

Quality of Life after Biliopancreatic Diversion Bariatric Surgery among Adults in National Guard Hospital Dammam KSA

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Abstract: *This cross-sectional study aimed to assess the quality of life of obese patients after undergoing biliopancreatic diversion bariatric surgery. The study was conducted from January to March 2018 at the National Guard hospital, Dammam, Kingdom of Saudi Arabia. Of the 201 participants; 40% were 31-40 years old, 63.7% were female, 55.7% were satisfied with their weight after surgery, and 51.2% were happy with their outward appearance. Bariatric surgery had positive effects on patients' quality of life, both physical and mental, and the significant weight loss reported after the surgery led to reducing their depression making them happy and satisfied.*

Keywords: Quality of Life, Biliopancreatic Diversion Bariatric Surgery, National Guard Hospital Dammam KSA

1. Introduction

Obesity is a chronic disease and its prevalence in adults, adolescents, and children is likely to increase in the near future [1]. When the body mass index is more than 30kg/m^2 , the condition is defined as "obesity." The World Health Organization has described obesity as global epidemic [2]. There are numerous health-related consequences related to obesity, including type 2 diabetes, cardiovascular disease, neuropathy, and cancer [3].

Psychological distress, disorder eating, and impaired health-related quality of life (HRQoL) are the risk factors associated with obesity. Severity of medical complications increases with obesity [4]. Weight loss of 5 to 10% has been associated with significant reductions in comorbidities and mortality [5]. There are different ways to control or treat obesity. It can be treated through following a conventional lifestyle and pharmacologic intervention, which depends on the severity of obesity. Appetite suppressants is another part of pharmacological treatment. Behavior-based treatment involves diet restriction and increased physical activity, while undergoing a surgical procedure is another method.

Gastric band, gastric bypass, and sleeve gastrectomy are categorized as surgical procedures. In the gastric band procedure, an inflatable band is placed around the upper portion of stomach, creating a small stomach pouch above the band while the rest of the stomach is below the band. Gastric bypass is another type of weight loss surgery that involves creating a small pouch from the stomach and connecting the newly created pouch directly to the small intestine. Sleeve gastrectomy is typically performed laparoscopically, and it involves inserting small instruments through multiple small incisions in the upper abdomen leaving a tube-shaped stomach about the size and shape of banana. These surgeries are considered the most successful interventions in weight loss [6]. In the biliopancreatic diversion procedure, a large portion of the stomach is removed, the remaining stomach is attached to the ileum bypassing the duodenum and jejunum, and therefore the length of the small intestine is shortened leading to significant weight loss [6].

Improvement in quality of life is the real success of bariatric surgery and there are multiple ways in which it can be evaluated. It is typically operationalized as physical well-being, mental well-being, and well-being in other social domains, with many instruments measuring one or more of the above categories. The aim of the current study is to evaluate the quality of life of obese patients after they underwent biliopancreatic diversion bariatric surgery, at the National Guard hospital, Dammam, Kingdom of Saudi Arabia (KSA).

2. Method

This cross-sectional study was conducted from January to March in 2018 through phone interviews. Interview were conducted from the medical records room in total privacy in the National Guard Hospital, Dammam, KSA. The doors of medical record room were locked during the interview to ensure confidentiality and privacy of the call. Each author called the patients from inside the private room in the medical records division using his or her private mobile number, which is a secure line, and the interviews were not recorded.

All the obese patients who underwent biliopancreatic diversion surgery during 2010 to 2015 and met the inclusion criteria were invited to participate in the study. The exclusion criteria were (i) biliopancreatic diversion procedure done within one year, (ii) age less than 20, or above 50 years, (iii) pregnant women, and (iv) non-Arabic-speaking patient.

Sample size was calculated using the simple random sampling technique with 5% confidence interval and the estimated sample size was 400. The response rate was 50%, and hence the total number of participants was 201. Participants' phone numbers were randomly selected from the medical records, and the target population was numbered 1 onwards. All even numbers were included (2, 4, 6, ... etc.). Participation was voluntary and the non-respondents were replaced as the odd numbers. The questionnaire consisted of two parts, the first with demographic questions followed by the questions related to quality of life (QoL) after bariatric surgery. All questions related to QoL were closed ended and the possible responses were "Never, a little bit, to some

extent, a lot, very much.”These responses were coded as 1 to 5, where “Never” showed as “1”, “a little bit” as “2,” “to some extent” as “3,” “a lot” as “4,” and “very much” as “5.” The median was used as cut off value to evaluate each participant’s response as “low” or “high.” Hence, if the response to any question was below the median value, it was considered as low and higher than median value was noted as high.

Statistical package for social sciences (SPSS V. 22) was used for data entry and analysis. Cross tabulations and graphs were used to present descriptive statistics, and for inferential statistics, chi-square test and logistic regression were used.

A total of 201 participants were enrolled in the study. Age was categorized in three groups of which 49 (24.4%) were in the range (20 to 30). The majority 82(40.8%) were in the range 31 to 40, and 70 (34.8%) in the range 41 to 50. The majority 128 (63.7%) were females, while only 73 (36.3%) were males. Six (3.0%) had education up to primary school level, the rest were educated up to intermediate, secondary, and university levels. Regarding the family income, 33 (16.4%) had an income < 5000 riyals, 65 (32.3%) were in the range 5000 to 10000, 77 (38.3%) in the range 11000 to 20000, and 26 (12.9%) had more than 100000 riyals.

Table 1: Impact of bariatric surgery on the psychological health and lifestyle of obese patients

	Never	A little bit	To some extent	A lot	Very much
Weight satisfaction after operation	15	14	60	60	52
	7.5	7.0	29.9	29.9	25.9
Side effects	16	30	56	50	49
	8.8	14.9	27.9	24.9	24.4
Discomfort in taking medications	37	26	46	54	38
	18.4	12.9	22.9	26.9	18.9
Improvement in chronic diseases	6	00	7	55	45
	5.3	0.0	6.2	48.7	39.8
Activity and vitality	22	54	51	52	22
	10.95	26.9	25.4	25.9	10.9
Satisfaction and outward appearance	14	16	68	70	33
	7.0	8.0	33.8	34.8	16.4
Sleep after the operation	1	24	56	91	29
	0.5	11.9	27.9	45.3	14.4
Depression after the operation	129	144	14	9	5
	64.2	21.9	7.0	4.5	2.5
Happy after operation	12	12	69	69	39
	6.0	6.0	34.3	34.3	19.4
Social relations	3	9	45	99	45
	1.5	4.5	22.4	49.3	22.4
Marital relationship	7	9	44	87	30
	4.0	5.1	24.9	49.2	16.9

The response “Never” is a negative score and rest of the responses are positive. Hence, the remaining four responses were summed up to evaluate the satisfaction rate corresponding to each question. Therefore, from table 1, weight satisfaction after the operation was high, 92.5%, sleep satisfaction was 99.5%, satisfaction with social relations was 98.5%. Depression levels after operation was 64.2%, showing lack of it. Discomfort in taking medications was the source of highest dissatisfaction (18.4%).It can be concluded that the majority (more than 90%) were happy after the

operation.Scores for different aspects were computed, and the mean and median were obtained.

Table 2: Evaluation of answers using median as a cut-off point for low and high

	Low	High
Weight satisfaction after operation	89 (44.3%)	112 (55.7%)
Side effects	102(50.7%)	99 (49.3%)
Discomfort in taking medications	109(54.2%)	92(45.8%)
Improvement in chronic diseases	68(60.2%)	45(39.8%)
Activity and vitality	76(37.8%)	125(62.2%)
Satisfaction with outward appearance	98(48.8%)	103(51.2%)
Sleep after the operation	81(40.3%)	120(59.7%)
Depression after the operation	173(86.1%)	28(13.9%)
Happy after operation	93(46.3%)	108(53.7%)
Social relations	57(28.4%)	144(71.6%)
Marital relationship	60(33.9%)	117(66.1%)

Table 2 shows that71.6% reported a high social relationship and 28.4% reported low social relations; 66.1% claimed an improvement in their marital relations while 33.9 mentioned a low level of satisfaction.Activity and vitality were high according to 62.2% and low according to 37.8%. Sleeplevels after the operation were high as per 59.7% while 40.3% reported poor sleep. Weight satisfaction after the operation was reported by 55.7%. Depression after the operation was non-existent for 86.1% indicating that patients were happy after the operation. It was found through the logistic regression analysis that demographic variables did not have any significant relation to the psychological aspect and lifestyle of those who underwent bariatric surgery. However, discomfort is higher among the older participants and is significant with a p-value 0.04 (see table 3). Furthermore, marital relationship is higher among old ages and was significant (p-value 0.02) (see table 3).

It was also observed that improvement in chronic diseases is higher in males than in females and was significant with a p-value of 0.01 (see table 4). In addition, improvement in chronic disease was associated with the level of education (p-value 0.004) (see table 5).Satisfaction with outward appearance is relatively higher among low income and is significant (p-value 0.002) (see table 6).

Table 3: Cross-tabulation of demographic characteristics with impact variables

Discomfort in taking medication	Age n(%)			Total
	20-30 years	31-40 years	41-50 years	
Never	9(18.4)	12(14.6)	16(22.9)	37(18.4)
A little bit	12(24.5)	5(6.1)	9(12.9)	26(12.9)
To some extent	9(18.4)	23(28.0)	14(20.0)	46(22.9)
A lot	12(24.5)	28(34.1)	14(20.0)	54(26.9)
Very much	7(14.3)	14(17.1)	17(24.3)	38(18.9)
Marital relationship				
Never	2(5.3)	5(6.8)	0(0)	7(4.0)
A little bit	2(5.3)	3(4.1)	4(6.2)	9(5.1)
To some extent	4(10.5)	22(29.7)	18(27.7)	44(24.9)
A lot	27(71.1)	33(44.6)	27(41.5)	87(49.2)
Very much	3(7.9)	11(14.9)	16(24.6)	30(16.9)

Table 4

Improvement in chronic disease	Gender n(%)		Total
	Male	Female	
Never	1(2.1)	5(7.7)	6(5.3)
To some extent	2(10.4)	5(3.1)	7(6.2)
A lot	17(35.4)	38(58.5)	55(48.7)
Very much	25(52.1)	20(30.8)	45(39.8)

Table 5

Improvement in chronic disease	Level of Education n(%)			Total
	Primary	Secondary	University	
Never	2(50)	1(1.8)	3(5.7)	6(5.3)
To some extent	0(0)	4(7.1)	3(5.7)	7(6.2)
A lot	1(25)	25(44.6)	29(54.7)	55(48.7)
Very much	1(25)	26(46.4)	18(34)	45(39.8)

Table 6

Satisfaction with outward appearance	Monthly income (SAR) n(%)				Total
	> 5	5-10	10-20	20 and more	
Never	6(18.2)	4(6.2)	3(3.9)	1(3.8)	14(7.0)
A little bit	5(15.2)	7(10.8)	1(1.3)	3(11.5)	16(8.0)
To some extent	4(12.1)	25(38.5)	32(41.6)	7(26.9)	68(33.8)
A lot	8(24.2)	25(38.5)	27(35.1)	10(38.5)	70(34.8)
Very much	10(30.3)	4(6.2)	14(18.2)	5(19.2)	33(16.4)

3. Discussion

The study aimed to examine the improvement in quality of life after biliopancreatic bariatric surgery. Participants were asked some questions to examine their QoL after surgery. It was observed that most of the participants were satisfied with their weight loss after surgery. It is reported in the literature that effect of biliopancreatic bariatric surgery in terms of weight loss in the long term is significant [7–9]; the present study results show the same trend. Matini et al.[9] from Tehran reported average weight loss of 30 kilograms after the surgery. Hence, this procedure is categorized as one of most useful interventions to reduce BMI in the case of severe obesity.

Obese people also suffer from depression and anxiety. Compared to the general population, a high prevalence of depression and anxiety was observed among obese people [10]. Onyike et al. reported that obese patients with BMI ≥ 30 and ≥ 40 kg/m² were 1.8 and 5 times, respectively, more likely to have depression compared to normal persons [11]. Lee et al. also supported the findings of Onyike et al. by reporting that anxiety and depression is more common among patients with obesity [12]. It was reported in the literature that a higher BMI is associated with depression and anxiety [9,13]; hence, depression can be controlled by reducing the BMI. Therefore, evaluation of the patients' responses in the present study revealed that through the reduction in their BMI, their level of depression also reduced and 86% of the participants agreed that their depression levels had reduced after the surgery.

Participants of the study were also more satisfied with their physical life after surgery. Their sleeping habits improved and overall, they were more active. Improvement in their social relationships were reflected in an improvement of the mental health of the patients as well. As biliopancreatic bariatric surgery is a physical intervention, the physical

gains from it to improve QoL are more than mental QoL. Due to the major change in body appearance after surgery, people usually more satisfied with their body image [14]. This change is correlated with improvement in their body image and weight loss [14]. In this study, patients with lower income were more satisfied with their outward appearance when compared with people of a high income level.

Weight loss of the study participants was not included in the findings and this can be considered one of shortcomings of the study. Eating habits were also not included in the study and only few questions were asked to evaluate physical and mental health of the patients after surgery. Pattern in weight loss was also not studied. Either it showed a continuous decrease or began to increase after a while.

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