

Extreme Obesity and its Associations with Victimization, PTSD, Major Depression and Eating Disorders in a National Sample of Women

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Abstract

Background: Crime victimization experiences, such as rape, molestation, and aggravated assault are significantly associated with bulimia nervosa (BN) and associated psychiatric comorbidity such as posttraumatic stress disorder (PTSD), major depressive disorder (MDD), and substance abuse. Obesity also appears to be a major risk factor for the development of BN, but few studies have examined the relationship of crime victimization experiences to obesity and related psychopathology.

Methods: During the 3rd wave of the National Women's Study, a representative sample of 3,012 adult women (≥ 18 y/o) randomly selected from 4 geographic areas of the US completed a telephone interview including screenings for rape, attempted sexual assault, molestation, aggravated assault, surviving homicide, as well as PTSD, MDD, and BN. Self-reported height and weight were obtained, and current BMI and maximum/minimum BMI's during adulthood were calculated. Subjects were categorized into 5 groups based on maximum BMI for comparisons: 1) <25 ; 2) $25-30$; 3) $30-35$; 4) $35-40$; and 5) ≥ 40 (extreme obesity (EO)).

Findings: Lifetime diagnosis of EO (BMI ≥ 40) was strongly associated with history of rape (ANOVA, $p < 0.001$), childhood sexual abuse ($p < 0.001$), childhood abuse ($p < 0.001$), and current ($p < 0.001$) and lifetime PTSD ($p < 0.001$) in comparison to all other BMI groups. EO subjects were also most likely to engage in binge eating ($p < 0.001$) and purging behaviors ($p < 0.001$) and to meet DSM-IV criteria for BN, any ED (BN or BED), and MDD. Alcohol and drug abuse were not associated with obesity.

Conclusion: These data suggest that crime-related victimization experiences (especially rape) and associated PTSD are important risk factors for EO, which is often also associated with bingeing, purging and bulimic EDs. Careful screening for victimization histories, PTSD, MDD, and EDs is warranted, especially in EO.

Introduction

We have previously reported that crime victimization experiences, such as rape, molestation, and aggravated assault are each significantly associated with bulimia nervosa (BN), binge eating, purging behaviors, as well as associated psychiatric comorbidity

such as posttraumatic stress disorder (PTSD), major depressive disorder (MDD), and substance abuse [1-7]. Obesity has also been noted by several clinical investigators to be a major risk factor for the development of BN and disordered eating behaviors [8,9].

Several investigators have reported an association between obesity and prior traumatic victimization. Felitti reported that

a high number of patients who failed a weight control program gave a clear-cut history of childhood sexual abuse [10,11]. He studied 131 patients with a history of incest, molestation, and/or childhood rape and age- and sex-matched controls from the same general medical population and found higher rates of chronic depression, extreme obesity (EO), marital instability, and a high utilization of medical care. Kanter reported that 62 obese males and 274 females with binge eating who were seeking obesity treatments had greater rates than obese non-binge eaters of alcohol abuse, parental alcohol abuse, and victimization experiences including physical and sexual abuse [12]. Using a very large data set (n=13,494) in which Kaiser Health Plan members completed standardized medical evaluations (the Adverse Childhood Experiences (ACE study)), Felitti and colleagues noted that obese patients reported more childhood sexual abuse, non-sexual childhood abuse, early parental loss, parental alcoholism, depression, and marital and family dysfunction than non-obese patients. Adverse childhood exposure was associated with an increased lifetime risk of severe obesity defined by these investigators as BMI ≥ 35 . Individuals who had experienced four or more categories of childhood exposure compared to those who had experienced none had a four- to twelve-fold increase health risk for alcoholism, drug abuse, depression, and suicide attempts and a 1.4- to 1.6-fold increased risk for physical inactivity and severe obesity [13]. Other investigators have confirmed the link between victimization histories and obesity [14-20]. In the large California Health Study (n=11,115), Alvarez and co-investigators found that obese women were found to have significantly higher rates of reported child abuse (defined as experiencing either physical or sexual abuse before age 18) [14]. In a population-based survey of women enrolled in a Pacific Northwest health plan (n=4641), Rohde and colleagues found that both childhood sexual and physical abuse were associated with significantly higher rates of both obesity (OR: 2.8) and depression (OR: 2.2) [18]. Aaron and Hughes reported that lesbian women who reported childhood sexual abuse were more likely to be obese (OR: 1.9) or extremely obese (OR: 2.3) [21]. In a prospective, longitudinal study, Noll and colleagues reported that sexually abused girls were more likely to become obese by young adulthood [17]. In another prospective, longitudinal study, Bentley and Widom found that only childhood physical abuse, but not childhood sexual abuse or neglect, predicted higher BMI scores 30 years later [15]. However, the authors noted a relatively small sample of sexually abused girls as a possible explanation for their negative results. Finally, Sansone and associates reported high rates of childhood trauma in a series of patients (86% women) with EO seeking bariatric surgery [19]. In addition to the published links between obesity and prior victimization, there have also been reports revealing links between obesity and PTSD [22-25]. Given that trauma is not simply the occurrence of an adverse *event*, but also includes the individual's *experience* of the event as well as the *effects* of the event (the three "e's"), it is imperative to also consider the emergence of PTSD and PTSD symptoms in assessing the long-term impact of trauma [3,6,26]. PTSD and partial PTSD (pPTSD) are more powerful predictors of bulimic EDs and other related psychiatric comorbidity than the traumatic event(s) alone [2-6,27,28].

Obesity has also been reported to be associated with MDD and other mood disorders, while findings regarding its links to alcohol use/dependence are mixed [29,30]. However, the links between alcohol use/dependence with PTSD, BN, bingeing and purging are stronger [2,6,31,32].

Given these relationships we hypothesized that obesity, and specifically EO, would be associated with prior crime victimization and related psychiatric comorbidity in this representative sample of women from across the United States. Since the focus of this study was to assess the association of degrees of lifetime overweight and obesity with victimization and psychiatric comorbidity, maximum BMI was used as opposed to current BMI.

Methods

Sample

The original sample of 4,009 women was generated by multistage geographic sampling involving random-digit dialing. Subjects completed a telephone interview lasting on average forty minutes. The completion rate for Wave 1 was 85.2%, and 75% of Wave 1 sample completed Wave 3 approximately two years later (1992), leaving a national sample of 3,006 women participating in this anonymous survey.

Instruments

Behaviorally-specific questions about DSM-IV defined PTSD Criterion A events were asked of all participants and included forcible rape, sexual molestation, attempted sexual assault, aggravated assault, and surviving homicide. In addition, the evaluation of BN, binge eating disorder (BED), PTSD, substance abuse and dependence, and MDD was based on structured interview using DSM-III-R criteria, which was later modified for DSM-IV. [33] The details of these studies have been previously described elsewhere [1,2,4,28,34,35].

As part of the PTSD assessment all respondents were asked about a lifetime history of forgetting all or parts of experiences (amnesia) using the following question: "Throughout this interview we've talked about distressing experiences that you have had. Have you EVER felt that there were parts of any experience that you couldn't remember?" Immediately following this question, all respondents were then asked whether this had happened recently: "During the last month, have you felt that there were parts of any such experience that you couldn't remember?" Affirmative responses were categorized respectively as having "amnesia," lifetime and current [28].

During the course of the interview subjects provided self-reported height and weight, which was used to calculate current BMI as well as maximum and minimum BMI's during adulthood. Subjects' maximum lifetime BMI's were categorized into five groups: 1) less than 25, 2) 25 to less than 30, 3) 30 to less than 35, 4) 35 to less than 40, 5) ≥ 40 using standard cutoff points [36]. Childhood BMI was not assessed.

Statistics

The General Linear Model (GLM) univariate procedure of SPSS

21.0 was used to perform regression analysis and analysis of variance (ANOVA) for relevant dependent variables. This procedure determined whether significant differences existed in the prevalence of rape, molestation, aggravated assault, attempted sexual assault, surviving homicide, current and lifetime PTSD, current and lifetime MD, lifetime bulimia nervosa, binge eating disorder, alcohol abuse, alcohol dependence, and drug use using BMI category as the grouping variable. Since the Wave 3 sample was collected in 1992, the data were weighted according to estimates of the 1992 United States (US) census figures for age and race. The weighting program was used to ensure that sample data were representative of women in the US population. In addition, post-hoc Bonferroni t-tests were used for between-cell comparisons when the t-value of the ANOVA met clinical significance. The sample sizes, mean weighted ages, and racial distribution of the sample are provided in **Table 1**. There was no

significant difference in average income across the BMI groups.

Results

A summary of the results are presented in **Table 2**, which includes population weighted means and standard deviations by maximum BMI group. The average age at maximum BMI was 32.8 ± 13.1 years as compared to the average age at the time of assessment (35.9 ± 15.4 years), an average difference of 3.2 ± 9.0 years (paired t-test, $t=18.8$, $p \leq 0.001$). Maximum BMI was highly correlated with current BMI ($r=0.88$, $p \leq 0.001$).

Significant differences across BMI groups in the prevalence of several crime victimization experiences were reported, including rape at any age, rape during childhood (before age 18 years), childhood sexual abuse (including rape and molestation before age 18), childhood maltreatment (including rape, molestation and aggravated assault before age 18), surviving homicide, as

Table 1 Sample sizes and demographic characteristics of the sample by maximum BMI group. *** $p < 0.001$, ANOVA; * $p < 0.05$, χ^2 . Significant differences between groups as per post-hoc Bonferroni t-tests ($p < 0.05$) are indicated by different letters in subscript.

Variable	<25	25-<30	30-<35	35-<40	>40	F or χ^2
Sample size	1404	803	425	188	123	
Age	$38.6 \pm 15.8_a$	$44.8 \pm 17.6_b$	$45.2 \pm 17.7_b$	$43.7 \pm 16.3_b$	$41.5 \pm 13.6_a$	24.8***
Race						3.1*
% Black	6.7%	8.0%	8.0%	8.0%	8.0%	
% White	88.4%	88.5%	88.5%	88.5%	88.5%	
% Asian	1.9%	0.8%	0.8%	0.8%	0.8%	
% Native American	2.7%	1.9%	1.9%	1.9%	1.9%	
% Pacific Is.	0.4%	0.9%	0.9%	0.9%	0.9%	

Table 2 Variable mean (%) and standard deviation by BMI group with p-value (ANOVA). BN=Bulimia nervosa; BED=Binge eating disorder; CA=Childhood abuse; CSA=Childhood sexual abuse; C=Current; DCV=Direct crime victimization; L=Lifetime; SA = Sexual assault.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Variable	<25	25-<30	30-<35	35-<40	>40	p-value
Rape	$12.1 \pm 30.9_a$	$11.8 \pm 33.2_a$	$12.4 \pm 35.2_a$	$12.2 \pm 34.0_a$	$26.0 \pm 46.6_b$	5.88***
Molestation	5.6 ± 20.8	3.8 ± 19.8	5.8 ± 24.9	3.5 ± 19.1	5.6 ± 24.4	0.99
Attempted SA	10.2 ± 30.3	9.0 ± 28.6	10.8 ± 31.1	9.0 ± 28.8	15.5 ± 36.3	1.38
Physical Assault	10.8 ± 29.4	8.9 ± 29.4	10.7 ± 33.1	8.3 ± 28.8	11.0 ± 33.2	0.78
Homicide Survivor	$14.6 \pm 33.5_a$	$11.7 \pm 33.1_a$	$14.6 \pm 37.7_a$	$15.6 \pm 37.8_a$	$22.0 \pm 44.2_a$	3.0*
Any DCV	$31.8 \pm 44.1_a$	$31.0 \pm 47.8_a$	$36.0 \pm 51.3_a$	$29.8 \pm 47.6_a$	$46.2 \pm 53.0_b$	4.02**
Any CSA	$10.5 \pm 29.1_a$	$10.8 \pm 32.1_a$	$9.6 \pm 31.4_a$	$11.2 \pm 32.8_a$	$20.7 \pm 43.0_b$	3.65**
Any CA	$11.3 \pm 30.1_a$	$11.8 \pm 33.3_a$	$11.1 \pm 33.5_a$	$11.7 \pm 33.4_a$	$21.4 \pm 43.6_b$	3.15**
PTSD (L)	$12.0 \pm 31.2_a$	$11.0 \pm 31.9_a$	$16.0 \pm 39.3_a$	$12.0 \pm 34.1_a$	$26.0 \pm 46.8_b$	7.60***
PTSD (C)	$4.0 \pm 10.4_a$	$4.0 \pm 20.0_a$	$6.0 \pm 26.0_a$	$4.0 \pm 20.1_a$	$13.0 \pm 35.6_b$	6.76***
Amnesia (L)	$10.1 \pm 28.4_a$	$10.1 \pm 31.1_a$	$16.6 \pm 39.8_c$	$9.3 \pm 30.2_a$	$22.5 \pm 44.4_b$	8.56***
Amnesia (C)	$3.7 \pm 17.8_a$	$3.8 \pm 19.7_a$	$7.0 \pm 27.3_a$	$5.5 \pm 23.6_a$	$14.1 \pm 37.0_b$	9.15***
BN (L)	$1.5 \pm 11.6_a$	$2.9 \pm 17.4_a$	$3.9 \pm 20.7_a$	$2.7 \pm 16.9_a$	$6.0 \pm 25.2_b$	3.94**
BED (L)	$0.8 \pm 8.4_a$	$1.7 \pm 13.5_a$	$2.6 \pm 16.8_a$	$2.8 \pm 17.0_a$	$1.5 \pm 12.7_a$	2.59*
Any ED (L)	$2.3 \pm 14.2_a$	$4.7 \pm 21.7_a$	$6.5 \pm 26.3_b$	$5.5 \pm 23.6_a$	$7.4 \pm 27.9_b$	5.71***
Any Bingeing (L)	$3.2 \pm 16.8_a$	$6.5 \pm 25.5_a$	$8.5 \pm 29.8_a$	$10.3 \pm 31.7_a$	$15.3 \pm 38.3_b$	12.65***
Any Purging (L)	$4.6 \pm 19.9_a$	$7.6 \pm 27.4_a$	$16.1 \pm 29.3_b$	$13.3 \pm 35.4_b$	$21.4 \pm 43.5_b$	24.1***
Major Dep (L)	$14.0 \pm 32.9_a$	$13.3 \pm 35.1_a$	$20.3 \pm 43.0_b$	$18.7 \pm 40.6_a$	$25.8 \pm 46.5_b$	6.61***
Major Dep (C)	$8.8 \pm 26.9_a$	$8.2 \pm 28.4_a$	$15.2 \pm 38.4_b$	$12.5 \pm 34.4_a$	$18.6 \pm 41.3_b$	7.70**
Alcohol Abuse (L)	$18.8 \pm 37.0_a$	$12.7 \pm 34.4_b$	$12.2 \pm 34.9_b$	$11.1 \pm 32.8_b$	$12.7 \pm 35.4_b$	5.92***
Alcohol Depend (L)	$7.8 \pm 25.5_a$	$5.2 \pm 22.8_a$	$4.6 \pm 22.5_a$	$2.4 \pm 15.8_b$	$3.8 \pm 20.3_a$	4.11**
Drug Use Ever	$9.7 \pm 37.7_a$	$14.9 \pm 36.8_b$	$11.1 \pm 33.6_{b,c}$	$13.7 \pm 35.8_b$	$8.5 \pm 29.7_{b,c}$	7.2**

well as any direct crime victimization ever (rape, molestation, aggravated assault, surviving homicide). Of note is the finding that following post-hoc Bonferroni t-tests, the major differences among the BMI groups were between the EO group and all the other BMI groups (**Figures 1-4**). Molestation, attempted sexual assault, and aggravated physical assault were not significantly different across groups. While the percentage of those surviving homicide was highest in the EO group, this difference failed to reach statistical significance following post-hoc analyses.

There were also statistically significant differences across BMI groups for both lifetime and current rates of PTSD (**Table 2**). Similarly, women with EO reported significantly higher rates compared to all other BMI groups following post-hoc analyses (**Figures 5 and 6**). In addition, there were significant differences in the prevalence of current and lifetime amnesia, i.e., forgetting all or parts of traumatic experiences. Post-hoc tests again confirmed significantly highest rates in the EO group for both current amnesia (**Figure 7**) and lifetime amnesia. In addition, the 30-<35 BMI group also had significantly higher rates than the lower BMI

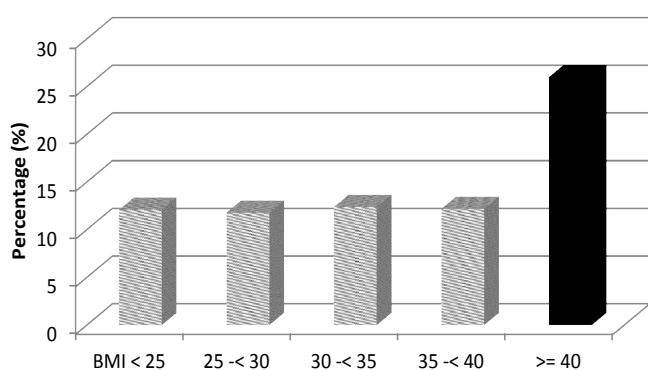


Figure 1 Percent of subjects with rape history by current BMI group ($p \leq 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p \leq 0.05$))

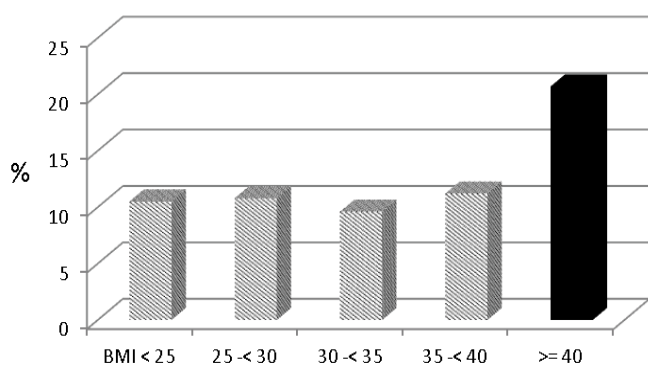


Figure 2 Percent of subjects with any childhood sexual abuse (rape or molestation before age 18) by current BMI group ($p < 0.01$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p \leq 0.05$)).

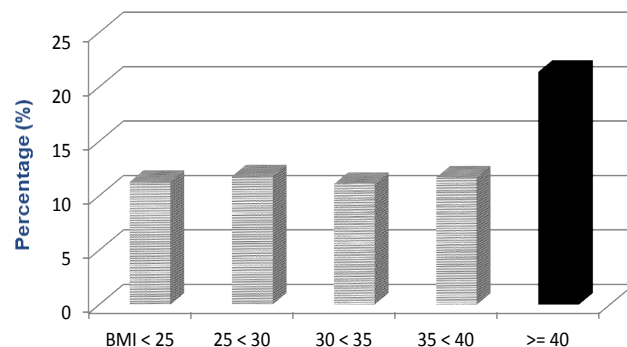


Figure 3 Percent of subjects with any childhood maltreatment (rape, molestation or physical assault before age 18) by current BMI group ($p \leq 0.01$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p \leq 0.05$)).

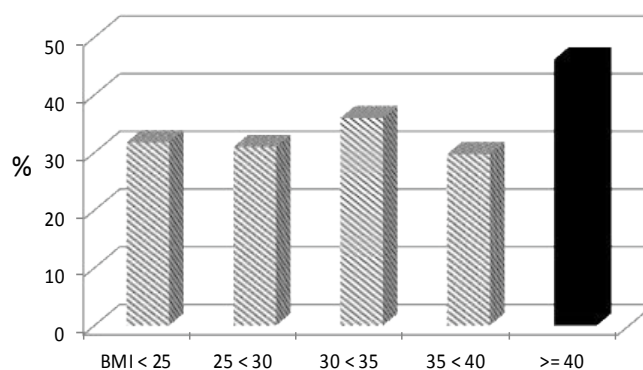


Figure 4 Percent of subjects with any direct crime victimization by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

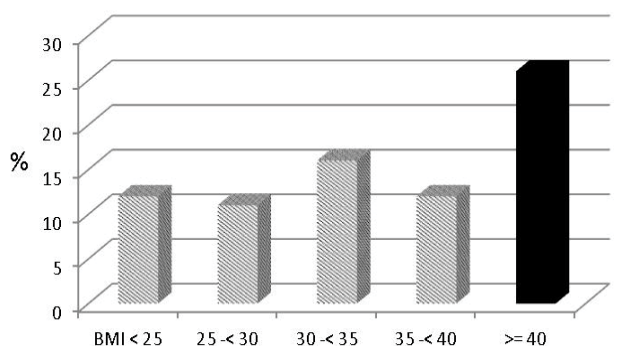


Figure 5 Percent of subjects with lifetime PTSD by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

groups and the 35-<40 BMI group for lifetime amnesia. Significant differences were found across BMI groups for

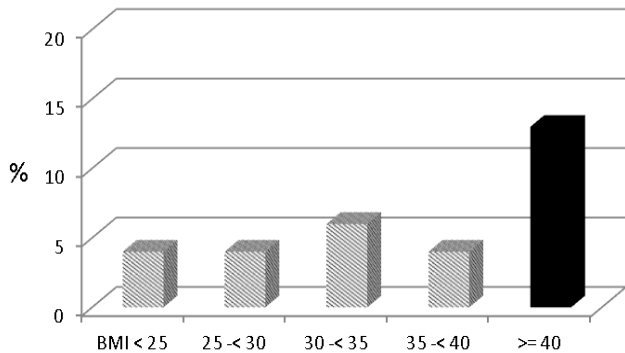


Figure 6 Percent of subjects with current PTSD by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

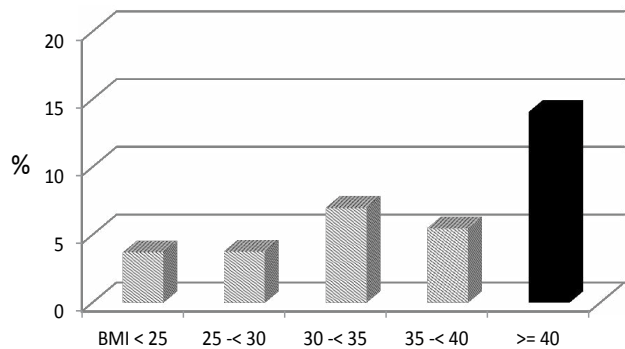


Figure 7 Percent of subjects with current amnesia by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

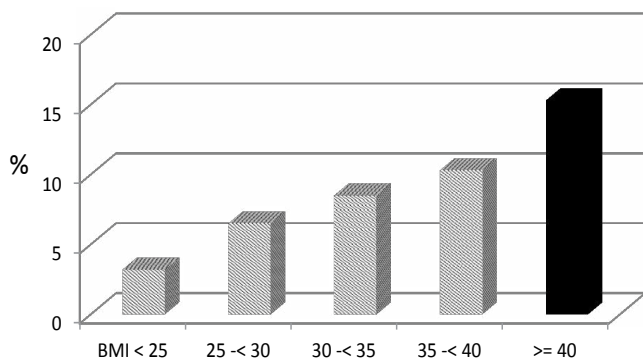


Figure 8 Percent of subjects with any binge eating by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

laxatives or diuretics) for weight loss, ever having BN, and ever having a bulimic spectrum eating disorder (BN or BED) (Table 2). The rates of BED separately were not significantly different across groups. Post hoc comparisons revealed that only those with EO had a significantly higher prevalence of binge eating (Figure 8) and BN (Figure 9) than the other groups, including the normal weight and less obese groups. Rates of ever purging to lose weight were also significantly higher in all of the obese groups (BMI ≥ 30) compared to the normal and overweight groups (Figure 10). Post-hoc tests revealed that the rates of any ED were significantly higher in the EO group and the BMI 30-<35 group.

There were significant differences among BMI groups for the prevalence of both current and lifetime MDD (Table 2). Both current MDD and lifetime MDD rates (Figure 11) were significantly higher in the EO group and the BMI 30-<35 group compared to all other groups (post-hoc Bonferroni t-test, $p < 0.05$).

Results for lifetime alcohol abuse and dependence as well as ever using drugs (marijuana, cocaine, stimulants, depressants, opiates, psychedelics) were all significantly different across BMI groups

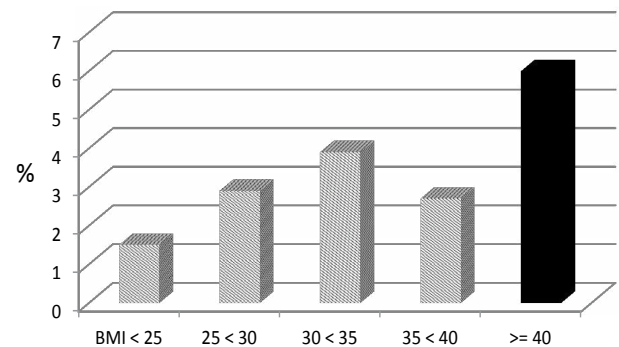


Figure 9 Percent of subjects with bulimia nervosa (BN) by current BMI group ($p < 0.01$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

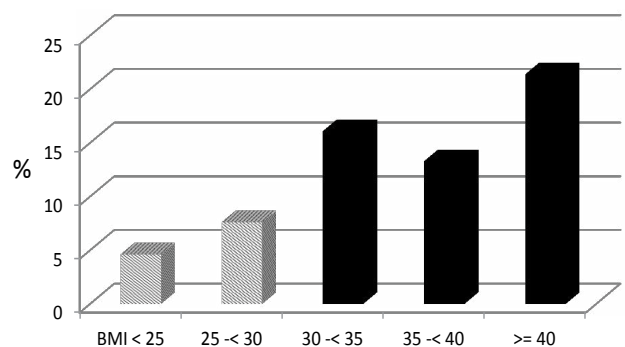


Figure 10 Percent of subjects with any purging (vomiting, laxatives, diuretics to lose weight) by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

prevalence of ever binge eating, ever purging (vomiting, using

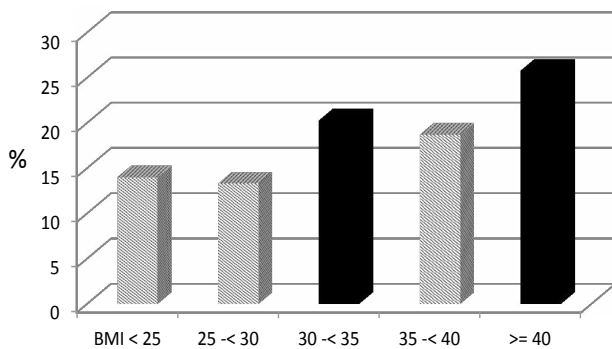


Figure 11 Percent of subjects with lifetime major depressive disorder (MDD) by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

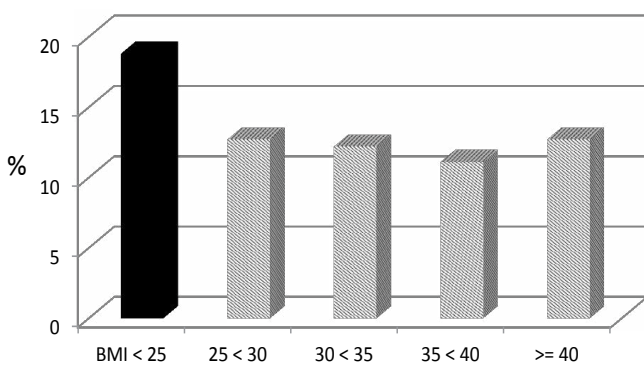


Figure 12 Percent of subjects with alcohol abuse by current BMI group ($p < 0.001$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

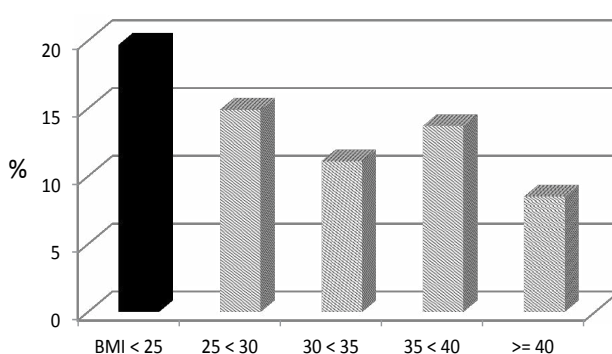


Figure 13 Percent of subjects with any drug use by current BMI group ($p < 0.01$, ANOVA) (solid black column indicates significant difference from other columns following post hoc Bonferroni t-test ($p < 0.05$)).

(Table 2). However, post-hoc analyses indicated significantly higher rates of alcohol abuse (Figure 12) and drug use (Figure

13) in the normal weight group (BMI<25) in comparison to all the other groups (overweight and obese). Prevalence of alcohol dependence was also highest in the normal weight group in comparison to the others except for the BMI 35-<40 group, which had a significantly lower prevalence.

Discussion

In this study of a large representative sample of US women, we have shown that EO is associated with rape, childhood sexual abuse (including rape and molestation before age 18), childhood maltreatment (including rape, molestation and aggravated assault before age 18), homicide survival, or any direct crime victimization. In addition, women with EO had the highest rates of current and lifetime PTSD, current and lifetime MDD, lifetime BN, lifetime binge eating, lifetime purging, and any bulimic spectrum ED than all other individuals regardless of BMI. These results indicate the importance of subtyping degrees of obesity when studying any possible links with prior victimization. Although lesser degrees of obesity, i.e., BMI 30-<35, were also associated with purging, any ED, current and lifetime MDD, and lifetime amnesia, in most analyses the non-extreme categories of obesity were not associated with prior victimization, PTSD, objective bingeing or BN. These results are in contrast to former studies that did not categorize degrees of obesity according to the NHANES III cutoffs, but instead compared dichotomous groups using a single BMI cutoff.

Crime-related trauma, especially sexual assault and associated PTSD, are important risk factors for development of EO, which is often associated with MDD and BN. These results indicate that only EO and not lesser forms of obesity are associated with a history of trauma and associated psychiatric comorbidity including BN. Although it is clear that any childhood sexual or physical abuse predated the age at maximum BMI, it could be that rape and other forms of trauma occurred after reaching maximum BMI. However, the average age at highest BMI was 32.8 (\pm 13.1) years as compared to the average age of first interpersonal traumatic experience (14.9 \pm 8.2 years) (paired t-test, $p < 0.0001$). Furthermore, the first interpersonal traumatic experience predated the age at maximum BMI in 95% of subjects and in 97.5% of the EO cases.

Careful screening for victimization history and psychiatric disorders in the severely obese is warranted. Generally, this is not standard procedure in most bariatric centers or primary care physicians' offices. This is an especially critical issue given the significantly higher rates of current and lifetime amnesia for traumatic memories reported in the EO group, as well as the presence of major depression, eating disorders and PTSD, all of which can be associated with great shame. There is both a high potential for under recognition of prior serious trauma and related psychopathology as well as the potential for overzealousness and risk of false memory induction with repeated and/or unskilled questioning. It is unknown to what extent histories of prior victimization and/or the presence of PTSD will influence the course of treatment for EO. However, this would be an important area for future research. Studies of the effects of prior child abuse on the post-operative course following bariatric surgery have

been mixed [37-39].

There are several limitations of this study, including its reliance on subjects' retrospective recall of past experiences. This introduces the possibility of mistakes or distortions in remembering and/or reporting events and experiences. All collected data were based on self-reported responses, which therefore permit individual biases to possibly hinder objective recounting of experiences.

This study is novel in its examination of a number of variables related to victimization, PTSD, eating disorders and related comorbidity in a nationally representative sample of adult women, but the exclusion of men is a significant limitation that restricts the generalizability of our results to women. Future investigations should include men in the sample in order to explore developmental differences across the sexes. However, it is important to note that other studies have reported associations between obesity, earlier life trauma and subsequent PTSD in men [20,22,40].

The strengths of our study include its representative sample of women across the U.S, which makes it generalizable for the population of women at large. In addition, our study asked about various types of crime victimization, such as rape, molestation, attempted sexual assault, and aggravated assault using detailed, unambiguous, behaviorally specific questions. In addition, we used five different categories of BMI according to NHANES III guidelines instead of just two.

Our findings have clear implications for the clinical assessment of women with obesity, especially EO. Our results suggest the value of screenings for past victimization experiences and the importance of early intervention upon onset of binge eating and purging in the effort to prevent the development of full syndrome bulimic spectrum eating disorders, obesity, and related psychiatric comorbidity, such as PTSD and MDD.

These findings also call for a renewed focus on prevention of crime victimization, especially sexual assault, as part of the

prevention effort against the development of EO, PTSD, MDD, BN and bulimic symptomatology.

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