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Original article

Postoperative marijuana use and disordered eating among bariatric surgery patients

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Abstract

Background: Current literature is scarce in documenting marijuana use after bariatric weight loss surgery (WLS).

Objectives: The objective of this study was to explore the association among marijuana use patterns, disordered eating, and food addiction behaviors in patients 2 years after WLS.

Setting: A university hospital in the United States.

Methods: Participants (N = 50, mean age 28 y, standard deviation = 5.8) were administered a structured assessment that included the Addiction Severity Index, Yale Food Addiction Scale, Eating Disorder Examination Questionnaire, and Disordered Eating Questionnaire. Marijuana use was defined based on the Addiction Severity Index as current use (within 30 d), recent use (use in last year), and increased use (increased use since surgery). Data were analyzed using Fisher's exact tests and linear regression methods adjusting for age, gender, race/ethnicity, time since surgery, and change in body mass index.

Results: The majority of the sample was female (76%) and underwent Roux-en-Y gastric bypass (62%). Eighteen percent (18%) of the sample reported current marijuana use; 38% reported recent use; and 21.4% reported increased use post-WLS. A loss of controlled food intake was associated with current (P = .02) and increased post-WLS use (P = .01). Increased use and/or regular marijuana use predicted higher scores on eating disorder subscales compared with respective counterparts (P < .05). Current use did not significantly predict higher scores on the Yale Food Addiction Scale.

Conclusions: Findings indicated marijuana use in post-WLS patients despite recommendations against use. A subgroup of WLS patients may be at risk for disordered eating post-WLS, particularly those who used marijuana before surgery, and should be closely monitored for several years post-WLS. (Surg Obes Relat Dis 2015;0:000−000.) © 2015 American Society for Metabolic and Bariatric Surgery. All rights reserved. (Surg Obes Relat Dis 2015;1:00−00.) © 2015 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords:

Marijuana; Food addiction; Disordered eating; Bariatric surgery; Weight loss surgery

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Bariatric surgery has been documented as an effective treatment for morbid obesity in the United States [1], in which more than one third of the population is obese [2,3].

Studies have reported a notable prevalence of psychiatric disorders among bariatric surgery candidates, such as binge eating disorder [4,5] and lifetime substance use disorder [6]. Despite preoperative diagnoses, successful surgical weight loss and co-morbidity resolutions are more likely to occur in patients who adhere to lifestyle modifications proposed by surgeons, such as quality diet intake and the avoidance of postoperative drug use [7,8].

Marijuana is the most commonly used illicit drug in the United States [9]; yet, it has been noted that there are no studies published that examine the prevalence or effect of marijuana use among bariatric surgery patients [10]. Although the relationship between marijuana use and physical health outcomes is unclear, marijuana use has been documented to increase appetite, heart rate, respiratory infections, and immune suppression [11]. Such outcomes are similar to the factors that may lead to negative postoperative outcomes among bariatric surgery patients [10,11]. Psychiatric co-morbidities such as depression and anxiety have also been documented among marijuana users, which increase negative postoperative outcomes among bariatric surgery patients [10]. Aside from negative health outcomes, marijuana use has also been associated with a higher relapse of alcohol and other drug use [10,12], which can lead to other negative postoperative consequences. Many bariatric surgery facilities advise patients to avoid alcohol consumption for 6 months after surgery to facilitate postoperative healing weight loss and to prevent macronutrient deficiencies [8]. Furthermore, studies in both animal models [13,14] and human patients [15,16] have found an increase in alcohol use postoperatively.

Research suggests that there are instances in which patients develop new-onset substance use disorders after surgery, potentially substituting licit (i.e., alcohol, cigarettes) or illicit substances (i.e., drugs) for food [17-20]. It should be noted that general assumptions should not be made because individual differences among patients should be considered when determining who has the potential to become "addicted" to substances [21], whether it be food or drugs. Bariatric surgery patients have also been reported to be overrepresented in substance abuse treatment programs [22]. For example, Conason et al. (2013) [23] found that 4.5% of weight loss surgery patients reported drug use (independent of alcohol and cigarette use) at baseline. Two years postoperatively, the prevalence increased to 13.2%; however, the substances used were not specified. A study of veterans who underwent weight loss surgery reported that 4% of patients developed postoperative substance abuse disorder. The substances reported in this study were alcohol and methamphetamines [24]. Although there may be a subset of weight loss surgery patients who engage in postoperative substance use, based on the current literature, the specific substances, aside from alcohol and tobacco, are not clear. New-onset substance-use disorder diagnoses place most substances into general categories such as alcohol, tobacco, and other drugs [10]. This makes it difficult to focus on specific types of substances, like marijuana, independently. Furthermore, postoperative eating behaviors are not described in detail among such patients.

Given that marijuana use has been connected to risk behaviors that lead to negative postoperative outcomes, we explored the frequency of marijuana use in a sample of post–bariatric surgery patients. Specifically, there is a gap in the literature reporting the prevalence of postoperative marijuana use patterns among bariatric surgery patients. The objective of this study was to explore the marijuana use patterns, disordered eating behavior, and food addiction behaviors among patients 1–2 years after bariatric weight loss surgery (WLS). It was hypothesized that patients who engage in marijuana use post-WLS would exhibit disordered eating behaviors compared with those who never used marijuana.

Methods

Recruitment

Patients, recruited from a larger study that examined psychosocial and health outcomes of teen and young adult bariatric surgery patients, were eligible for the present study if they were at least 1 year postoperative. Initial contact was made over the phone or through e-mail based on contact information via a patient database. Interested participants were scheduled for an interview with a trained licensed master's or doctoral level clinician. After study procedures were explained, written informed consent was obtained before the in-person interview. There was only 1 participant under age 18 (participant was 17 y old). Written informed assent was obtained from the minor participant and written consent was obtained from the participant's parent/guardian. The interviews lasted approximately 2-3 hours. Participants were compensated \$100 for their time. The University of Miami's Institutional Review Board approved all study procedures.

Measures

Marijuana use. The drug/alcohol portion of the Addiction Severity Index (ASI), Fifth Edition [25], was administered by the interviewer to assess marijuana use. The ASI captures lifetime and past 30-day use of alcohol and other drugs, including marijuana. Lifetime use was used to assess whether the patient used marijuana before surgery based on reported age of first use of marijuana. In accordance with the ASI Manual and Question by Question guide [26], a question regarding pattern of use in the last year—"In the past 12 months, have you used marijuana?"—and a specific question regarding pattern of use after WLS—"Since surgery, how would you describe your marijuana use pattern?"—were added. Answer options for these questions were the following: increased since surgery, stayed the

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