The Impact of COVID-19 on Medium Term Weight Loss and Comorbidities in Patients Undergoing Bariatric Surgery and Its Association with Psychological Wellbeing

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Introduction

The COVID-19 epidemic imposed significant stressors on individuals and changed how medical care is delivered. The affect that this stress has placed on the field of bariatric surgery and the associated outcomes is not well established.

Methods

A retrospective review of a prospectively collected database from a single academic institution was conducted. Weight loss and comorbidity outcomes were compared between a cohort of patients operated on during the pandemic and a matched group operated on prior to COVID-19. GAD-7 and PHQ-9 questionnaires were used to assess for anxiety and depression, respectively.

Results

A total of 329 and 155 patients were enrolled in the pre-pandemic and COVID-19 groups respectively. There were no significant differences in pre-operative weight or comorbidities. Post-operatively, the weight was comparable at all time points out to one year. Comorbidity resolution rates were higher in the control cohort. There was no difference in objective measures of anxiety and depression when comparing the two groups.

Table 1: Patient demographic data of control and COVID-19 groups

Variable	Control group (329 pts)	COVID-19 group (155 pts)	p-value
Type of surgery	127 RYGB / 202 SG	82 RYGB / 73 SG	0.030
Gender	47 Male / 282 Female	32 Male / 123 Female	0.077
Average age	42.6 years	44.9 years	0.029
DM	84 (25.5%)	38 (24.5%)	0.810
HTN	161 (48.9%)	77 (49.7%)	0.879
HLD	113 (34.3%)	62 (40.0%)	0.227
OSA	117 (35.6%)	60 (38.7%)	0.502
Urinary incontinence	41 (12.5%)	10 (6.5%)	0.044

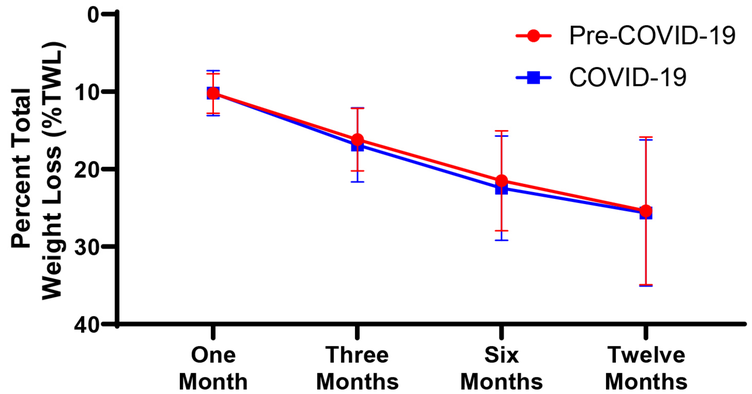
Table 2: Weight measurements at first visit, preoperative appointment, and BMI. GAD-7 and PHQ-9 scores between cohorts listed.

Pre-operative Variables	Control Group	COVID-19 Group	p-value
First weight (kg)	132.6	134.1	0.577
Pre-Op weight (kg)	126.3	126.8	0.841
BMI (kg/m^2)	45.4	44.9	0.437
GAD-7 score	1.65	1.78	0.625
PHQ-9 score	2.31	2.01	0.327

Table 3: Resolution of comorbidities at 6 months postoperative between control and COVID-19 patients.

Comorbidity	Control Group	COVID-19 Group	p-value
Diabetes Mellitus	62/77 (80.5%)	19/34 (55.9%)	0.007
Hypertension	90/146 (61.6%)	31/65 (47.7%)	0.059
Sleep Apnea	34/107 (31.8%)	10/49 (20.4%)	0.143
Hyperlipidemia	52/104 (50.0%)	20/56 (35.7%)	0.083

Figure 1: Patient percent total weight loss (%TWL) postoperatively from surgery between day of surgery and postoperative follow up appointments.



	One Month	Three Months	Six Months	Twelve Months
Pre-COVID-19	10.2%	16.2%	21.5%	25.4%
COVID-19	10.2%	16.9%	22.5%	25.7%
p-value	0.865	0.141	0.185	0.868

Discussion

The COVID-19 pandemic has fundamentally changed how society and medical systems function. Focusing on pre-operative dietary training and screening for inadequately managed psychological comorbidities yielded similar weight loss outcomes notwithstanding the significant societal and individual stressors with which patients were faced.