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BRIEF COMMUNICATION

Patient Recall of Education about the Risks of Alcohol Use Following Bariatric Surgery

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Abstract

Patients who undergo bariatric surgery are at increased risk of developing alcohol problems. The purpose of this study was to evaluate whether patients who underwent bariatric surgery recalled receiving education about alcohol prior to having surgery and to investigate their alcohol use patterns. Patients ($N = 567$) who underwent bariatric surgery completed a survey regarding their knowledge of risks related to post-surgical alcohol use. Although most patients recalled receiving education about abstinence from alcohol after surgery, at least one-third of patients do not appear to understand the risks involved with alcohol consumption, suggesting that patients did not retain the information. Despite recalling receiving education, many patients still consumed alcohol after surgery. It appears that additional interventions are needed to decrease alcohol use after bariatric surgery.

Keywords Bariatric surgery · Alcohol use · Education

Introduction

Patients who undergo bariatric surgery are at increased risk of developing alcohol problems following surgery [1–6]. Although bariatric surgery programs encourage abstinence or extreme moderation of alcohol use [7], there is a drastic increase in rates of alcohol use over time, from 20% of patients consuming alcohol at 1 month post-surgery to over 63% at 2 years post-surgery [8]. The frequency of alcohol consumption also increases over this time period [8]. Prior to surgery, approximately 8% of patients endorse an alcohol use disorder (AUD), which is similar to 6% found in the general population [1, 9]; however, this steadily rises over time with 10–12% meeting criteria for an AUD at 2 years, 18.4% at 3 years, and 20.8% at 5 years [1–6]. As many as one-third to half of AUD cases are new onset after bariatric surgery [4, 10]. Patients may be under reporting their alcohol use at the pre-surgical evaluations, but there are also several other theories as to why patients can develop an AUD following surgery. Patients may experience a transfer of addiction from food to alcohol and the metabolism and absorption of alcohol changes after surgery [11, 12]. As a result of these physiological changes, blood alcohol concentrations increase faster, peak higher, and take longer to reach zero [13–16].

Given this research regarding the risk of developing an AUD following bariatric surgery, the American Society for Metabolic and Bariatric Surgery (ASMBS) released a statement indicating that patients should be aware that they are at long-term risk of developing AUD after bariatric surgery [17]. Additionally, national guidelines recommend that patients are carefully assessed and managed prior to surgery if they are identified as high risk for alcohol problems [18]. Despite these recommendations, the majority of patients continue consuming alcohol after bariatric surgery [19]. It is unclear why patients consume alcohol after surgery. It is possible that bariatric surgery programs are not providing enough education or that patients do not understand the education that is being provided. The purpose of this study was to evaluate whether patients who underwent bariatric surgery recalled receiving education about alcohol prior to having surgery and to investigate their alcohol use patterns.

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Methods

Patients and Procedure

All patients who underwent bariatric surgery from 2014 to 2017 at a single institution were emailed an invitation to complete a brief, online survey in March–April 2018 regarding their knowledge of risks associated with alcohol use and patterns of current alcohol consumption. Patients were excluded if this was not their first bariatric surgery or if they were not able to receive the email (i.e., the email was undeliverable). Although not a requirement of all bariatric surgery programs, at our institution during the pre-surgical orientation and evaluation, members of the bariatric surgery program routinely provide education to patients about the risks of alcohol use after surgery and state that lifetime abstinence from alcohol is a requirement. Specifically, to begin the program, each candidate attends a mandatory orientation with the program manager in which patients are educated that the program requires lifetime abstinence from alcohol and risks of alcohol use. All patients also receive this education during the required pre-surgical psychological evaluation and those identified as high risk (i.e., history of alcohol use disorder, binge drinking, using alcohol as a coping strategy) are also provided with a handout regarding the risks of alcohol use after surgery.

Measures

Alcohol use

Participants were asked whether they consumed alcohol since undergoing surgery. If so, they were asked the time at which they first consumed alcohol after surgery and if they consumed alcohol within the past month. These participants were also asked adapted questions from the Alcohol Use Disorders Identification Test (AUDIT-C) [20], including frequency of alcohol use, standard drinks in a typical day, and the number of times they consumed more than six drinks in the past month. Scores of 3 or greater for women and 4 or greater for men may indicate a potential alcohol use disorder.

Education All participants were asked whether they remembered receiving education from the bariatric program regarding the risks of alcohol use following surgery. Participants were also asked to provide a qualitative response regarding what they understand about how alcohol can affect their body after surgery. Participants were instructed to write in "Unsure" if they did not know how alcohol can affect the body after surgery. These responses were coded into the following categories by two independent raters with 100% agreement: (1) identifying that there are changes in metabolism or absorption of alcohol and/or that there is an addiction risk; (2) addressing that alcohol has unnecessary calories/sugar and/or can contribute to weight gain; (3) the participant stating that he or she does not drink; (4) stating that patients should not drink after surgery; (5) other or multiple reasons listed that was not related to the first category; (6) the participant wrote in "unsure"; and (7) the response was left blank.

Results

Participants ($N = 567$) tended to be middle-aged, Caucasian, females, which is representative of the patients who undergo bariatric surgery at this institution (Table 1). More than half of patients consumed alcohol since undergoing bariatric surgery, of which, the majority consumed alcohol within the past month (Table 2). Of those who had alcohol in the past month, nearly 10% of participants had more than six drinks on at least one occasion (Table 2). More than half of patients who consumed alcohol post-surgery did so within the first year after surgery (Table 2). For the month prior to the survey, 8.3% ($n = 47$) of participants endorsed a score indicative of a potential alcohol use disorder.

Most of the patients (93.1%, $n = 528$) recalled receiving education about the risks of alcohol use prior to having surgery. Close to half of participants identified that alcohol affects the body differently after surgery with regard to how the body metabolizes the alcohol; however, more than one-third of participants were unsure how alcohol could impact the body differently post-surgery (Table 2).

Recalling receiving education prior to surgery was not related to whether a patient consumed alcohol after surgery (χ^2 (1) = 1.00, $p = .32$), consumed alcohol within the past month (χ^2 (1) = .20, $p = .66$), or consumed more than six drinks in a sitting in the past month (χ^2 (1) = .12, $p = .73$). Those who reported knowing about changes in the metabolism/absorption of alcohol after surgery were just as likely to consume alcohol after surgery (χ^2 (1) = .08, $p = .78$), consume alcohol in the past month (χ^2 (1) = 2.44, $p = .12$), and

Table 1 Participant demographics

Age, years	*M* 45.73	SD 10.33
	%	*n*
Gender		
Female	83.9	476
Male	15.7	89
Unidentified	0.4	2
Race		
Caucasian/White	53.4	303
African American/Black	31.9	181
Other/multiracial	1.9	11
Missing	12.7	72

Table 2 Post-surgical alcohol use

	%	n
Used alcohol since undergoing surgery	57.7	325
Consumed in the past month	72.9	237
Consumed more than 6 drinks in a sitting in the last month	9.7	23
Time at first drink post-surgery		
Within 1 month	1.2	4
1–6 months	15.1	49
6 months–1 year	38.5	125
1–2 years*	35.1	114
After 2 years*	10.2	33
Probable alcohol use disorder in the past month	8.3	47
Response for how alcohol affects the body post-surgery		
Metabolism/absorption/addiction	42.2	239
Calories/sugar	5.8	33
"I do not drink"	1.8	10
"Shouldn't drink"	1.4	8
Other/multiple (not related to metabolism of alcohol)	8.6	49
Unsure	34.0	193
Left blank	6.2	35

*Not all patients were greater than 1 year post-surgery

consume more than six drinks in a sitting in the past month (χ^2 (1) = .09, p = .76) as those who were unsure as to how alcohol affects the body after surgery.

Discussion

Most patients recalled receiving education about the risks of consuming alcohol after bariatric surgery, yet, the majority of patients still consumed alcohol after undergoing surgery. This finding supports previous research, conducted prior to the ASMBS statement about post-surgical alcohol use, that suggested most patients consume alcohol after bariatric surgery [19]. Therefore, simply recommending patients to be abstinent from alcohol after surgery is not sufficient.

It is possible that patients understand the recommendation for abstinence, but may not comprehend the reasoning behind this recommendation. Over one-third of patients reported that they are unsure how alcohol affects the body after bariatric surgery, and even more left their response blank, also suggesting that they do not understand the risks involved with post-surgical alcohol consumption. More intensive education regarding the risks may be needed. One study piloted a 90-min pre-surgical educational intervention for patients who were high-risk for post-surgical alcohol problems (i.e., those with a substance abuse history or high levels of social drinking) [21]. This intervention was successful in increasing patients' understanding about the risks of post-surgical alcohol consumption; however, alcohol use outcomes have not yet been reported.

Alternatively, it is possible that understanding the risks of alcohol use after bariatric surgery does not alter drinking behavior. In the current study, those who were able to identify changes in metabolism/absorption and/or risk of addiction were just as likely to consume alcohol as those who reported they were unsure. Although there is some research to suggest predictors of those at higher risk for alcohol problems following bariatric surgery [1, 2, 10], it is still difficult to predict who may develop an AUD because of the high prevalence of new onset AUDs [4, 10]. Interventions beyond education are needed to decrease alcohol use after bariatric surgery. All patients should be targeted because of the current lack of identifiers for determining who is at high risk.

Although this study is novel in that we explored how education on abstinence influences post-surgical alcohol use, there are limitations. First, we do not know for certain that patients were unaware of the alterations in alcohol metabolism or risk for addiction. Patients may have known about the physiological changes but did not report them in the open-ended response. Second, the rates of alcohol consumption may be underestimated. Not all patients were 1–2 years post-surgery, and per findings from this study, many patients begin drinking after the 1-year mark. Therefore, many patients who reported not consuming alcohol after surgery may still go on to consume alcohol in the next year. Additionally, our rate for potential alcohol use disorder was only for the previous month. Third, in the current study, we did not evaluate other variables that could influence post-surgical alcohol use (i.e., pre-surgical history of substance use, psychiatric diagnoses, and type of bariatric surgery). Future research should evaluate this.

Despite receiving education about abstinence from alcohol after bariatric surgery, many patients continue to consume alcohol. Further, widely implemented interventions are needed to decrease alcohol use after surgery to reduce the prevalence of post-surgical AUDs.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest..

Ethical Approval Statement All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Statement Informed consent was obtained from all individual participants included in the study.

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