

Assessment of Bariatric Surgery Patients in Lebanon: A Cross-Sectional

Patients suffering from chronic vomiting should consider proton-pump inhibitors (PPIs) use [14].

In the absence of assessment data of bariatric surgery patients in Lebanon and since these surgeries are considered one of the fastest growing operative procedures worldwide [5], we conducted this study. The main objective of this study is to assess weight variation and supplements and medication use post bariatric surgeries and the factors that may affect such variation among the Lebanese patients.

Materials and Methods

Study design and setting

This is a descriptive, prospective, cross-sectional observational study conducted all over Lebanon between February and May 2017. The sample was drawn randomly from all the districts of Lebanon that includes the capital Beirut and four other districts (Mount Lebanon, North, Beqaa, and the South). Out of 341 patients approached, 300 participants were eventually enrolled in the study with a refusal rate of 12%. The study was approved by the ethical committee at the Lebanese International University. Informed consents were obtained from all participants prior to enrolment. However, data were stripped of any personal identified information.

Data collection

A data collection sheet to obtain the needed information was established. This sheet retrieved information regarding patient demographics (gender, age, residence, educational level, socio-economic status and physical activity) in bariatric surgeries patients.

patients

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Table 1: Sociodemographic and socioeconomic characteristics of the participants

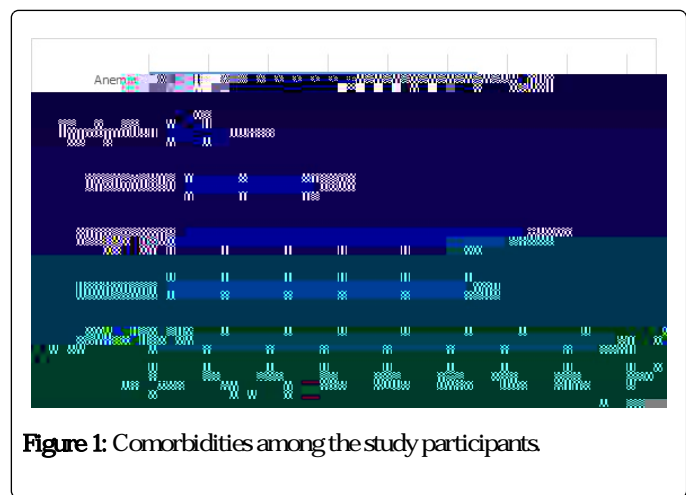


Figure 1: Comorbidities among the study participants

Type of bariatric surgery

Table 2 reveals the type of bariatric surgery the patients had performed.

Variable	N Percentage (%)
Surgery	
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Table 2 Surgery type among participants

Three types of surgeries were reported with sleeve gastrectomy being the most performed (57.7%), followed by roux-en-y gastric bypass (27%) and gastric banding (15.3%).

Weight variation	Gastric banding Percentage (%)	N	Sleeve gastrectomy Percentage (%)	N	Roux-en by pass Percentage (%)	N	Total N Percentage (%)	P-value
€ÈFÈÁ*	HÁÇHÈÍD	1	I ÁÇÍÈD	1	FÍÇFGÈÍD	1	ìÁÇGÈÍD	€ÈÈÈÈF
FFÈGÈÁ*	JÁÇHÈHD	1	FHÁÇI ÈFD	1	íÁÇFÈÍD	1	GÍÁÇJD	
GFÈHÈÁ*	FFÁÇFÈÍD	1	I íÁÇTÈGD	1	FÈÁÇFÈGD	1	î íÁÇGGD	
HFÈIÈÁ*	FHÁÇFÍD	1	íHÁÇTÈÍD	1	F íÁÇFÈÍD	1	ìFÁÇGÍD	
IFÈIÈÁ*	HÁÇÍÈÍD	1	HGÁÇÍÈÍD	1	F íÁÇHÍD	1	íHÁÇFÈÍD	

Weight variation

Among the studied participants, only 31 (10.3%) reached their ideal body weight (IBW) post-surgery (Figure 2).

However, weight loss was prominent among all participants with the most (27%) having weight variation between 31-40 kg post-surgery (Table 3). Weight variation was not consistent among the different bariatric surgeries. Weight loss was more common among sleeve gastrectomy patients for all ranges of weight variation except for >50 kg weight loss category where roux-en-Y bypass was associated with more weight loss (p<0.0001).

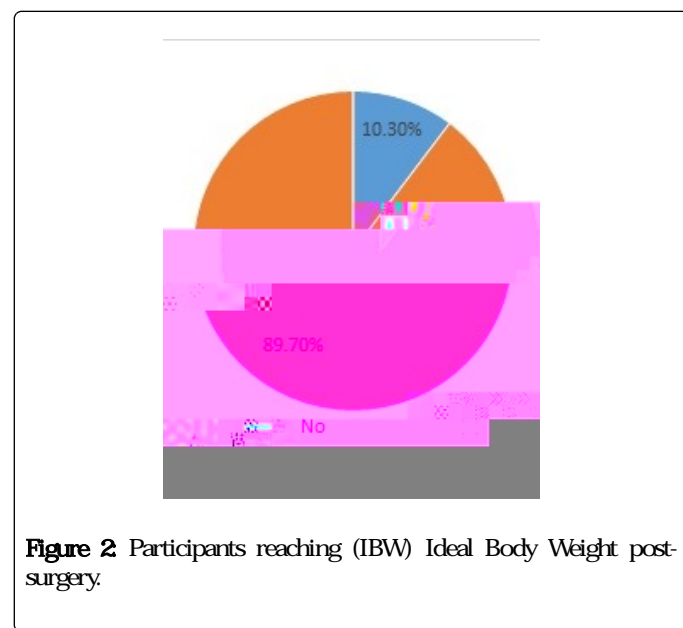


Figure 2 Participants reaching (IBW) Ideal Body Weight post-surgery.

Different factors were significantly associated with weight variation. Those with higher socio-economical levels (exp =7.319, 95% CI 1.477-36.265, P=0.015), higher educational levels (exp =5.967, 95% CI 1.386-25.683, P=0.016), smokers (exp =5.772, 95% CI 1.471-22.650, P=0.012) and performed sleeve gastrectomy (exp =8.229, 95% CI 2.101-32.229, P=0.002) were significantly more likely to have more weight loss.

Níè*	ÌÀÇFÈÌD	GÍÁÇIÈD	HGÁÇI JÉGD	Í ÍÁÇGFÈÌD	
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Table 3 Weight variation among the different bariatric surgeries.

Supplements and medication use

Diferent medications and supplements were used by the participants post bariatric surgery. Among the mineral and vitamin supplements iron (42.3%) was the most commonly used, and among medications PPIs (42.3%) were the mostly used ones. Iron and calcium

were used more among sleeve gastrectomy patients and roux-en-Y bypass patients (p=0.0001). While Vitamin B12 was more used among roux-en-Y bypass patients (p=0.0001), PPIs were more consumed by sleeve gastrectomy patients (p=0.009) (Table 4).

Vitamin or supplement	Gastric binding Percentage (%)	N	Sleeve gastrectomy Percentage (%)	N	Roux-en by pass Percentage (%)	N	Total N Percentage (%)	p-value
Iron	GFÁÇFÍÈÌD		ÍHÁÇIFÈÌD		ÍHÁÇIFÈÌD		FGÍÁÇIGÈHD	€€€€F
Calcium	FFÁÇFHÈÌD		HIÁÇIGÁD		HIÁÇIIEÌD		ÌÍÁÇGÌD	€€€€F
B12	FEÁÇFGÈHD		GÍÁÇHIÈÌD		I HÁÇIHÈFD		ÌÍÁÇGÌD	€€€€F
B9	ÌÁÇGÈÈÌD		GÈÁÇÍFÈHD		FFÁÇGÍÈGD		HJÁÇFHHD	€ÍÍ€
B Complex	ÍÁÇJÈÌD		HFÁÇÍIEÌD		FÍÁÇHGÈFD		ÍHÁÇFÍÈÌD	€HÍH
PPI	FFÁÇÍÈÌD		Ì ÍÁÇÍÈÈFD		HGÁÇGÍÈGD		FGÍÁÇIGÈHD	€€€J
H ₂ Blockers	HÁÇIGÈJD		GÁÇGÍÈÌD		GÁÇGÍÈÌD		ÍÁÇGÈHD	€F€€
NSAIDs	€ÁÇÈD		FFÁÇÍÈD		FFÁÇÍÈD		GGAÇTÈHD	€€€F
Oral contraceptives	€ÇÈD		HÁÇÍÈÁD		GÁÇÍÈD		ÍÁÇFÈÌD	€ÍÍÍ

Table 4 Supplements and medication use post bariatric surgery.

Discussion

Obesity stands out as one of the biggest public health issues with bariatric surgery being a viable and important option for management. It is estimated that more than 340000 bariatric operations were done in 2011 [16]. T is study aimed to assess Lebanese bariatric surgery patients in terms of weight variation, supplements and medication use.

Patients characteristics

More than two-third of the participants (69%) reported the absence of moderate to vigorous physical activity per day. Actually, Evans et al. compared weight loss in post-bariatric gastric bypass surgery patients divided into two groups- those that reported at least 150 minutes of moderate intensity per week and those that reported less than 150 minutes [17]. Weight loss was significantly greater in the first group and the difference between groups was about 6% greater excess weight loss at 6 and 12 months post-surgery [17]. Such results necessitate improving awareness among the participants regarding the importance of physical activity in enhancing weight loss.

About 14% of the participants reported alcohol consumption. An important notice to the psychological changes patients undergo after the surgery revealed an increase in their sensitivity to alcohol, where those patients experience higher concentrations of ethanol than a normal individual [18]. T is is another domain at which health care providers should intervene to counsel properly post-bariatric patients to avoid any complications.

T e most common comorbidities among our participants were hypertension (15%), followed by Diabetes Mellitus (11.3%) and anaemia (11%). T e results are comparable to Backes et al study in 2016 which revealed that the most common comorbidities during the postoperative phase were hypertension (29.7%), followed by diabetes (6.3%) and dyslipidemia (6.3%) [19]. Unlikely, the percentage of those with hypertension were lower in our study as compared to Backes et al study but diabetes percentage was higher in the Lebanese bariatric population [19].

Type of surgery

In consistence with our results, the American Society for Metabolic and Bariatric Surgery (ASMBS) reported that the most common bariatric surgery procedures are gastric bypass, sleeve gastrectomy, and adjustable gastric band [20]. Sleeve gastrectomy was the most performed (57.7%) bariatric surgery in our study, followed by roux-en-y gastric bypass (27%) and gastric banding (15.3%). Unlikely, in Backes et al study, the surgical technique most of en used was gastric bypass (91.4%) [19].

Weight variation and associated factors

In this study weight loss was more common among sleeve gastrectomy patients except for >50 kg weight loss category where roux-en-Y bypass was associated with more weight loss (p<0.0001). Our results are not consistent with Maciejewski et al. study [21] where patients undergoing roux-en-Y gastric bypass lost 16.9% (95% CI, 6.2%-27.6%) more of their baseline weight than patients undergoing

gastric banding and 9.7% (95% CI, 0.8%-18.6%) more than patients undergoing sleeve gastrectomy. Further larger scale studies are needed in Lebanon to assess such differences.

Different factors were significantly associated with more weight

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