

## ***Bariatric Surgery: A multidisciplinary approach for obesity treatment in patients in Middle East***

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**ABSTRACT:** The underlined study aimed to understand the reasons, knowledge and expectations of people undergoing bariatric surgery in Middle East and Jordan. A retrospective study is designed and was conducted in the Mohammad Al-Zitawi Obesity Management Centre between the years 2015 and 2017. A total of 154 participants (males: 45; females: 109) who had body mass greater than 40kg/m<sup>2</sup> and aged between 20-60 years took part in the study. The experiences of the study participants indicate the nature and burden of obesity. Findings of the study revealed that participants underwent surgery due to their failure in weight loss from other interventions. Most of the participants have poor knowledge about bariatric surgery and its implications and they expected surgery to result in major physical improvement. However, the results were not same for every patient.

**Keywords:** Bariatricsurgery, Obesitytreatment, Obesitymiddle-East, Multidisciplinaryteam

### **Introduction**

Obesity is a never ending and a fastest growing health crisis in the world (**Hruby & Hu., 2015**). This health issue is further associated with several major co morbidities, such as diabetes, hypertension (HTN) and cardiovascular diseases (CVDs) have serious health impacts (**Kim, 2016 & Pantalone et al., 2017**). Worldwide Obesity has reached epidemic proportions with more than one billion overweight adults (**Afzal., 2017**). Globally, around 400 million people are obese and overweight (**Ng et al., 2014**). Similarly, population in Middle East has bumped into a remarkable conversion in terms of its economy and society. Middle East is ranked to have second highest BMI and it is also marked at second position in world for having highest mean waist hip ratio (WHR). Its prevalence has affected not only adults but also children and adolescents (**Finucane et al., 2011**). Obesity is a multifaceted disease that results from the interaction of several dietary, lifestyle and behavioural factors (**Hruby & Frank.,**

**2015**). Globally, researchers are trying to develop best approach to tackle obesity. Now- a-days several treatments exist for the obesity management such as dietary therapy, physical activity, behavioural therapy, pharmacotherapy or combinations of all these strategies (**Blaz & Svb., 2015**). On the other hand, surgical intervention is considered as an effective intervention over nonsurgical methods. Bariatric surgery helps in fat reduction by reducing the size of stomach either by using gastric band or by reducing the size of stomach. There is a need of hard-hitting approach for treating and managing obesity.

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However, the impact, the modality, the timing and the cost effectiveness of the bariatric surgery is still controversial (**Kissler & Settmacher., 2013**). Obesity has created havoc among the population of Middle East and Jordan. Despite, this alarming increase in the obesity incidence not much literature is reported. Therefore, we intended to plan a research study to evaluate several aspects related to obesity treatment and management among obese patients. The present study is design to determine the role of Bariatric Surgery in long term management of obesity and to explore the knowledge of patients on available obesity treatments. Our study covers around all the fundamental ethical principles like autonomy, informed consent, maintaining confidentiality, respect for patient's dignity, and respect for cultural and social beliefs. The results obtained here in our report were compared with other studies.

### **Methodology**

This retrospective study was conducted in the Mohammad Al-Zitawi Obesity Management Centre between the years 2015 and 2017. The study participants were randomly selected and enrolled participants were 10% of the patients who attended obesity management centre in that particular year. All study patients were above 20 years of age and had been referred to the bariatric unit at Al- Zitawi Obesity Management Centre. A total of 154 patients (males: 45; females: 109) who had body mass greater than 40kg/m<sup>2</sup> and aged between 20-60 years took part in the study indicated in table 1. Since, the study is of retrospective kind and the enrolled participants were not located in the city. Data and consent was obtained on phone from participants. Questionnaire forms were filled on phone after that questions were explained to the participants in English and Arabic language and consent was also obtained in the same way. In the present study, we used mixed method approach to improve the quality of our research study. **Inclusion and Exclusion Criteria:** Before the start of the study, participants were clearly informed about the

duration and the aspects of the study. Three main aspects were taken into consideration while including the patients for study purpose. Only those individuals were included in the studies that were ready to give their detailed personal information on demographics, anthropometric and biochemical outcomes. All those participants who were willing to give their consent were included in the study. Those participants who denied to share their complete details and were not ready to give their consent were excluded from participating in the study.

**Baseline Evaluations:** All anthropometric evaluations, body compositions and biological measurements for each study participants were taken from their medical files available at Obesity Management Centre.

**Ethical Aspects:** Ethical approval for the study was taken from hospital ethical committee. At the time of filling up of questionnaire forms all ethical aspects such as beneficence (doing good), non malfeasance (not justifying patients), fidelity, trust, respect, unbiased treatment, cultural respect, right to justice, maintenance of confidentiality, right to decision making and voluntary decision were taken into consideration.

**Statistical Analysis:** Many software tools and internet based softwares were used for data analysis. All data from the questionnaires was entered in excel sheet for the statistical analysis. Paired student *t* test, Fisher exact (*f*) test, standard deviation etc were used to analyse the data and results are documented as rate ratios and 95% confidence intervals (CI). Statistical data of the study are presented as the mean  $\pm$  standard deviation and categorical data are presented as frequencies. Crude data from Microsoft excel sheet was transferred to statistical packages for social sciences (SPSS) software version 23.0. Significant difference between two variables was test using *t* test. Differences with P-values less than 0.05 were considered to be statistically significant.

**Results: Baseline Characteristics:** A total of 241 patients met the inclusion criteria and were

included in the study. The mean age of patients included in the study were aged between 20 and 60 years ( $M=35.5$ ,  $SD=8.85$ ) with the average age of the patients being almost the same in each of the three years ( $F(2, 151) = 0.02$ ,  $p=.98$ ) and for both male and female patients ( $t(152) = -0.765$ ,  $p=.445$ , 2-tailed).

The investigated participants weighed between 58Kgs and 159Kgs ( $M=82.3$ ,  $SD=21.93$ ) and had a height of between 1.50m and 1.83m ( $M=1.64$ ,  $SD=0.0817$ ). On average, the investigated patients had a mean BMI of about  $30.3 \text{ Kg/m}^2$  ( $SD=6.36$ ). Patients that had received bariatric surgery in different years were not significantly different in terms of their weight ( $F(2, 151) = 1.238$ ,  $p=.293$ ), height ( $F(2, 151) = 0.006$ ,  $p=.994$ ) and BMI ( $F(2, 151) = 1.811$ ,  $p=.167$ ). A statistically significant difference was observed in BMI of male participants as compared to female participants ( $t(152) = 6.37$ ,  $p<.001$ ).

Moreover, among our investigated patients, it was observed that 32 (20.8%) were normal, 61 (39.6%) were overweight and another 61 (39.6%) were obese and it was also documented that the BMI group of a patient was not statistically significantly associated with the year in which the patient had received bariatric surgery ( $\chi(4) = 6.734$ ,  $p=.151$ ) and the gender of a patient ( $\chi(2) = 5.351$ ,  $p=.069$ ).

#### **Use of Different Interventions for Weight Loss:**

Among the participants surveyed in the present study, a total of 118 (76.6%) participants had lost some amount of weight through the interventions they had used. The patients that had used the interventions prior to the bariatric surgery were 132 (85.7%) for diet, 86 (55.8%) for exercise and 15 (9.7%) for the medication indicated in table 2. We categorised these participants in three groups. First group of patients that lost some weight, on an average lost nearly 11 Kg ( $M=10.9$ ,  $SD=8.82$ ), another group of patients that had lost most weight, on an average lost around 40 Kg and the third group of patients that had lost least weight, had lost only 1.5 Kg of weight.

However, no significant association was reported between the weight loss and the year in which patient had undergone the bariatric surgery. Moreover, patients that had received bariatric surgery in any of the three years were not necessarily the ones that had lost most weight through diet or exercise interventions ( $F(2, 115) = 0.108$ ,  $p=.898$ ).

**Considering Bariatric Surgery:** Our study participants mentioned several reasons for undertaking bariatric surgery such as failing/doctor's advice (27.9%), regaining self-esteem/confidence (31.8%) and improving one's health (27.3%). On an average the patients enrolled in our study had lost about 9kg of weight before undertaking the bariatric surgery ( $M=9.1$ ,  $SD=9.08$ ). However, there were those participants also that had lost up to 40 Kg of weight and those that had lost no weight at all before surgery. Patients that had undergone bariatric surgery in any of the three years were not necessarily the ones that had lost more weight than others before undergoing the surgery ( $F(2, 145) = 0.004$ ,  $p=.996$ ). Statistical analysis showed that on an average our enrolled participants had taken about nine months in considering whether to undergo a bariatric surgery or not ( $M=9.4$ ,  $SD=11.03$ ). Moreover, data analysis showed that the common reasons of study participants for considering bariatric surgery is the failure in other interventions (37%), improve health (27.3%), low self-esteem/confidence (13.6%), inability to perform life activities (13.6%), sleep apnea/disorder (5.8%) and back/joint pain (14.3%). Most of our participants (83.3%) had knowledge about the sleeve Gastrectomy, followed by gastric bypass (62.3%), gastric balloon (62.3%) and then the laparoscopic adjustable gastric band (60.4%). Awareness of these types of bariatric surgery was however not significantly associated with the year when the patient has received the surgery.

## Discussion

Obesity has been declared as fastest growing threat and global epidemic by WHO (**WHO., 2000**). The present study is a small retrospective study reporting the short outcomes of bariatric surgery among the inhabitants of Middle East. This investigation study offers new approach and experiences from the participant's point of view towards bariatric surgery in the Middle East. Bariatric surgery is an effective option for managing obesity but several factors such as educational level, social and media awareness about bariatric surgery, lack of obesity management centres etc affects obese people in seeking this solution (Altaf & Abbas., 2019). The focal point of the present study was to find out whether the patients attending obesity management centre have knowledge about 'bariatric surgery' and why they opted this method. The results of our study showed that patients in the Middle East do not have much knowledge and understanding about the bariatric surgery and this finding is in consistent with the studies of **Taube-Schiff et al. (2016)** and **Guler et al. (2018)** indicating that usually obese patients have limited knowledge about bariatric surgeries even in the developed countries. Moreover, a recent research documented by **Altaf & Abbas (2019)** in Saudi Arab documents that the public awareness about obesity and bariatric surgery is very limited. Our study also reported that the bariatric surgery patients failed to lose much weight they wanted to lose as compared to other interventions and failed to have long term weight loss management. Similar findings were reported by **Kushner (2014)** and **Grunchy&Eliger (2017)**. These authors reported in their study that bariatric surgery remains sustained but the patients need to maintain lifestyle adjustments and stay under the guidance of weight management team. However, another study by **Luck-Sikorski et al (2012)** argued that bariatric surgeries are more of obesity treatment intervention rather than obesity management intervention. On the other hand, a study by **Westerveld & Yang (2016)** documented that obesity can be treated and managed through

exercise and diet. Health burden, failure from other interventions and doctors advice is some of the major factors reported by our patients undergoing bariatric surgery. Same reasons had been reported in the studies carried out by **Coen et al (2018)** and **Bult et al. (2008)**. These studies indicate that bariatric surgery is the best suitable intervention when obesity is severe and is accompanied by risk of co-morbidity and mortality. Our study shows an obvious gap in awareness and knowledge about bariatric surgery among the studied participants from the Middle East. There is a need of using different platforms for spreading accurate awareness about Bariatric surgery and its associated benefits, risk factors and associated complications.

## Conclusion

This research paper endowed us with the experiences, reasons and knowledge of the patients in Middle East and Jordan who have been referred to bariatric surgery. The results of our study showed that there is a deficit in the basic knowledge and awareness about obesity and bariatric surgery among the people. Educational level does not affect an individual's acquaintance or outlook about this intervention. Public awareness should be created by surgeons and health educators and they should act accordingly to develop better knowledge and awareness among general public. Most of patients in our study fail to meet their expectations from surgery as benefits of treatment are not universal to all the patients. Our study also throws light on the significance of weight management services, behavioural change and self management in modifying patient's expectations of having long term benefits of bariatric surgery. Future research is required to have better understanding of patient's requirements from bariatric surgery.

**Table 1.** Illustrating Gender Wise And Year Wise Distribution of Participant

Enrolment Year	Male	Female	Total Patients Recruited (10%)	Total Population Managed
2015	4	20	24	241
2016	17	59	76	761
2017	24	30	54	540

**Table 2.** Depicting duration of Interventions used and Considering Surgery and Kgs Lost by Year Operated

	Year			F	P
	2015	2016	2017		
	M(SD)	M(SD)	M(SD)		
Duration of diet intervention	61.7(52.37)	59.4(72.46)	57.6(65.41)	0.026	.974
Duration of exercise intervention	41.2(33.03)	59.2(75.30)	52.3(66.36)	0.353	.704
Kgs lost with diet, exercise or both	11.2(9.34)	10.9(8.92)	10.7(8.68)	0.016	.984
Medication intervention duration	3.5(3.24)	4.0(5.43)	3.8(4.95)	0.045	.956
Weight lost before bariatric surgery	9.1(9.49)	9.0(9.12)	9.1(9.03)	0.004	.996
Duration of considering surgery	9.3(9.63)	9.4(11.55)	9.4(11.04)	0.001	.999

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