



Social support provided to bariatric surgery patients through a facebook group may improve weight loss outcomes

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Abstract

Background Patients' social support has been shown to impact outcomes after bariatric surgery. We have previously shown that a Facebook group administered by bariatric providers offers an effective alternative social support mechanism to in-person support groups, with higher patient participation. Our aim was to determine whether participation in this Facebook group could improve patient outcomes after bariatric surgery.

Methods After institutional board approval, our center's Facebook group members were electronically surveyed about their perceived value of group participation and their Facebook group usage frequency. We also collected patient age, sex, insurance, preoperative weight, type of procedure, hospital stay, postoperative complications, and weight loss from the electronic medical record. To assess the impact of Facebook group participation we compared patient outcomes between "frequent users" (those checking the Facebook group's activity at least once a week), "infrequent users", and a control group of all patients operated on during the year prior to the establishment of the Facebook group. The groups were compared after adjusting for potential confounding factors.

Results 250 out of 1400 Facebook group patients responded to the survey (18%). 195 patients were frequent and 55 were infrequent users. Outcomes were compared with 211 control patients. The groups did not differ in their baseline characteristics apart from their sex. Frequent users had a higher weight loss compared to the other groups up to 2 years postoperatively but no difference in the overall complications. On multivariable analysis, frequency of Facebook use was the main factor associated with 0.5-, 1-, and 2-year weight loss.

Conclusion Frequent participation in a Facebook support group after bariatric surgery was associated with improved early weight loss outcomes. If additional longer-term studies confirm our findings, offering similar social support groups may become essential after bariatric surgery, especially during times of social isolation when in-person social support meetings may not be feasible.

Keywords Facebook · Bariatric surgery · Social support · Weight loss

The prevalence of obesity in the USA has been growing rapidly in the last few decades, and becoming a lasting public health crisis [1]. While there are many potential methods to

aid obese adults in losing weight, the most effective treatment currently available is bariatric surgery [2].

Unfortunately, the success of surgery is not equal in all patients; outcomes are variable and influenced by multiple factors, with the social support of bariatric patients being one of the main contributors [3]. The main sources of social support for bariatric surgery patients are friends or family [3], as well as support from healthcare providers through engagement with postoperative support groups, such as those provided by the bariatric centers following bariatric surgery [4, 5]. The known efficacy of social support as part of the bariatric surgery treatment plan has led to support groups being instated in all bariatric centers accredited by

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the American Society of Metabolic and Bariatric Surgery (ASMBS) for the last decade [6]. However, although bariatric center support groups are the simplest way to ensure all patients receive a similar basic level of support in their postoperative journey, as family or friend support is impossible to guarantee, some patients have indicated that they find these groups inconvenient to attend as they live too far from the center where the groups are being held or are too busy to attend them [7].

Many centers have identified this issue and have responded by creating online support groups and forums where postoperative patients can engage with each other for social support. These forums also often give patients convenient access to their healthcare providers to ask questions and receive resources and are popular among patients due to the appealing ease of access associated with online groups [8]. However, the content of these groups has been recently criticized regarding to its accuracy which has resulted in mixed levels of confidence about the usefulness and trustworthiness of the posts [8].

To tackle this challenge, our program has run a carefully moderated private Facebook support group since 2015, the patients of which were surveyed recently to gauge upon their perception on whether the Facebook group provided useful or adequate social support to them in the years following their procedures. Our survey discovered that the Facebook group was a great addition to their social support “network” [7].

Patient participation in the Facebook group was found to be higher and more consistent than in-person support groups, and the integration of Facebook or other accurate and monitored online support groups with traditional bariatric support groups may prove invaluable to our patients, especially during times of social isolation.

However, the question remains on whether the social support from such an online group affects bariatric surgery outcomes. Thus, this study aimed to assess whether patient participation in our Facebook support group would impact their outcomes following bariatric surgery.

Methods

Facebook group administration

In 2015, our bariatric center created a healthcare provider-based Facebook group which can be accessed only by our own patients. The group allows patients to share similar experiences and ideas, have constant access to copies of forms such as our program’s meal plan, and receive answers to questions directly from the health care providers who supervise the group’s activity (such as dietitians, physician assistants, and bariatric surgeons). Additionally, all posts

are pre-reviewed before being uploaded by one of our health care providers who monitors the group’s activity daily. The thematic analysis of our group can provide further information about the group and its administration [7].

Study design

After obtaining institutional review board (IRB) approval we proceeded with the participants’ recruitment. We surveyed our patients about their perceived usage frequency, and allocated them into two groups based on their responses: “frequent users”, who routinely use the Facebook group at least once a week, and “infrequent users”, who used it less than once a week. In addition, a third “control” group was generated, which was composed of patients who were operated on one year before the launch of the Facebook group and thus were not group members. Only patients from the previous year were selected to reduce bias. We also surveyed the patients about their perceived value of the Facebook group and their answers are reported on a Likert scale similarly to our previous work [7].

Statistical analysis

ANOVA was utilized for the comparison of the continuous variables between the three groups (age, hospital stay, preoperative body-mass-index (BMI), and weight loss, which was defined as the difference between pre-surgery BMI and follow-up BMI), and a chi-square for the comparison of non-continuous variables such as sex, type of insurance (private vs federal), type of procedure (laparoscopic sleeve gastrectomy vs laparoscopic gastric bypass), and overall complication rate (reoperations and endoscopic interventions). Finally, a multivariable analysis was conducted as well, considering all the potential confounders (age, type of procedure, sex, type of insurance) using SPSS 26.0 (SPSS Inc., Chicago, IL).

Results

A total of 250 out of 1400 Facebook group patients responded to the survey (18%), out of whom 195 patients were frequent and 55 were infrequent users. Our control group of patients consisted of 211 patients. The groups only differed in their sex composition as can be seen in Table 1. All groups had similar preoperative BMI, hospital stay, and complication rate up to 3 years postoperatively. However, the frequent users group had superior weight loss in the first 6 months, 1st, and 2nd postoperative year even after adjusting for all potential confounders. The third-year weight loss did not reach statistical significance (Table 2).

Table 1 Baseline characteristic group comparisons

		Frequent users (<i>N</i> = 195)	Infrequent users (<i>N</i> = 55)	Control (<i>N</i> = 211)	<i>p</i> -value
Age (mean ± <i>SD</i>)		45.1 ± 11.2	43.8 ± 10.2	45.6 ± 11.2	0.582
Females (%)		92.7%	87.3%	81.2%	<0.001
Private insurance		67.0%	67.4%	63%	0.667
Procedure (%)	LRYGB	128 (65.6%)	35 (63.6%)	137 (64.9%)	0.281
	LSG	58 (29.7%)	13 (23.6%)	57 (27%)	
	other	9 (4.6%)	7 (12.7%)	17 (8.1%)	
Preoperative BMI		47.0 ± 8.1	45.6 ± 6.1	45.9 ± 7.6	0.262

LRYGB laparoscopic Roux-en-Y gastric bypass, *LSG* laparoscopic sleeve gastrectomy, *SD* standard deviation

Table 2 Outcome differences among groups

	Frequent users (<i>N</i> = 195)	Infrequent users (<i>N</i> = 55)	Control (<i>N</i> = 211)	<i>p</i> -value
6-month ΔBMI	11.7 ± 2.9 (<i>N</i> = 166)	10.6 ± 3.2 (<i>N</i> = 39)	10.7 ± 3.2 (<i>N</i> = 166)	0.046
1st year ΔBMI (mean ± <i>SD</i>)	14.8 ± 4.7 (<i>N</i> = 122)	13.1 ± 4.4 (<i>N</i> = 39)	13.2 ± 4.7 (<i>N</i> = 149)	0.017
2nd year ΔBMI (mean ± <i>SD</i>)	14.3 ± 5.0 (<i>N</i> = 47)	12.2 ± 6.0 (<i>N</i> = 26)	12.7 ± 5.7 (<i>N</i> = 128)	0.048
3rd year ΔBMI (mean ± <i>SD</i>)	12.3 ± 4.9 (<i>N</i> = 21)	10.0 ± 7.0 (<i>N</i> = 15)	11.0 ± 5.8 (<i>N</i> = 108)	0.226
Overall 3 year complications	17.7% (<i>N</i> = 144)	17.9% (<i>N</i> = 33)	18.1% (<i>N</i> = 140)	0.931

BMI body-mass-index, *SD* standard deviation, *ΔBMI* (follow-up BMI) – (preoperative BMI)

The facebook group users reported that it helped them overall do well with their procedure (3.3/5). Specifically, it provided them emotional support (3.5/5), and useful information (3.7/5) while avoiding unnecessary anxiety from the various experiences of their group peers (3.5/5). Additionally, they felt understood by others (3.9/5) and connected with other people who had similar experiences (3.1/5) which they reported may have helped them have better weight loss retention postoperatively.

Discussion

Social support is an important parameter that leads to more favorable outcomes following bariatric surgery, and thus in-person social support groups have been mandated to all accredited bariatric programs. However, in our virtual era and more importantly during times of social isolation such as during the COVID-19 pandemic, virtual social support groups are more valuable than ever. The purpose of this study was to investigate the clinical importance that our virtual support group is providing to our bariatric surgery patients. Results showed that the use of our program's Facebook group significantly improved patient weight loss for the first two years after surgery. We did not identify any significant difference pertaining to the longer-term outcomes such as 3rd year weight loss, which might be attributed to

the follow-up attrition rate which significantly decreased our sample size. Additionally, we discovered that social support through such groups did not impact complication rates, which are likely impacted more by surgical technique.

Our results validate the bariatric surgery social support literature which highlights social support's importance to postoperative patients. A past systematic review of 10 studies showed a positive correlation between social support and postoperative weight loss [9]. Additionally, the literature shows that apart from family, friends, and significant others, nurses and supportive staff are the most important pillar of social support for patients, given their frequent contact with the bariatric patients; the design of our group intends to take advantage of this close relationship, and is thus mainly run by our nurses, MAs, and dieticians [10]. Moreover, it seems that increasingly more groups are implementing eHealth interventions to improve post-bariatric surgery outcomes such as weight loss by increasing the social support of their patients; as shown by a recent systematic review of 17 studies, both eHealth intervention and control groups lost weight across the included studies, and eHealth approaches were found to be as effective or more effective than the control group in terms of weight loss. However, it should also be noted that there exist concerns suggesting that Facebook use is associated with lower well-being [11] which necessitates additional research on the use of Facebook for social support vs. "real-world" contacts in the bariatric surgery population.

Our findings have several implications for bariatric surgery practice. They suggest that a healthcare provider monitored Facebook group could be an important resource for those bariatric patients who make active use of it. It can help patients to feel more supported, learn from their peers' experiences, and have their questions answered, which enhances their feelings of support [7]; and perhaps most importantly, the conjunction of this perceived support and resources can help them have more favorable postoperative outcomes such as greater weight loss. Also, these groups provide additional benefits over traditional scheduled social support group gatherings because they make social support available to more patients by eliminating the obstacle of distance through the online medium and eliminating the obstacle of fixed clinic hours by providing almost 24 h support.

The main limitations of our study come from its retrospective nature. Firstly, it was impossible to retrospectively assess the baseline social support of each patient, which has been shown to impact postoperative weight loss [12], and thus we could not correct for it in our multivariable analysis. Additionally, we had a high follow-up attrition rate after the second year which inhibits us from identifying any potential weight loss benefit after 3 or more years out of surgery. Finally, we had a low response rate to the online questionnaire (18%). This might expose our findings to selection bias as the respondents might have been only the members who are more engaged with the group.

Conclusion

Facebook groups provide strong social support to bariatric surgery patients that may lead to superior early weight loss. Such groups are especially important during times of social isolation when in-person meetings may not be feasible. However, further experimental studies are required to identify the importance of such groups in long-term weight loss and to account for discrepancies in the patients' overall social support outside of these groups.

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Declarations

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