyan, et al. 2018; Aldaqi, et al. 2018). There was also no significant association with income and knowledge of the side effects, gender, and perceived knowledge of the side effects and geographical area and perceived knowledge of the side effects ($p > .05$ in all mentioned cases). It, however, appears that individuals aged between 18 and 45 were more convinced that surgery reduces mortality as compared to respondents aged older than 45 years. This could be explained by the overall penetration of formal knowledge and many different sources of knowledge about weight loss such as the internet. Or it could be due to the younger generation being more risk-takers and being more susceptible to the personal image that they would rate surgical approach as a method that can reduce mortality Abouhamda, et al. (2016).

Given that, on average, 45.3% of the respondents said that obesity is a disease, the more informed group according to age appeared to be those aged older than 45, and those between ages 18 and 25, more than half of which correctly thought that obesity is a disease. There was a significant association in regards to opinions of obesity being a disease and age groups. This can be attributable to older people getting information about obesity from medical professionals and younger people getting the same information most likely from the internet. Efforts of various stakeholders such as nutritionists, medical professionals, government, and non-governmental organizations to sensitize people on the proper diet (Alfadda, et al. 2016) and the role of water in limiting excessive weight gain were marked by 72.1% of the respondents who agreed that water consumption reduces obesity. An interesting factor in our study was that there no major differences in the groups and hence no significant association with gender, income level, geographical area and age groups.

In conclusion, there was an overall dislike of the surgical approach to reducing excessive weight in all regions between the ages of 18 and 55, both gender and all levels of income among Saudis. Natural approaches, however, were more favoured in all groups instead.

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