Comparing Definitions of Purging Disorder on Point Prevalence and Associations with External Validators

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Abstract

Objective—We varied two defining features of Purging Disorder (PD): breadth of "purging" behaviors (purging only [narrow] vs. purging and nonpurging [broad]) and minimum behavioral frequency (once vs. twice per week) to examine their impact on syndrome validity.

Method—Survey data from 1736 women and 755 men were used for analyses.

Results—PD point prevalence was higher in women versus men, and prevalence was lowest for the narrow definition requiring purging twice per week. The narrow definition was associated with significant psychosocial impairment and increased effect sizes in validation analyses. Changing minimum behavioral frequencies did not impact associations with external validators.

Discussion—A broad definition of PD that included any compensatory behavior reduced distinctions between PD and normality. Reducing minimum frequency to once per week did not reduce homogeneity or evidence of syndrome severity. Purging once per week may represent the optimal starting point in defining the central behavioral feature of PD.

Purging Disorder (PD) is characterized by recurrent purging after normal or small amounts of food among individuals with body image disturbance who are not underweight.[1] PD is currently included as an example of an Eating Disorder Not Otherwise Specified (EDNOS) in the DSM-IV-TR,[2] but recent research suggests that PD should be considered for inclusion as a separate provisional diagnostic category in need of further study in the DSM-V.[3,4] Specifically, cross-sectional studies, laboratory research, and latent class analyses suggest that PD is distinct from normality[1,5−11] and Bulimia Nervosa.[1,5,8,11−15] In addition, epidemiological studies indicate that PD affects between 1.1% to 5.3% of women in their lifetimes.[7,16] Thus, introducing PD in the DSM-V has the potential to move a substantial proportion of individuals from the heterogeneous[17] and overpopulated[18] EDNOS category to a potentially meaningful diagnosis.

Including PD in the DSM-V would facilitate research by providing an official definition for the syndrome. Currently, several different definitions have been used,[3,4] ranging from a broadly defined syndrome that includes purging and nonpurging compensatory behaviors[19−22] to studies that restrict the term purging disorder to individuals who engage in self-induced vomiting or abuse of laxatives or diuretics.[1,8,9,16,23] Further, the minimum frequency of purging behaviors has not been well-defined. While several studies have

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required purging at least twice per week,[1,8,16,23] some have included individuals who purge at least once per week,[14] and others have not specified a minimum frequency.[19] The lack of consensus on how to define the central behavioral feature of PD in the literature invariably leads to inconsistent findings across studies. In addition, it is unclear which, if any, of the previously employed definitions would be best for inclusion in the DSM-V. The current study was designed to compare different potential definitions for PD to examine their impact on the point prevalence of PD as well as their ability to discriminate individuals with PD from non-eating disorder controls on external validators.

Based on patterns observed across previous studies,[7,9,16,19,23] we hypothesized that prevalence estimates would be greater for broader definitions than for more narrow definitions of the syndrome. In addition, given that 10–15% of eating disorders occur in men[2,24] and that the most recent epidemiological study in the US supported a significantly higher prevalence of eating disorders in women compared to men,[25] we hypothesized that prevalence estimates would be greater in women than in men. We did not have specific *a priori* definitions regarding which definitions would demonstrate stronger associations with external validators. If narrow definitions produce a more homogeneous group, then they might demonstrate stronger associations with external validators by reducing variability within the PD group. Conversely, if broad definitions do not reduce the homogeneity of the identified group, then association strength will not diminish as group size increases. Instead, associations may be more likely to be statistically significant due to increased sample size and power. Data come from an epidemiological study that utilized random sampling across three cohorts drawn from the same university in 1982, 1992, and 2002 (see Keel et al.[26] for details). A prior study reported no significant change in PD point prevalence from 1990 to 2004;[23] however, the present study spanned a longer time frame over which changes in Bulimia Nervosa point prevalence have been found.[26] Thus, we conducted exploratory analyses to examine whether point prevalence estimates for PD differed across cohorts.

METHOD

Participants

Undergraduate men ($n = 1200$) and women ($n = 2400$) from a selective northeastern university were randomly selected in the springs of 1982,[27] 1992,[28] and 2002[26] to complete a survey of health and eating patterns (see original reports for additional recruitment details). Overall, participation rates were high; 72% of women ($n = 1736$) and 63% of men ($n = 755$) completed the survey. Participants ranged in age from 16–45 years (M=20.0; SD=1.7) and had a mean (SD) body mass index (BMI) of 22.07 (2.9) kg/m². This sample was primarily Caucasian (71.0%); 6.8% were African American, 13.4% were Asian, 5.4% were Hispanic, and 0.6% identified as "other." This study was reviewed and approved by an institutional review board, and all participants completed and returned a written consent document.

Measures

All participants completed a self-report survey of health and eating patterns that included questions regarding current height and weight and eating disorder symptoms. BMI was calculated from self-reported height and weight. Several studies suggest that self-reported height and weight are reliable and valid for epidemiological studies.[29–31] Participants were asked about current use and weekly frequency of the following behaviors: binge eating, self-induced vomiting, laxative abuse, diuretic abuse, diet pill use, and fasting. Compulsive exercise was added to this list in surveys for the 1992 and 2002 cohorts. For purging and nonpurging behaviors, participants were specifically asked about their use to influence shape or weight. The Drive for Thinness subscale of the Eating Disorder Inventory (EDI)[32] was

used to assess overconcern with weight, as described in its use to diagnose bulimia nervosa in this sample.[26] Drive for Thinness has been shown to differentiate eating disorder patients from general psychiatric patients.[33] Internal consistency of this scale was $\alpha = 0.92$ in this study.

In addition to comparing groups on BMI, external validators in this study included satisfaction with social relationships and educational functioning (both rated on a seven-point likert scale from 1=not at all satisfied to 7=completely satisfied) as indicators of psychosocial functioning, perfectionism as a personality feature that is a risk factor for eating disorders, and daily cigarette and alcohol use. Perfectionism was assessed using the Perfectionism subscale of the EDI.[32] Internal consistency of this scale was $\alpha = 0.75$ in this study.

Definitions of Purging Disorder

All definitions of purging disorder (PD) required body image disturbance, no current binge eating, and a BMI greater than 18.5 kg/m^2. Binge episodes were excluded to avoid capturing individuals better characterized as having full- or sub-threshold Bulimia Nervosa. Similarly, a BMI threshold of 18.5 kg/m^2 was used to avoid capturing individuals better conceptualized by Anorexia or Partial Anorexia with purging. Of note, nature of body image disturbance, absence of subjective binge episodes, and minimum BMI, did not vary across definitions examined in the current study. Thus, current analyses do not address the validity of these definitional features.

Four definitions were created that varied on two dimensions: group of compensatory behaviors and minimum frequency of behavior. Two groups of compensatory behaviors were examined: 1) purging (self-induced vomiting, laxative abuse, or diuretic abuse), and 2) any compensatory behaviors (self-induced vomiting, laxative abuse, diuretic abuse, diet pills, fasting, or compulsive exercising). Each group of compensatory behaviors was examined at two frequency thresholds: 1) minimum behavioral frequency of twice per week, and 2) minimum behavioral frequency of once per week. These variations capture key differences in definitions of PD used by previous studies.[3,4] Non-eating disorder controls included participants who did not meet diagnostic criteria for any eating disorder (see Keel et al.[26] for all eating disorder definitions). All diagnoses were made by computer algorithms applied to survey-based symptoms.

Using a two-stage design, participants were later recruited to participate in semi-structured clinical interviews (SCID-I)[34] in which interviewers were blind to survey-based diagnoses. Overall agreement between survey and interview-based eating disorder diagnoses was excellent ($\kappa = 0.80$), and the specificity and sensitivity of surveys were 0.89 and 0.91, respectively, using structured interviews as the gold standard. Given this high level of agreement, and considering that only a subset of participants completed structured interviews in the case-control design ($n = 408$), survey-based diagnoses were used to increase sample size and corresponding statistical power.

Analyses

Point prevalence was assessed by calculating frequencies for each definition in women and men, and a χ^2 statistic was used to examine gender differences. Impairment associated with each definition was assessed using independent-samples *t*-tests comparing each diagnostic group to non-eating disorder controls. Due to potentially differing prevalence rates across definitions, and corresponding differences in statistical power, Cohen's *d* was calculated to allow a more precise assessment of the effect size for each comparison. A χ^2 statistic was

used to examine cohort differences on point prevalence. All statistics were conducted in SPSS 15.0 for Windows.

RESULTS

Point Prevalence

Table 1 presents the point prevalence for each definition of PD in women and men in bold as well as estimates by cohort. Point prevalence in women ranged from 0.6% for the most narrow definition that required purging twice per week to 5.5% for the most broad definition that required compensatory behaviors (purging or nonpurging) at least once per week. Thus, as expected, point prevalence increased as the definition became more inclusive; approximately 9 times as many women met criteria for the broadest definition of PD compared to the narrowest definition.

Point prevalence ranged from 0.1% to 1.8% in men. Although prevalence estimates in men were higher for broad definitions using compensatory behaviors rather than purging only, estimates did not vary based on the minimum behavioral frequency criterion. The same men who were engaging in compensatory or purging behaviors at least once per week also engaged in these behaviors at least twice per week. Results indicate that approximately 6% – 16% of individuals with PD are male, depending on the definition used. Consistent with other eating disorders, PD point prevalence estimates were significantly greater in women compared to men for the narrow definition requiring purging at least once per week ($\chi^2(1) =$ 4.81, $p < .05$) and broad definitions requiring compensatory behaviors at least once ($\chi^2(1) =$ 10.61, $p < .01$) or twice per week ($\chi^2(1) = 5.12$, $p < .05$). This gender difference was observed at a trend level for the narrow definition requiring purging at least twice per week ($\chi^2(1) = 2.74$, $p = .098$). Notably, this definition was associated with the least number of cases, and lack of significance may be due to reduced statistical power. Comparisons across cohorts are described below under Exploratory Analyses.

External Validators

External validator analyses were conducted on the combined sample of men and women to increase statistical power. Analyses restricted to women were associated with the same pattern of results with no meaningful changes in effect size. There were no significant differences in BMI between PD and non-eating disorder controls for any definition of PD (all ps > .28). Among individuals with any definition of PD, BMI ranged from 18.83 – 29.11 kg/m^2, with a mean (SD) of 22.32 (2.33) kg/m^2, and 10.7% would be considered overweight (i.e., BMI > 25 kg/m^2). Table 2 presents comparisons of psychosocial variables between non-eating disorder controls and PD across different definitions of PD.[a] Participants with PD defined by purging reported significantly more impairment in social relationships and educational functioning, and significantly more perfectionism compared to non-eating disorder control participants for both frequency thresholds. According to guidelines set by Cohen,[35] effect sizes were medium ($d = -.50$) to very large ($d = -1.40$). Despite the larger number of cases associated with definitions that required compensatory behaviors, participants with PD according to these definitions only differed significantly from non-eating disorder controls on perfectionism, and corresponding effect sizes were small ($d = -.17$) to almost medium ($-.43$). Thus, restricting the definition of PD to purging behaviors rather than compensatory behaviors was associated with greater impairment relative to

[a]All comparisons with PD defined by any compensatory behavior utilized only data from the 1992 and 2002 cohorts. There were no significant differences in most external validators between 1982 and 1992–2002 controls. In addition, cohort differences that were observed cannot explain overall results as they should have contributed to larger effect sizes in comparisons restricted to the 1992–2002 cohorts.

controls. In contrast, these validators did not discriminate between minimum behavioral frequencies of twice versus once per week. No significant differences were found for cigarette and alcohol use between PD and non-eating disorder controls for any definition of PD; however, observed effect sizes indicate that analyses were likely underpowered for cigarette use.

Exploratory Analyses

There was a significant effect of cohort for women using the narrowest purging definition with a minimum behavioral frequency of twice per week ($\chi^2(2) = 7.58$, $p < .05$). Cohort comparisons indicated that point prevalence of PD using the most narrow definition decreased significantly from 1982 to 1992 ($\chi^2(1) = 7.10$, $p < .01$); however, there were no significant differences in point prevalence rates between the 2002 cohort and either the 1992 cohort ($\chi^2(1) = 3.10$, $p = .08$) or the 1982 cohort ($\chi^2(1) = 1.58$, $p = .21$). There were no significant effects of cohort for other definitions of PD in women (all $p > .07$). Finally, there were no significant effects of cohort for men for any definition (all $p > .32$). Thus, with the exception of lower point prevalence for PD defined by purging at least twice per week in the 1992 female cohort, point prevalence estimates appeared to be stable over time.

DISCUSSION

The ideal definition of PD should not be too narrow where most people with an eating disorder are still diagnosed with an EDNOS. Nor should it be overly inclusive so that we are increasing diagnostic heterogeneity or overpathologizing normal variation. Point prevalence estimates indicate that including a broad range of compensatory eating behaviors in the definition of PD could reduce the number of individuals relegated to an EDNOS diagnosis. However, estimates suggest that this definition would label as "pathological" current behavioral patterns of approximately 1 in 20 college women. Further, analyses of external validators suggest that definitions that include a range of compensatory behaviors result in a more heterogeneous group that shows less robust distinctions from non-eating disorder controls on indicators of dysfunction compared to definitions that require purging behaviors.

While the external validators examined in this study distinguished between types of behaviors used in the definition of PD, they did not discriminate between minimum frequencies of behaviors. Within a narrow definition of purging, requiring behaviors at least once per week or twice per week was associated with nearly equivalent effect sizes in comparisons with the non-eating disorder group. These results are consistent with previous research finding no significant differences between EDNOS patients who purge twice per week and those who purge less frequently[36] or between threshold and subthreshold frequencies of compensatory behaviors in the absence of binge eating.[21] Given evidence that reducing minimum frequency of purging behaviors does not reduce syndrome homogeneity or clinical significance and the goal of forming a definition that is not overly narrow, results support setting the minimum frequency of purging behaviors to once per week.

Consistent with a previous study,[23] there was no significant change in PD point prevalence from 1992 to 2002 for any definition. PD point prevalence decreased from 1982 to 1992 in women using the most narrow definition in which purging was required at least twice per week. However, interpretation of this finding is difficult as there was no significant difference between the 1982 and 2002 cohorts for this definition, indicating no reliable linear decrease over time. In addition, adjusting the minimum frequency to once per week resulted in a non-significant change in rates across cohorts. Thus, decreased prevalence from 1982 to 1992 may be a spurious finding. Of note, overall results indicated distinct

epidemiological patterns for PD compared to those observed for Bulimia Nervosa in this sample,26 further supporting the validity of PD as a separate diagnostic entity.

The inclusion of a large sample of men and women, random sampling of college students, and comparison of definitions on external validators represent significant strengths of the present study. Indeed, the current study is the first to report prevalence rates of PD in men and gender differences for this syndrome. Gender differences are consistent with findings for Anorexia Nervosa and Bulimia Nervosa, suggesting that approximately 6% – 16% of individuals who suffer from PD are male. Thus, while PD is far more common in women than men, findings indicate that men should be examined in future research on PD. Interestingly, varying the minimum frequency criterion did not impact prevalence rates in men. This suggests that there may be a larger point of rarity between men who do and do not engage in recurrent purging behaviors to control weight or shape.

Despite these strengths, results should be interpreted in the context of several limitations. First, although sample size was large and random sampling was used, all participants were college students from a selective, northeastern university. Thus, caution should be used when generalizing findings to non-college or older individuals. Tempering this concern, our estimates of point prevalence were consistent with previous epidemiological studies. Previous studies reported point prevalence rates between 0.64%19 and 2.0%9 in women. We found very similar estimates using a narrow definition of purging in our large, random sample of college students (0.6% – 0.9%). Of note, PD point prevalence using a narrow definition of purging required at least twice per week (0.6% in women in the present study) is very similar to 0.8% reported in Crowther et al.,23 using the same criteria. Thus, converging prevalence estimates when utilizing similar diagnostic criteria across varying study groups support generalizability of study findings.

A second limitation is that all diagnoses were based on self-report surveys. Previous research37¯39 and our own analyses support concurrent validity between survey-based and interview-based assessments of purging. However, it is possible that self-report assessments of fasting and compulsive exercise (nonpurging compensatory behaviors) that are not objectively defined for participants are more susceptible to misinterpretation and less psychometrically sound than interview-based assessments. Of note, we found good agreement between survey and interview-based assessments across a range of eating disorder definitions. In addition, reliance on available survey data led us to use Drive for Thinness as a proxy for overconcern with weight and to exclude individuals who purged following subjective binge episodes. Previous research indicates that many individuals with PD have subjective binge episodes.8,14,36 However, survey did not include adequate questions to reliably discriminate subjective from objective binge episodes. This led to a conservative approach in which we eliminated participants who reported any binge eating from a diagnosis of PD, and, thus, our prevalence estimates likely underestimate how common PD is. In addition, some of the criteria used in the current study may not be the best indicators for a formal definition of PD. Data collection for the current study began in 1982, before publication of eating disorder specific assessments, such as the Eating Disorder Examination (EDE),40 which would allow for comparison of definitions among multiple dimensions. Future studies utilizing assessments such as the EDE will be important for evaluating the impact of including subjective binge episodes on the homogeneity and clinical significance of PD. This work could also enhance our understanding of the nature of body image disturbance that best characterizes individuals with PD. In the current study, these criteria were held constant across definitions of PD and cannot account for our pattern of findings. Finally, a wider range of external validators are needed to further support a qualitative distinction between narrow and broad definitions of PD. Future research is

needed to examine family history, health care utilization, and other indices of distress and impairment as external validators of varying definitions of PD.

The present study provides support for a meaningful distinction between PD defined by purging only (self-induced vomiting, laxative abuse, diuretic abuse) and a broader definition that encompasses any compensatory behavior (self-induced vomiting, laxative abuse, diuretic abuse, diet pill use, fasting, compulsive exercise). Results suggest that a broader definition would introduce heterogeneity among individuals with PD, reducing distinctions between PD and normality. In contrast, external validators did not distinguish between definitions with a minimum behavioral frequency of once versus twice per week. Given these results, purging in the form of self-induced vomiting, laxative abuse, or diuretic abuse at least once per week may represent the optimal starting point for defining the central behavioral feature of PD in future nosological schemes.

Acknowledgments

References

1. Keel PK, Haedt A, Edler C. Purging disorder: An ominous variant of bulimia nervosa? Int J Eat Disord. 2005; 38:191–199. [PubMed: 16211629]

2. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders Fourth Edition - Text Revision (DSM-IV-TR). American Psychiatric Association; Washington, D.C.: 2000.

3. Keel PK. Purging disorder: Subthreshold variant or full-threshold eating disorder? Int J Eat Disord. 2007; 40:S89–S94. [PubMed: 17868124]

4. Keel, PK.; Striegel-Moore, RH. The validity and clinical utility of purging disorder. in preparation

5. Striegel-Moore RH, Franko DL, Thompson D, Barton B, Schreiber GB, Daniels SR. An empirical study of the typology of bulimia nervosa and its spectrum variants. Psychol Med. 2005; 35:1563–1572. [PubMed: 16219114]

6. Mond J, Hay P, Rodgers B, Owen C, Crosby R, Mitchell J. Use of Extreme Weight Control Behaviors with and without Binge Eating in a Community Sample: Implications for the Classification of Bulimic-Type Eating Disorders. Int J Eat Disord. 2006; 39:294–302. [PubMed: 16528679]

7. Wade TD, Bergin JL, Tiggemann M, Bulik CM, Fairburn CG. Prevalence and long-term course of lifetime eating disorders in an adult Australian twin cohort. Aust N Z J Psychiatry. 2006; 40:121–128. [PubMed: 16476129]

8. Keel PK, Wolfe BE, Liddle RA, Young KP, Jimerson DC. Clinical features and physiological response to a test meal in purging disorder and bulimia nervosa. Arch Gen Psychiatry. 2007; 64:1058–1066. [PubMed: 17768271]

9. Fink EL, Smith AR, Gordon KH, Holm-Denoma JM, Joiner TE. Psychological correlates of purging disorder as compared with other eating disorders: An exploratory investigation. Int J Eat Disord. 2009; 42:31–39. [PubMed: 18636542]

10. Keel PK, Wolfe BE, Gravener JA, Jimerson DC. Co-morbidity and disorder-related distress and impairment in purging disorder. Psychol Med. 2008; 38:1435–1442. [PubMed: 17825120]

11. Pinheiro AP, Bulik CM, Sullivan PF, Machado PP. An empirical study of the typology of bulimic symptoms in young portugese women. Int J Eat Disord. 2008; 41:251–258. [PubMed: 18095310]

12. Sullivan PF, Bulik CM, Kendler KS. The epidemiology and classification of bulimia nervosa. Psychol Med. 1998; 28:599–610. [PubMed: 9626716]

13. Keel PK, Mayer SA, HarndenFischer JH. Importance of size in defining binge eating episodes in bulimia nervosa. Int J Eat Disord. 2001; 29:294–301. [PubMed: 11262508]

14. Binford RB, le Grange D. Adolescents with bulimia nervosa and eating disorder not otherwise specified-purging only. Int J Eat Disord. 2005; 38:157–161. [PubMed: 16134105]

15. Wade TD. A retrospective comparison of purging type disorders: Eating disorder not otherwise specified and bulimia nervosa. Int J Eat Disord. 2007; 40:1–6. [PubMed: 16958118]

16. Favaro A, Ferrara S, Santonastaso P. The spectrum of eating disorders in young women: A prevalence study in a general population sample. Psychosom Med. 2003; 65:701–708. [PubMed: 12883125]

17. Wilfley DE, Bishop ME, Wilson GT, Agras WS. Classification of eating disorders: Toward DSM-V. Int J Eat Disord. 2007; 40:S123–S129. [PubMed: 17685383]

18. Walsh BT. DSM-V from the perspective of the DSM-IV experience. Int J Eat Disord. 2007; 40:S3–S7. [PubMed: 17573695]

19. Machado PPP, Machado BC, Goncalves S, Hoek HW. The prevalence of eating disorders not otherwise specified. Int J Eat Disord. 2007; 40:212–217. [PubMed: 17173324]

20. Tobin DL, Griffing A, Griffing S. An examination of subtype criteria for bulimia nervosa. Int J Eat Disord. 1997; 22:179–186. [PubMed: 9261657]

21. Spoor STP, Stice E, Burton E, Bohon C. Relations of bulimic symptom frequency and intensity to psychosocial impairment and health care utilization: Results from a community-recruited sample. Int J Eat Disord. 2007; 40:505–514. [PubMed: 17607700]

22. Sancho C, Arija MV, Asorey O, Canals J. Epidemiology of eating disorders: A two year follow up in an early adolescent school population. Eur Child Adolesc Psychiatry. 2007; 16:495–504. [PubMed: 17876510]

23. Crowther JH, Armey M, Luce KH, Dalton GR, Leahey T. The point prevalence of bulimic disorders from 1990 to 2004. Int J Eat Disord. 2008; 41:491–497. [PubMed: 18433014]

24. Carlat DJ, Camargo CA. Review of bulimia nervosa in males. Am J Psychiatry. 1991; 148:831–843. [PubMed: 2053621]

25. Hudson JI, Hiripi E, Pope HG Jr. Kessler RC. The prevalence and correlates of eating disorders in the national comorbidity survey replication. Biol Psychiatry. 2007; 61:348–358. [PubMed: 16815322]

26. Keel PK, Heatherton TF, Dorer DJ, Joiner TE, Zalta AK. Point prevalence of bulimia nervosa in 1982, 1992, and 2002. Psychol Med. 2006; 36:119–127. [PubMed: 16202192]

27. Zuckerman DM, Colby A, Ware NC, Lazerson JS. The prevalence of bulimia among college students. Am J Public Health. 1986; 76:1135–1137. [PubMed: 3461714]

28. Heatherton TF, Nichols P, Mahamedi F, Keel P. Body weight, dieting, and eating disorder symptoms among college students, 1982 to 1992. Am J Psychiatry. 1995; 152:1623–1629. [PubMed: 7485625]

29. Imrhan SN, Imrhan V, Hart C. Can self-estimates of body weight and height be used in place of measurements for college students? Ergonomics. 1996; 39:1445–1453.

30. Spencer EA, Appleby PN, Davey GK, Key TJ. Validity of self-reported height and weight in 4808 EPIC-Oxford participants. Public health nutrition. 2002; 5:561–565. [PubMed: 12186665]

31. Stunkard AJ, Albaum JM. The accuracy of self-reported weights. The American journal of clinical nutrition. 1981; 34:1593–1599. [PubMed: 7270483]

32. Garner DM, Olmstead MP, Polivy J. Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. Int J Eat Disord. 1983; 2:15–34.

33. Hurley JB, Palmer RL, Stretch D. The specificity of the Eating Disorders Inventory: A reappraisal. Int J Eat Disord. 1990; 9:419–424.

34. First, M.; Spitzer, RL.; Gibbon, M.; Williams, JBW. Structured Clinical Interview for DSM-IV Axis I Disorders--Patient Edition (SCID/P). Biometrics Research Department: New York State Psychiatric Institute; 1996.

35. Cohen J. A power primer. Psychol Bull. 1992; 112:155–159. [PubMed: 19565683]

36. Eddy KT, Doyle AC, Hoste RR, Herzog DB, le Grange D. Eating disorder not otherwise specified in adolescents. Journal of the American Academy of Child & Adolescent Psychiatry. 2008; 47:156–164. [PubMed: 18176335]

37. Fairburn CG, Beglin SJ. Studies of the epidemiology of bulimia nervosa. Am J Psychiatry. 1990; 147:401–408. [PubMed: 2180327]

38. Keel PK, Crow S, Davis TL, Mitchell JE. Assessment of eating disorders: Comparison of interview and questionnaire data from a long-term follow-up study of bulimia nervosa. J Psychosom Res. 2002; 53:1043–1047. [PubMed: 12445594]

39. Field AE, Taylor CB, Celio A, Colditz GA. Comparison of Self-Report to Interview Assessment of Bulimic Behaviors among Preadolescent and Adolescent Girls and Boys. Int J Eat Disord. 2004; 35:86–92. [PubMed: 14705161]

40. Cooper Z, Fairburn C. The Eating Disorder Examination: A semi-structured interview for the assessment of the specific psychopathology of eating disorders. Int J Eat Disord. 1987; 6:1–8.

Table 1

Point Prevalence across Varying Definitions of Purging Disorder

	Purging				Compensatory Behavior[1]			
	2/week		1/week		2/week		1/week	
	n	%	n	%	n	%	n	%
Women	**11**	**0.6**	**16**	**0.9**	**42**	**4.1**	**57**	**5.5**
1982	8	1.3	10	1.6	--	--	--	--
1992	0	0.0	2	0.4	21	4.1	30	5.8
2002	3	0.6	4	0.8	21	4.1	27	5.3
Men	**1**	**0.1**	**1**	**0.1**	**8**	**1.8**	**8**	**1.8**
1982	0	0.0	0	0.0	--	--	--	--
1992	1	0.4	1	0.4	3	1.4	3	1.4
2002	0	0.0	0	0.0	5	2.2	5	2.2

[1] Definitions using any compensatory behaviors were only diagnosed in the 1992 and 2002 cohorts

Table 2

Comparisons of Psychosocial Variables Between Purging Disorder using Different Definitions and a Non-Eating Disorder Comparison Group

Definition	Frequency	Satisfaction with Relationships		Satisfaction with School		Perfectionism		Cigarette Use[1]		Alcohol Use[1]	
		t (df)	d	t (df)	d	t (df)	d	t (df)	d	t (df)	d
Purging	2/wk	−2.19 (933)*	−1.27	−3.67 (11.33)**	−.68	3.92 (2054)***	1.14	.94 (2061)	.27	−.13 (2045)	−.04
Purging	1/wk	−3.43 (936)***	−1.40	−2.08 (2019)*	−.50	4.02 (2059)***	.98	.89 (2066)	.22	.15 (2050)	.04
CB	2/wk	−1.82 (602)	−.43	−1.20 (1326)	−.17	2.79 (1334)**	.40	1.48 (50.48)	.33	.58 (1336)	.08
CB	1/wk	−1.40 (608)	−.29	−1.74 (68.07)	−.25	2.47 (1349)*	.31	1.58 (66.51)	.31	.69 (1351)	.09

Note: Purging includes self-induced vomiting, laxative abuse, or diuretic abuse to influence weight; CB = Compensatory behavior, including purging, diet pill use, fasting, and compulsive exercise; positive effect sizes indicate that the diagnostic group scored higher on the scale than the non-ED comparison group.

[1] Analyses for cigarette and alcohol use utilized square-root transformed values to correct for negative skew

*
p < .05

**
p < .01

***
p < .001