OBES SURG (2018) 28:717–724
DOI 10.1007/s11695-017-2936-7

ORIGINAL CONTRIBUTION

How Do Individuals Develop Alcohol Use Disorder After Bariatric Surgery? A Grounded Theory Exploration

Ruth Yoder[1] · Padraig MacNeela[2] · Ronan Conway[2,3] · Caroline Heary[2]

Published online: 14 October 2017
© Springer Science+Business Media, LLC 2017

Abstract
Background Bariatric surgery is the most effective treatment for severe obesity. However, following Roux-en-Y gastric bypass (RYGB) surgery, a small minority of patients develop new-onset alcohol use disorder (AUD), the aetiology of which is poorly understood.
Aim The aim is to construct a theory to explain the development of AUD among a sample of individuals who reported problematic drinking following RYGB.
Method Semi-structured interviews were conducted with eight RYGB patients diagnosed with AUD attending a multidisciplinary outpatient weight management service at a public hospital in the Republic of Ireland. A constructivist grounded theory methodology was used to analyse interview transcripts.
Results Participants' main concern was identified as 'unresolved psychological issues' which were managed by 'external coping mechanisms', namely, 'eating to cope'. After RYGB, comfort eating was no longer possible to the same extent. Following a 'honeymoon period', participants' need for an external coping mechanism resurfaced. 'Filling the void' provides a framework to explain how participants managed the symptoms of their unresolved psychological issues through 'behavioural substitution', that is, drinking alcohol instead of eating.
Conclusion The theoretical framework of 'filling the void' adds to contemporary research that conceptualises AUD behavioural substitution as 'addiction transfer' by describing the process by which the phenomenon occurs as well as the characteristics of participants. The clinical implication of this research is to advocate for a reshaping of treatment of RYGB patients, with increased psychological input following surgery.

Keywords Grounded theory · Alcohol use disorder · Bariatric surgery · Unresolved psychological issues

✉ Caroline Heary
caroline.heary@nuigalway.ie

Ruth Yoder
ruth.yoder@hse.ie

Padraig MacNeela
padraig.macneela@nuigalway.ie

Ronan Conway
rojconway@gmail.com

[1] School of Psychology, National University of Ireland, Galway and Weight Management Service, St. Columcille's Hospital, Loughlinstown, County Dublin, Ireland

[2] School of Psychology, National University of Ireland, Galway, Galway, Ireland

[3] Present address: School of Psychology, University College Dublin, Dublin, Ireland

Introduction

In addition to the health complications associated with morbid obesity, levels of psychological distress, such as depression and anxiety, are significantly higher than those reported in the general population [1–3]. The National Co-morbidity Survey Replication [4] reports lifetime prevalence rates of 46.4% for axis I disorders, 20.8% for any mood disorder, 14.6% for any substance use disorder and 13.2% for alcohol use disorder (AUD). Between 21 and 61% of weight loss surgery (WLS), candidates suffer from a psychiatric illness, with one third having a history of substance abuse [5]. While Roux-en-Y gastric bypass (RYGB) is the most effective type of WLS [6], with concomitant improvements in mental health, a significant minority reported the reversal of mental health

gains experienced in the first few years or an absence of any significant psychological benefit [7].

Among the various psychological models of overeating, there is growing interest in viewing overeating as resulting from addictive behaviour [8]; the homeostatic regulation of calorie intake is overridden in the pursuit of immediate reward when highly palatable food is available and the neurobiological processes underlying both reward sensitivity and inhibitory control are disrupted. Changes in brain function, particularly decreased basal dopamine secretion, similar to that seen in drug abuse can also be seen in chronic consumption of highly palatable foods [9]. Further support for the addictions model comes from the apparent contradiction that although there is an inverse relationship betweem BMI and alcohol consumption in the general population [10], lifetime prevalence rates of AUD are higher among individuals with morbidobesity than the general population [11]. Thus the very lowrates of alcohol consumption noted among bariatric surgery candidates [12] cannot be exclusively attributed to under-reporting. AUD following RYGB has been consistently reported since 2008 [11, 13, 14] with the largest published study [15] (reporting data from 11,115 post-bariatric surgery patients) finding a twofold increased risk of inpatient care for alcohol abuse among patients who had RYGB compared with those who had gastric banding. Identified risk factors included pre-operative AUD [13, 14], male gender [13, 16], younger age [13] and any pre-operative alcohol use [16].

The link between RYGB, specifically, and an increased risk of post-surgery AUD appears to be due to faster absorption of alcohol as well as a marked reduction in available alcohol dehydrogenase, which is mainly secreted in the now circumvented stomach [17]. Fifteen participants used as their own controls demonstrated significantly increased peak blood alcohol at 3 months and significantly higher again at 6 months post-surgery after drinking 5 oz of wine compared to pre-surgery [18]. Reduced body mass was ruled out as a causal factor suggesting that the anatomical changes alone were responsible. Only one published study [19] using a qualitative methodology addressing post-RYGB AUD has been carried out, yielding themes associated with its aetiology: unresolved psychological problems, addiction transfer, faster onset or stronger effects from substances and increased pain medication availability. However, these themes were descriptive rather than conceptual and did not offer a coherent explanatory model. The present study sought to build on this work by developing a grounded theory of post-RYGB AUD.

Qualitative research methods are particularly well suited to exploring poorly understood and complex areas of human experience as well as giving an important voice to those affected. Among various qualitative approaches that seek to understand psychological phenomena in exploring the totality of a situation, investigating the *why* and *how* of a phenomenon [20], grounded theory is particularly well suited to questions about influencing factors by generating a contextually situated theory that comes from a close inspection of the data collected in a concrete local setting [21]. Grounded theory methods broadly consist of a set of guidelines for collecting and analysing data that are both systematic and flexible.

Method

The eight participants attended the same publicly funded weight management service in the Republic of Ireland and had voiced concerns to a health professional regarding problematic alcohol use. The inclusion criterion for AUD was a score of eight or more on the Alcohol Use Disorders Identification Test (AUDIT) [22], the cut-off score used to determine problematic alcohol use. Scores ranged from 12 to 36 with a mean of 24. The four males and four females ranged in age from 30 to 67 with a mean of 48 and their pre-surgery BMI ranged from 41 to 74 kg/m^2 with a mean of 55 kg/m^2. Recent BMI ranged from 26 to 41 kg/m^2 with a mean of 31 kg/m^2. Time since bariatric surgery ranged from 3 to 12 years (mean = 8.5 years). Four participants were abstinent from alcohol at the time of the interview and were asked about their previous problematic alcohol intake when responding to items on the AUDIT; three of these participants had been treated in residential substance abuse facilities and the fourth in an outpatient addictions service, a further two completed residential substance abuse treatment but relapsed. Other patients identified with post-RYGB AUD were either unwilling to participate in the study, were uncontactable or deceased. Informed consent was obtained and ethical approval granted by the research ethics committee of the National University of Ireland, Galway.

A semi-structured individual interview was carried out. The grounded theory method used in the study required that questions should be open-ended, exploratory and designed to elicit information about the relevant actions and processes and included topics relating to what changes in participants' lives were noticed after surgery, including personality changes. They were also asked about coping skills, drinking habits and personal relationships before and after surgery as well as what triggers or influences to drink that they could identify. In keeping with the grounded theory method, the possibility of revising the interview schedule was considered following an initial analysis of each interview. This practice is based on the assumption that the theoretical understanding of what is being studied is constantly growing and evolving, and may move in unexpected directions which may necessitate a significant shift in the direction an interview schedule may follow. Since each participant displayed such openness and frankness, very little prompting was required to elicit dense and rich data and it was not necessary to make more than very minor changes to the interview schedule.

The data was analysed using a constructivist grounded theory method, that is, a relativist and pragmatic version of grounded theory, which does not assume that theories are discovered, as in classical grounded theory, but are constructed by the researcher within a particular cultural and personal context [21]. After verbatim transcription of the interviews, each segment of data was coded. Initial codes were reviewed and assimilated into a more abstract conceptualization in a process known as theoretical coding. Core categories were then constructed as the data analysis moved from a linear or chronological process view of the development of AUD after RYGB to a more vertical explanation linking disordered eating and excess drinking to proposed underlying generative mechanisms. These core categories underpin the final grounded theory because they contain the most explanatory power and provide the most plausible account for the participants' main concern (Table 1).

Results

Following the grounded theory analysis, an overarching theory was developed to provide an explanatory account of the emergent themes. The theory of 'filling the void', which can be seen in Fig. 1, explains the pattern of excess drinking employed by the participants to manage the problem of their unmet emotional and psychological needs when they were physically prevented from comfort eating after bariatric surgery. This 'void' refers to both an inner void of personhood described by most of the participants as well as the void left in their coping repertoire which was previously occupied by comfort eating. Seven of the eight participants revealed significant trauma histories, as well as attachment difficulties in childhood, major losses and consequent challenges in regulating their emotions. In their distress, they found comfort in palatable foods and this pattern persisted until they had WLS and were no longer physically able to eat the same foods or in the same quantities. Self-soothing became difficult to achieve and they sought the same calming effect from alcohol. The desire to replace hedonic eating (eating as a source of sensory pleasure in the absence of an energy deficit) was another contributing factor in their initial drinking as a 'new buzz'. Unrestrained drinking then began to mirror their previous unrestrained eating patterns.

In grounded theory research, the participants' main concern is often used as a starting point in theory construction, as it is, this common issue that is at the root of the phenomenon under investigation. The main concern of 'unresolved psychological issues' (Fig. 2) was developed from four key categories: 'psychological problems', 'trauma', 'loss' and 'internally unchanged'.

Managing unresolved psychological issues before WLS was achieved with the help of external coping mechanisms, that is, using things or activities outside themselves to cope with the burden of what they experience as intense or intolerable emotions. While there was some reporting of adaptive coping in the form of appropriate support seeking as well as using hobbies, interests and physical activity to reduce stress, removal of supports or additional stressors led to use of eating to cope before WLS. Eating behaviours in the form of comfort eating, binge eating and eating for pleasure were so altered after WLS that there was a gap in their coping repertoire and the ability to manage stress.

The period immediately following WLS, accounting for the hiatus before the onset of AUD and lasting up to 2 years, is referred to in our theory as the 'honeymoon' because of the typically elevated mood experienced by patients as they rapidly lose weight, resulting in dramatic improvements in physical health and mobility, praise and attention and increasing social acceptance after occupying a socially excluded position previously. The honeymoon ended for this group of participants due to the persistence of psychological problems or new psychosocial stressors and the realisation that they were still the same person ('internally unchanged'). As well as needing a replacement coping strategy, there was a need for a new source of pleasure. Alcohol provided this 'new buzz', as it was described with enthusiasm by several participants. The rapid effect of alcohol is regarded as an enabling factor within the current theoretical model rather than the driving force behind the development of AUD. The concept of a substitute behaviour that serves the same purpose as the one it replaced is core to the theory of 'filling the void'. The drive to fill this vacuum previously occupied by eating was briefly suspended during the honeymoon period. After the honeymoon period, alcohol served the same purpose as eating did, as a 'new buzz', and it helped to regulate emotion through the counteracting effects of pleasant sensations. It was also associated with a calming effect on unpleasant emotions, such as the depression, anxiety, post-traumatic stress disorder (PTSD) and low self-esteem that persisted for several participants.

The theory, 'filling the void', represents the conclusion of the participants' attempts to use alcohol to meet emotional and psychological needs that they had previously met through eating. The concept of a 'void' has two aspects: that of an inner emptiness and that of a vacuum previously occupied by eating. Moreover, it has passive and active facets: passive in the sense that it represents a vacuum waiting to be filled and active in the sense that there are deeply felt unmet needs that motivated participants to act. These unmet needs relate to issues of attachment, security and safety as well as stimulation and pleasure. The void can also be understood as a sense of not having a firm place in the world, needing something to feel anchored to in the face of turbulence and using first eating and then alcohol to meet a range of emotional and psychological needs.

AUD treatment and recovery formed part of the participants' narratives and included inpatient treatment ($n = 5$),

Table 1 Overview of theoretical categories and illustrative quotes

Core category	Sub-category	Illustrative quote
Unresolved psychological issues		"All the stuff when I was younger; things that never came out when I was here; all the beatings that I'd had. Severe beatings. Sexual assault while I was in school. All that stuff came out, but that was later because I never would have allowed it to come out; that was so suppressed." (participant 1, male)
	Psychological problems	"I just turned to food to repress, not memories or anything like that, just anxiety. And I turned to food to repress that. And then after surgery, because I wasn't able to eat as much as I could, I started going back towards drink." (participant 3, male)
	Trauma	"I believe that I became morbidly obese and heading for death, as a self destructive mechanism, because I would rather face oblivion than face my memories. Now, I realised that when I was in (psychiatric hospital), but it took me nine years post-op. I'd always known it, but to actually admit it." (participant 1, male)
	Loss	"I almost had nothing to hide behind when I lost my weight. I'd always had a comfort blanket. I'd say, I can't do that because … So the insecurity is when people say, no, you can! And then you have to say, no. That made it worse. I had to find a different excuse to not be able to function as an outside person." (participant 6, male) "Before I lost my job, my youngest child died." (participant 4, female)
	Internally unchanged	"My life hasn't changed at all, I'm still in the same routine, still at home, still playing the house-husband, still being Dad, still ..... Apart from that I'm in different size trousers. Not a great deal, nothing life changing." (participant 6, male)
External coping mechanisms	Coping challenges	"I'm not able to cope." (participant 4, female)
	eating to cope	"There were a lot of problems at home. And then, I suppose, in hindsight, I was comfort eating." (participant 5, female)
	Drinking to cope	"I just thought I was gone from one addiction to another addiction and I knew there is an issue here, there is something creeping on me and something that I couldn't control. I can't control food, I have to be very careful around food and certainly I think alcohol came in, in a big way." (participant 7, female)
The honeymoon		"I'll tell you, the euphoria after the operation, when you see weight coming off week after week after week after week. I can't remember ever being happier than that, ever." (participant 6, male) "I had a new life." (participant 8, female)
	Honeymoon over	"The happiness went down, normality came back up, the realisation that nothing had actually changed." (participant 6, male)
A new buzz		"It gave me a buzz feeling, which obviously at the time I couldn't get from food anymore." (participant 1, male) "It gave me a lovely buzz feeling" (participant 7, female)
	Rapid effect of alcohol	"The less that I was drinking was affecting me more than other people." (participant 4, female) "The feeling of being really drunk that you only experience at the end of the night, you've got that straight away." (participant 6, male)
Behavioural substitution		"The fix I was looking for, or the suppressant that I was looking for, came not via food any more, but from drink." (participant 1, male) "Eating was a way of escape for me, then I switched to the drink. And that was a way of escape for a few hours." (participant 2, male)
	Alternating behaviours	"So I kind of was in a Catch-22. It was either one problem, same problem that I was dealing with. I had two things to help me with it, like. And I was jumping from one to the other, one to the other, one to the other." (participant 3, male)
Filling the void	The void of unmet needs	"In hindsight, I didn't realise it at the time, but yes, I think, before I started drinking, I would have used food as a comfort, yes, to fill that void." (participant 2, male)
	The void as a vacuum previously occupied by eating	"I was an absolute teetotaller before the operation. Wouldn't even touch the stuff because it was like vinegar to me. …. And it was only post-op that I started drinking. And it roller-coastered very quickly." (participant 1, male)

Table 1 (continued)

Core category	Sub-category	Illustrative quote
	Filling the void in recovery	"I've never taken drugs, luckily, thank God I haven't. And touch wood I never will. But I'm just afraid that one day if I have to cut out the two of them (comfort eating and alcohol) and the anxiety is not controlled, I will turn to drugs to help with it." (participant 3, male) "My family know I'm an alcoholic and my few friends that I choose to tell, they know I'm an alcoholic and I'm not afraid say I'm an alcoholic. Because I'm an alcoholic, because I went to after-care, because I go to AA, because I pray to my Holy Spirit, which I pray to all day every day, I go to church and I say my prayers, at this moment I'm not drinking, because of all those things. But as people in AA say, it's just one day at a time. Because I'm not drinking, I have a life. As I said earlier, I'm with my nieces and nephews, I'm with my family and I'm included in activities, my sister can confide in me with her problems, she won't confide in anybody else, but she will confide in me. So I'm proud to be not drinking." (participant 8, female)

outpatient addictions counselling (n = 1), self-help groups such as Alcoholics Anonymous (n = 3), use of oral disulfiram (Antabuse) (n = 1), disulfiram implant (n = 1), anti-depressant medication (n = 6) and anti-anxiety medication (n = 1). At the time of interview, four participants continued to drink at problematic levels.

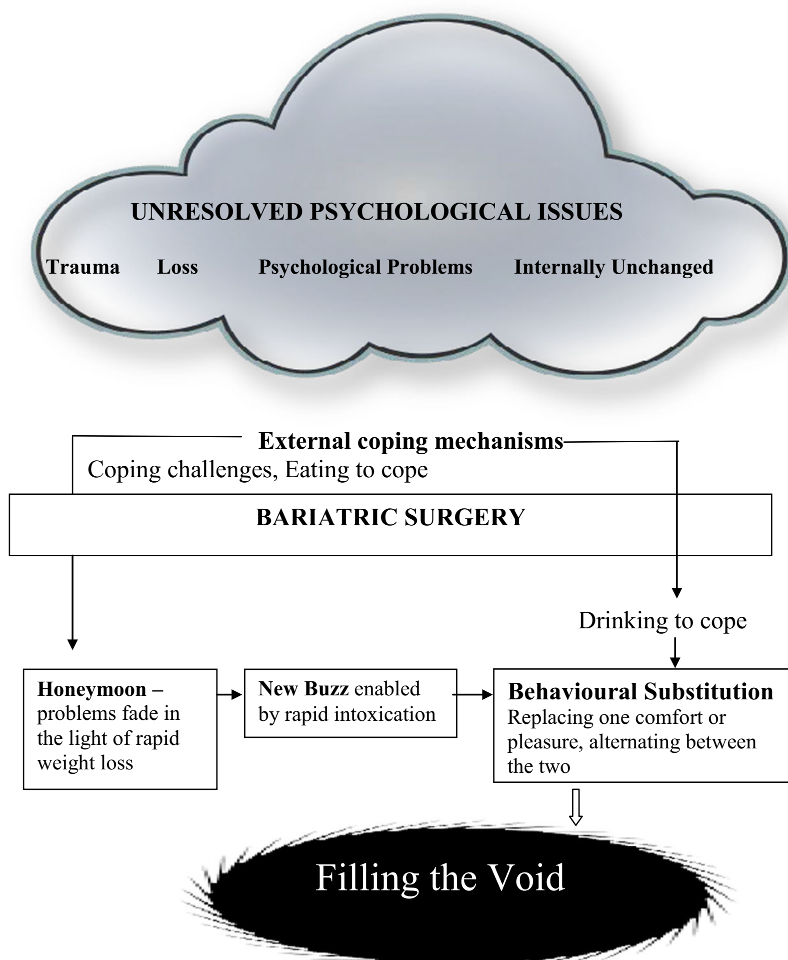

Fig. 1 Overview of the theory of 'filling the void' of unmet psychological and emotional needs and its relation to the problem of 'unresolved psychological problems'

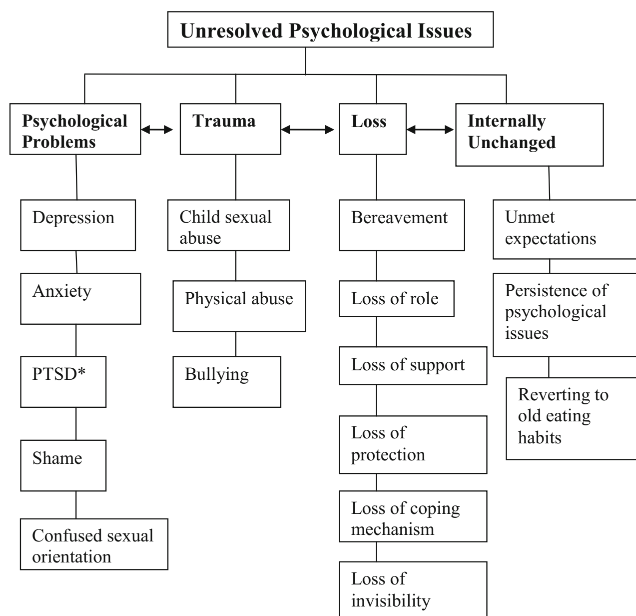

Fig. 2 Conceptual development of participants' main concern: 'unresolved psychological problems'

Discussion

The theory of 'filling the void' describes the dynamic of managing symptoms relating to unresolved psychological issues that continued in a different form after RYGB. Participants' main concern was how to cope with experiences that they either found overwhelming or needed the help of external coping mechanisms to manage. This theory has two main aspects. The first is that the participants used eating to control their affective state. In most cases, this was to neutralise or minimise negative affective states, and in some cases, it was also to induce positive affect. The second aspect is the behavioural replacement of eating with drinking as a coping mechanism. This theory incorporates elements of the two existing theories in the literature about post-surgery AUD and also elaborates upon them. The current theory includes the concept of 'addiction transfer' or 'behavioural substitution' previously proposed [23]. However, a second proposed theory [19], attributing post-surgery AUD to faster absorption of alcohol due to anatomical changes, is included only as an enabling factor and is not represented as the driving force behind their development of AUD. Rather, the underlying mechanism facilitating AUD in this context is psychological rather than biological. It refers to the participants' use of external coping mechanisms to manage unresolved psychological issues.

The key finding in this study is the persistence of the use of external coping mechanisms, arising due to the non-remission of pre-existing psychological disorders. This finding is congruent with recent research findings, such as the significant association that obesity has with mood disorders and anxiety disorders (especially specific phobias, social phobias and PTSD [24]). AUD is itself strongly associated in the general population with both PTSD [25] and social anxiety [26], suggesting that the risk of AUD in the presence of a combination of severe obesity and psychopathology is greater than has been heretofore appreciated. A close relationship between a history of sexual abuse and the occurrence of obesity [27] has been reported as well, along with an association between a history of sexual abuse and AUD [28]. The level of significant trauma history among participants in this study was remarkable; this, combined with their mood and anxiety disorders, further highlights their elevated risk of AUD. Findings in the current study are similar to those reported in previous qualitative research regarding unmet expectations after weight loss surgery [29, 30], both reporting that participants expressed disappointment that weight loss by itself did not automatically lead to all of the anticipated changes, particularly among participants who used food to regulate emotions and who also referred to unaddressed psychological problems [31].

The strengths of the current study are that it is the first known qualitative European study published in English addressing this important problem and that it moves beyond mere description of participants' experience, to the conceptualising of those experiences into a theoretical account of post-RYGB AUD. The main limitation of this study is the small number of participants. The sample size was limited by the availability of participants who met the inclusion criteria. The constructivist epistemology of the grounded theory methodology used implies that the resulting theoretical model ('filling the void') represents only one of many possible perspectives on the data. Nonetheless, we believe the model provides an enhanced theoretical framework to guide future research.

It is reasonable to conclude that treatment for alcohol addiction increased the level of insight noted in these participants, which may not be generalizable to all post-bariatric surgery patients with AUD who have not participated in AUD treatment. However, the generative mechanisms may be the same, regardless of the patients' level of insight.

Future research is needed to develop interventions, both before and after WLS, designed to reduce the incidence of AUD among those identified as being at greater risk, that is, those patients with psychological disorders. All candidates should have a psychological evaluation, and the role of food for emotional regulation should form part of this assessment as well as current and past alcohol use. Further psychological work should be undertaken to develop alternative coping strategies if indicated by the psychologist. All post-bariatric surgery patients should be offered psychological input routinely, and if any member of the post-operative treatment team identifies a significant increase in alcohol intake, even when not in

excess of recommended limits, a referral to a psychologist experienced with this population is indicated. All patients should be informed about the increased risk of alcohol abuse even when pre-operative alcohol use is minimal. In particular, the second post-surgical year and beyond, when the honeymoon period has ended, may be when patients are more receptive to addressing unresolved psychological issues and may forestall the onset of problematic compensatory behaviours. Post-bariatric surgery support groups using structured programmes to address eating pathology as well as promoting the use of adaptive coping skills are recommended [32].

Conclusion

This research provides an enhanced conceptual account of the development of AUD following RYGB. Participants' main concern was identified as 'unresolved psychological issues'. The theory of 'filling the void' accounts for how the participants in this study attempted to cope with their unmet psychological and emotional needs through external means of coping. Through 'behavioural substitution', participants managed the symptoms of their unresolved psychological issues by drinking alcohol instead of excess eating. A grounded theory methodology allowed exploration of very personal and sensitive details of participants' lives and adds to our collective understanding of the risks bariatric surgery candidates may encounter that contribute to the development of AUD.

Funding The first author gratefully acknowledges the Education Committee of St. Columcille's Hospital for the receipt of 75% of the academic tuition fees for the degree of D.Psych.Sc., for which this research forms partial fulfilment. No other funding was received.

Compliance with Ethical Standards

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

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

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

References

1. Wadden TA, Sarwer DB, Womble LG, et al. Psychosocial aspects of obesity and obesity surgery. Surg Clin N Am. 2001;81:23.
2. Scott KM, McGee MA, Wells JE, et al. Obesity and mental disorders in the adult general population. J Psychosom Res. 2008;64(1):97–105.
3. Pagoto SL, Schneider KL, Bodenlos JS, et al. Association of post-traumatic stress disorder and obesity in a nationally representative sample. Obesity (Silver Spring). 2012;20(1):200–5.
4. Kessler RC, Berglund P, Demier O, et al. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry. 2005;62:593–602.
5. Sarwer DB, Wadden TA, Moore RH, et al. Changes in quality of life and body image after gastric bypass surgery. Surg Obes Relat Dis. 2010;6(6):608–14.
6. Chang SH, Stoll CR, Song J, et al. The effectiveness and risks of bariatric surgery: an updated systematic review and meta-analysis, 2003-2012. J Am Med Assoc- Surg. 2014;149(3):275–87.
7. Kubik JF, Gill RS, Laffin M, et al. The impact of bariatric surgery on psychological health. J Obes. 2013;2013:837989.
8. Volkow ND, Wang GJ, Tomasi D, et al. The addictive dimensionality of obesity. Biol Psychiatry. 2013;73(9):811–8.
9. Lutter M, Nestler EJ. Homeostatic and hedonic signals interact in the regulation of food intake. J Nutr. 2009;139(3):629–32. https://doi.org/10.3945/jn.108.097618.
10. Kleiner KD, Gold MS, Frost-Pineda K, et al. Body mass index and alcohol use. J Addict Dis. 2004;23(3):105–18.
11. Kudsi OY, Huskey K, Grove S, Blackburn G, Jones DB, Wee CC. Prevalence of pre-operative alcohol use among patients seeking weight-loss surgery. Surg Endosc. 2013;27(4):1093–97. https://doi.org/10.1007/s00464-012-2568-x.
12. King WC, Chen JY, Mitchel JE, et al. Prevalence of alcohol use disorders before and after bariatric surgery. JAMA. 2012;307(23):2516–25. https://doi.org/10.1001/jama.2012.6147.
13. Ertelt TW, Mitchell JE, Lancaster K, et al. Alcohol abuse and dependence before and after bariatric surgery: a review of the literature and report of a new data set. Surg Obes Relat Dis. 2008;4(5):647–50.
14. Suzuki J, Haimovici F, Chang G. Alcohol use disorders after bariatric surgery. Obes Surg. 2012;22(2):201–7.
15. Ostlund MP, Backman O, Marsk R, et al. Increased admission for alcohol dependence after gastric bypass surgery compared with restrictive bariatric surgery. JAMA: J Am Med Assoc - Surg. 2013;148(4):374–7.
16. Svensson PA, Anveden A, Romeo S, et al. Alcohol consumption and alcohol problems after bariatric surgery in the Swedish Obese Subjects (SOS) study. Obesity (Silver Spring). 2013.
17. Hagedorn JC, Encarnacion B, Brat GA, et al. Does gastric bypass alter alcohol metabolism? Surg Obes Relat Dis. 2007;3(5):543–8. discussion 548
18. Woodard GA, Downey J, Hernandez-Boussard T, et al. Impaired alcohol metabolism after gastric bypass surgery: A case-crossover trial. J Am Coll Surg. 2011;212(2):209–14.
19. Ivezaj V, Saules KK, Wiedemann AA. "I didn't see this coming". Why are postbariatric patients in substance abuse treatment? Patients' perceptions of etiology and future recommendations. Obes Surg. 2012;22(8):1308–14.
20. Braun V, Clark V. Successful qualitative research: a practical guide for beginners. London: Sage; 2013.
21. Charmaz K. Constructing grounded theory. London: Sage; 2014.
22. Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro MG. The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care. Department of Mental Health and Substance Dependence; 2001.
23. Reslan S, Saules KK, Greenwald MK, et al. Substance misuse following Roux-en-Y gastric bypass surgery. Subst Use Misuse. 2014;49(4):405–17.
24. Pagoto SL, Schneider KL, Bodenlos JS, et al. Association of post-traumatic stress disorder and obesity in a nationally representative sample. Obesity. 2012;20(1):200–5. https://doi.org/10.1038/0by.2011.318.

25. Kachadourian LK, Pilver CE, Potenza MN. Trauma, PTSD, and binge and hazardous drinking among women and men: findings from a national study. J Psychiatr Res. 2014;55:35–43.
26. Schneier FR, Foose TE, Hasin DS, et al. Social anxiety disorder and alcohol use disorder co-morbidity in the National Epidemiologic Survey on Alcohol and Related Conditions. Psychol Med. 2010;40(6):977–88.
27. Steinig J, Wagner B, Shang E, et al. Sexual abuse in bariatric surgery candidates—impact on weight loss after surgery: a systematic review. Obes Rev. 2012;13:9.
28. Maniglio R. The role of child sexual abuse in the etiology of substance-related disorders. J Addict Dis. 2011;30(3):216–28.
29. Followell J. Experience of women before and after bariatric surgery [Dissertation]: Department of Health Education and Recreation, Southern Ulinois University Carbondale; 2008.
30. Magdaleno Jr R, Chaim EA, Pareja JC, et al. The psychology of bariatric patient: what replaces obesity? A qualitative research with Brazilian women. Obes Surg. 2011;21(3):336–9.
31. Ogden J, Avenell S, Ellis G. Negotiating control: patients' experiences of unsuccessful weight-loss surgery. Psychol Health. 2011;26(7):949–64.
32. Saunders R. Post-surgery group therapy for gastric bypass patients. Obes Surg. 2004;14(4):1128–31.