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Research Article

**AWARENESS AND BACKGROUND INFORMATION ABOUT  
SURGICAL OPTIONS IN THE TREATMENT OF OBESITY IN  
GENERAL POPULATION IN ARAR CITY, KSA****Basmah Abdullah Alanazi<sup>1</sup>, Jawaher Mohammed Hassan AL-Ruwaili<sup>1</sup>, Alaa Jameel  
Ahmed<sup>1</sup>, Shahad Lafi Alanazi<sup>1</sup>, Nawal Ahmed M Alshammari<sup>1</sup>, Mashaal Jaza  
Alshammari<sup>1</sup>, Ohud Falah M Alanazi<sup>1</sup>.**<sup>1</sup>Faculty of medicine, northern border university.**Abstract:**

**Background:** KSA was reported to have a rapid increase in the prevalence of obesity as about 33% of Saudi adults are obese and 70% are overweight. Weight loss surgery (WLS) is the most effective, invasive and rapid treatment option for patients with excess body weight, especially morbid obesity and diseases caused by it. There are no studies evaluating the knowledge of general population of Arar city, KSA in the field of bariatric surgery. **Objectives:** this study was conducted to assess the knowledge of general population of Arar city, KSA regarding bariatric surgery.

**Methods:** this is a cross-sectional study. The study was conducted among adult Saudi population from February 2018- July 2018 in Arar city, KSA with a population size of 152 people. **Results:** most of the cases were from 21 to 30 years old (62.5%), the majority (93.4%) were females. The BMI status indicates a higher percentage of obesity (22.4%), and underweights were only 7.2%. As regards cases' answers, 61.2% knew that bariatric surgery is effective in weight loss. The results also show an insignificant relation between education level and knowledge about whether bariatric surgery is effective in weight loss, whether bariatric surgery is the only way to get rid of obesity, and considering bariatric surgery as the first way to lose weight regardless of diet or exercise. **Conclusions:** knowledge of general population of Arar city in the surgical treatment of obesity is not high. It may be assumed that false beliefs on the effectiveness and risk patterns of bariatric surgery are still very common, despite rising surgery numbers.

**Keywords:** bariatric surgery, knowledge, obesity.**Corresponding author:****Basmah Abdullah Alanazi,**

Faculty of medicine, northern border university.

QR code



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**INTRODUCTION:**

In recent years, the incidence of obesity, this is defined as a body mass index (BMI) of 30 kg/m<sup>2</sup> or higher, has been increasing rapidly.

KSA was reported to have a rapid increase in the prevalence of obesity as about 33% of Saudi adults are obese and 70% are overweight [1]. In the 2012 report concerning the member countries of the European Union (EU), it was reported that 52% of the adult population are overweight, of which 17% are obese [2]. Life style as diet, exercise and demographics play a significant role in obesity [3-4]. Morbid obesity, which is an indication for surgical treatment, is considered to be the state when the BMI on its own exceeds 40 kg/m<sup>2</sup>, or when the BMI is over 35 kg/m<sup>2</sup> and is accompanied by comorbidities like: type 2 diabetes, hypertension, dyslipidemia, osteoarthritis, sleep apnea, which are the most common observed, and others. Bariatric surgery is considered as the most effective, beneficial and permanent method for treatment of obesity and decreasing the long-term mortality [5-6]. During the past two decades, surgical treatment of obesity has shown a growing importance for reduction of weight and decreasing the rates of disease morbidity and mortality [7-8].

**Objectives:**

This study was conducted to assess the knowledge of general population of Arar city, KSA regarding bariatric surgery.

**Significance of the Study:**

To determine the knowledge and beliefs about the safety and effectiveness of bariatric surgery among the general population of Arar city.

**MATERIALS AND METHODS:**

After needed approvals, this cross-sectional study was conducted among adult Saudi population from February 2018- July 2018 in Arar city, KSA with a population size of 152 people. The research tool was a pre-designed questionnaire, which was prepared and translated by the authors and consisted of questions concerning basic issues from the area of the surgical treatment of obesity. Non-Saudi population and incomplete data were excluded. The questionnaire was anonymous and an informed consent was obtained from all participants included in the study and they were informed that the study has no expenses on their health.

**Statistical analysis:**

Collected data was coded and analysis was done using Statistical package for social sciences (SPSS,

version 20). P values equal to or less than 0.05 was considered statistically significant.

**RESULTS:**

Table (1): Shows the socio-demographic characteristics of the studied population with a total of 152 cases. Most of the cases were from 21 to 30 years old (62.5%), the majority (93.4%) were females, (76.3%) university or more educated. 29.6% of the studied population were working, and 56.6% were single.

Table (2): Illustrates cases' personal comment on bodyweight and Body Mass Index (kg/m<sup>2</sup>) status of the studied population. More than half of the cases thought they had a normal weight (51.3%), around one third thought they were overweight, and only 7.9% thought they were obese. The BMI status approved that half of the cases had a normal bodyweight, however, the BMI status indicates a higher percentage of obesity (22.4%), and underweights were only 7.2%.

Table (3): Illustrates the knowledge of the studied population about obesity and bariatric surgery. As regards cases' answers, 61.2% knew that bariatric surgery is effective in weight loss. 91.4%, respectively, considered obesity as a disease. Most of them thought of genetic factors as a risk factor of obesity (78.3%), while (59.9%) didn't think that family history is related to morbid obesity. About one third thought bariatric surgery reduces the mortality, on the other hand (38.2%) considered it as a cause of death, and only (13.8%) thought it doesn't cause any complications. (75.7%) said drinking water reduces the risk of obesity. 3.9% didn't see obesity as increasing in body fat. 60.5%, respectively, considered obesity as a risk factor of diabetes and hypertension. 84.2% thought smoking and fast food increases the liability of obesity, and (96.7%) thought physical activity decreases the risk of obesity. Most of the cases didn't consider bariatric surgery as the first way to lose weight regardless if diet or exercise (75.7%), and (82.9%) disagreed when asked whether bariatric surgery is the only way to get rid of obesity.

Table (4): Illustrates the relationship between educational level and knowledge of the studied population about obesity and bariatric surgery. It is clear from the table that knowing whether obesity is caused by genetic factors had a significant relation with education level, while the table shows an insignificant relation between education level and knowledge about whether bariatric surgery is effective in weight loss, whether bariatric surgery is the only way to get rid of obesity, and considering bariatric surgery as the first way to lose weight regardless of diet or exercise.

**Table (1): Socio-demographic characteristics of the studied population, Arar, 2018 (N=152)**

Variables	Frequency (No.)	Percent (%)
<b>Age group</b>		
• <21	28	18.4
• 21-30	95	62.5
• 31-40	24	15.8
• >40	5	3.3
• Mean age ( $\pm$ SD)	26.4 $\pm$ 7.0	
<b>Sex</b>		
• Female	142	93.4
• Male	10	6.6
<b>Education</b>		
• Primary	4	2.6
• Secondary	32	21.1
• University or more	116	76.3
<b>Working status</b>		
• Not working	107	70.4
• Working	45	29.6
<b>Marital status</b>		
• Widow/ Divorced	8	5.3
• Single	86	56.6
• Married	58	38.2

**Table (2): Personal comment on bodyweight and Body Mass Index (kg/m<sup>2</sup>) status of the studied population, Arar, 2018 (N=152)**

Personal comment on bodyweight	Frequency	Percent
• Underweight	15	9.9
• Normal weight	78	51.3
• Overweight	47	30.9
• Obese	12	7.9
<b>Body Mass Index (kg/m<sup>2</sup>) status</b>		
• Underweight	11	7.2
• Normal	76	50.0
• Overweight	31	20.4
• Obese	34	22.4
<b>Mean body Mass Index (<math>\pm</math>SD)</b>	25.7 $\pm$ 6.8	

**Table (3): Knowledge of the studied population about obesity and bariatric surgery, Arar, 2018 (N=152)**

Questions	Yes	No	Don't know
	No. (%)	No. (%)	No. (%)
Bariatric surgery is effective in weight loss	93(61.2)	36(23.7)	23(15.1%)
Do you consider obesity as a disease	139(91.4)	13(8.6)	0.0
Obesity is caused by genetic factors	119(78.3)	18(11.8)	15(9.9)
Family history of morbid obesity	58(38.2)	91(59.9)	3(2.0)
Bariatric surgery reduces the mortality	47(30.9)	55(36.2)	50(32.9)
Bariatric surgery causes death	58(38.2)	39(25.7)	55(36.2)
Bariatric surgery don't cause complications	21(13.8)	92(60.5)	39(25.7)
Drinking water reduces the risk of obesity	115(75.7)	21(13.8)	16(10.5)
Obesity is increasing in the body fat	139(91.4)	6(3.9)	7(4.6)
Obesity increases the risk of diabetes and hypertension	92(60.5)	32(21.1)	28(18.4)
Smoking and fast food increases the liability of obesity	128(84.2)	10(6.6)	14(9.2)
Physical activity decreases the risk of obesity	147(96.7)	5(3.3)	0.0
Do you consider that bariatric surgery is the first way to loose weight regardless of diet or exercise	24(15.8)	115(75.7)	13(8.6)
Is bariatric surgery the only way to get rid of obesity?	14(9.2)	126(82.9)	12(7.9)

**Table (4): relationship between Educational level and Knowledge of the studied population about obesity and bariatric surgery, Arar, 2018 (N=152)**

Question	Response	Educational level			Total (N=152)	P value
		Primary (N=4)	Secondary (N=32)	University (N=116)		
Bariatric surgery is effective in weight loss	No	1	11	24	36	0.566
		25.0%	34.4%	20.7%	23.7%	
	Don't know	1	4	18	23	
		25.0%	12.5%	15.5%	15.1%	
Yes	2	17	74	93		
	50.0%	53.1%	63.8%	61.2%		
Obesity is caused by genetic factors	No	2	1	15	18	0.027
		50.0%	3.1%	12.9%	11.8%	
	Don't know	0	6	9	15	
		.0%	18.8%	7.8%	9.9%	
Yes	2	25	92	119		
	50.0%	78.1%	79.3%	78.3%		
Do you consider that bariatric surgery is the first way to lose weight regardless of diet or exercise	No	3	26	86	115	0.493
		75.0%	81.2%	74.1%	75.7%	
	Don't know	1	3	9	13	
		25.0%	9.4%	7.8%	8.6%	
Yes	0	3	21	24		
	.0%	9.4%	18.1%	15.8%		
Is bariatric surgery the only way to get rid of obesity?	No	3	22	101	126	0.088
		75.0%	68.8%	87.1%	82.9%	
	Don't know	1	4	7	12	
		25.0%	12.5%	6.0%	7.9%	
Yes	0	6	8	14		
	.0%	18.8%	6.9%	9.2%		

**DISCUSSION:**

This study aimed to examine public perceptions of bariatric surgery, in Arar city. As previously mentioned, the surveyed population consisted of 152 participant, the majority (93.4%) were females. The

mean body mass index of the participants was  $25.7 \pm 6.8$ . Overweight and obesity were found to be relatively high (38.8%) among the studied population and this could be attributed to that the majority of respondents were females and obesity is more

prevalent in women than men [9, 10]. The most common causes for obesity were genetic factors, bad life style habits and bad nutrition which was consistent with other studies showing that lack of exercise and adoption to fast foods were a major factors contributing to obesity [11, 12].

Conservative treatment of morbid obesity (including here miracle diets, physical activity and psychological support) has been shown to be ineffective in long-term follow-up. In our study we evaluated the knowledge level and background information of the participants about obesity and bariatric surgery. As evaluated in our study, the knowledge of obesity and bariatric surgery among participants in our country is relatively high. In spite of the fact that the study group is relatively small, which could be considered to be a research limitation, this is still the first such study in our country that gives us a general overview of the quality of knowledge in this field. On the contrary; Amani Jamil Alqurashi et al. [13] found a good knowledge about obesity but low favorable beliefs about bariatric surgery. Another study was done in the same field by Marcin Giaro et al. [14] to evaluate the knowledge of surgical treatment of obesity among surgeons. They had a sample of 143 surgeons, and they found a high level of knowledge about bariatric surgery among their participants. Also Sikorski C. et al [15] did a similar study in Germany and they found that Lifestyle-based interventions were viewed as most effective in terms of weight loss. In about 50 % of the population WLS was very effective while still a quarter of respondents did not ascribe effectiveness to WLS.

In our study we found no correlation between educational level and knowledge of the studied population about obesity and bariatric surgery. For improvement of the study and removal of such a confounding factor, a larger and more representative population should be targeted. The present study has some limitations including the weight and height of subjects were self-reported. Results couldn't be generalized all over KSA as small sample was included.

### CONCLUSION:

In conclusion; The general public of Arar city, KSA seems to has a good knowledge level about obesity and bariatric surgery, however; false beliefs on the effectiveness and risk patterns of bariatric surgery are still common. Our results further emphasize the need for providing evidence-based information on bariatric surgery and knowledge level and background information about obesity and surgical treatment of obesity to the general public.

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