

Eating Disorder Examination Questionnaire (EDE-Q): Norms for Undergraduate Women

Kristine H. Luce, PhD^{1*}
Janis H. Crowther, PhD²
Michele Pole, MA²

ABSTRACT

Objective: This research presents normative data on the Eating Disorder Examination Questionnaire (Fairburn and Beglin, *Int J Eat Disorder*, 16, 363-370, 1994) (EDE-Q) for samples of undergraduate women in the United States.

Method: College women ($N = 723$), ages 18–25, completed the EDE-Q as part of a larger assessment battery.

Results: Average scores, standard deviations, and percentile ranks for the raw Restraint, Eating Concern, Shape Concern, and Weight Concern subscales and the Global score are reported. Data on the occurrence of objective and subjec-

tive bulimic episodes and compensatory behaviors are presented.

Conclusion: These results are helpful for clinicians and researchers in the interpretation of the EDE-Q scores of undergraduate women in the United States. Comparisons are drawn between the results for this sample and those of a United Kingdom sample of young adolescent females, an Australian community sample, and an Australian community age-matched sample. © 2008 by Wiley Periodicals, Inc.

Keywords: EDE-Q; Undergraduate women

(*Int J Eat Disord* 2008; 41:273–276)

Introduction

The Eating Disorder Examination Questionnaire¹ (EDE-Q), derived from the Eating Disorder Examination interview² (EDE), is a self-report questionnaire widely used to assess the key attitudes and behavioral features of eating disorders (EDs). Because the EDE has been extensively researched and is well regarded for its psychometric properties, it is considered the “gold standard” for assessment of ED pathology.³ Nevertheless, the EDE has several disadvantages, including the extensive training needed for interviewers,⁴ the length of time needed for administration, and, as with all clinical interviews, its inappropriateness for group administration.^{1,3} As an efficient and cost-effective alternative, the EDE was adapted to a self-report version, the EDE-Q.¹

Research suggests the EDE-Q may be an acceptable alternative to the EDE.^{1,5} Because of its psycho-

metric properties and clinical utility, it is recommended for use to identify probable ED cases.^{5,6} However, norms are needed for interpretation. Two studies present normative data for a United Kingdom sample, ages 12–14 years,⁷ and an Australian community sample, ages 18–42 years.⁶ Although the latter norms⁶ may be applicable to young adult women in the United States, Mond et al. concluded that levels of eating psychopathology may vary across countries and their community sample may not generalize to a college student sample. Given the prevalence of EDs among college women⁸ and the resources required to screen and assess women on college campuses,^{9,10} normative data is useful. Thus, this research presents normative EDE-Q data for college women in the U.S.

Method

Participants were 723 undergraduate women [Age: $M = 18.7$ years, $SD = 1.2$; Body Mass Index (BMI): $M = 22.6$, $SD = 3.9$; Ethnicity: 88% Caucasian; 7.8% African-American; 1.1% Hispanic; 0.7% Asian-American; and, 2.5% other] enrolled in general psychology at a large Midwestern university who volunteered to participate, for credit in their General Psychology course, in one of two studies that used the EDE-Q as one of several measures. Given our interest in establishing college student norms,

Accepted 10 October 2007

*Correspondence to: Kristine H. Luce, Ph.D., Stanford University, Department of Psychiatry and Behavioral Sciences, 401 Quarry Road, Stanford, CA 94305-5722. E-mail: kluce@stanford.edu

¹ Department of Psychiatry and Behavioral Sciences, Stanford University, Stanford, California

² Department of Psychology, Kent State University, Kent, Ohio

Published online 22 January 2008 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/eat.20504

© 2008 Wiley Periodicals, Inc.

TABLE 1. EDE-Q descriptive data and percentile ranks for raw EDE-Q Global and subscale scores for undergraduate women (N = 723)

	Global Score	Restraint	Eating Concern	Shape Concern	Weight Concern
Mean (SD)	1.74 (1.30)	1.62 (1.54)	1.11 (1.11)	2.27 (1.54)	1.97 (1.56)
Percentile rank					
5	0.05	—	—	—	—
10	0.13	—	—	0.13	—
15	0.24	—	0.20	0.50	0.20
20	0.38	—	0.20	0.63	0.20
25	0.58	0.20	0.20	0.88	0.60
30	0.81	0.40	0.28	1.13	0.80
35	1.01	0.48	0.40	1.50	1.00
40	1.21	0.80	0.60	1.73	1.20
45	1.40	1.00	0.60	1.88	1.60
50	1.64	1.20	0.80	2.13	1.80
55	1.82	1.40	0.80	2.38	2.00
60	2.02	1.80	1.00	2.75	2.20
65	2.19	2.20	1.20	3.08	2.60
70	2.43	2.60	1.40	3.37	3.00
75	2.66	2.80	1.80	3.63	3.20
80	2.89	3.00	2.00	3.75	3.60
85	3.24	3.40	2.20	4.00	3.80
90	3.57	3.80	2.60	4.38	4.20
95	4.07	4.40	3.60	4.85	4.80
99	5.00	5.40	4.60	5.47	5.40

participants older than 25 years ($n = 38$) were excluded. Comparisons of the participants in the two studies on age, BMI, and ethnicity yielded significant differences on age, $t(721) = 2.09, p < .05, d = .17$, but not BMI, $t(716) = 1.66, p > .05$, or ethnicity, $\chi^2(4) = 6.57, p > .15$. Given the small effect size for age, these differences most likely reflect minor temporal differences in data collection periods (Sample 1: $M = 18.6$ years, $SD = 1.1$; Sample 2: $M = 18.8$ years, $SD = 1.2$) and are not clinically meaningful.

Following informed consent, participants completed the EDE-Q, a 41-item, self-report measure that assesses attitudes, feelings, and behaviors related to eating and body image over the past 28-days. The EDE-Q measures criteria for clinical EDs, making a tentative diagnosis possible. It yields a Global score and four subscale scores: Restraint, Shape Concern (SC), Weight Concern (WC), and Eating Concern (EC). The Global score is the average of the four subscale scores. Among undergraduate women, internal consistencies range from .78 for EC to .93 for SC; test-retest correlations range from .81 to .94 for the four subscales and from .57 to .70 for the frequency of key behavioral features, including binge eating, self-induced vomiting, and laxative misuse.¹¹

With respect to convergent validity between the EDE and the EDE-Q, research reports moderate to high correlations between the Restraint, SC, and WC subscales in community and patient samples¹ and all four subscales in adolescent and adult patients with EDs,^{4,5,12,13} although the EDE-Q subscale scores may be consistently higher than the EDE subscale scores.^{4,5,13} Although Fairburn and Beglin¹ concluded that the EDE-Q may overestimate the frequency of key behavioral features such as

objective binge eating (OBE), subsequent research on predominantly patient samples has found either no differences between the EDE and EDE-Q^{12,13} or that ED samples report a greater frequency of OBEs on the EDE⁵ or a significantly greater number of days with OBEs on the EDE⁴ compared with the EDE-Q.

Results

With respect to missing data, only .005% of item responses required to score the EDE-Q subscales was missing. Missing item responses were replaced with the mean item score.

Table 1 presents descriptive data and percentile ranks for the EDE-Q Global and four subscale scores for this sample. Independent t -tests comparing EDE-Q scores from the present sample to Mond et al.'s⁶ community sample of 18 to 22-year-old women (Global: $M = 1.59, SD = 1.32$; Restraint: $M = 1.29, SD = 1.41$; EC: $M = 0.87, SD = 1.13$; SC: $M = 2.29, SD = 1.68$; WC: $M = 1.89, SD = 1.60$) yielded significant differences on Global, $t(1,907) = 2.44, p < .05$; Restraint, $t(1,907) = 4.67, p < .001$; and EC, $t(1,907) = 4.54, p < .001$, with women in the current sample reporting significantly greater scores on these scales. **Table 1** also presents percentile ranks for the raw EDE-Q Global and subscale scores for this sample. Using a cut-off ≥ 4.0 ^{6,7} for clinical significance, 7.9% scored in the clinically significant range on Restraint, 2.2% on EC, 14.8% on SC, 10.2% on WC and 5.6% on the Global Scale.

TABLE 2. Proportion of women engaging in any or regular occurrence of key eating and compensatory behaviors

Key Behavior	Any Occurrence (%)	Regular Occurrence (%)
Objective binge episodes	21.3	6.4
Subjective binge episodes	32.1	16.7
Self-induced vomiting	8.8	4.0
Laxative misuse	8.3	3.1
Diuretic misuse	6.6	3.6
Excessive exercise	30.8	5.9
Dietary restraint	25.9	8.4

Note: For regular occurrence, excessive exercise was defined as exercising vigorously "as a means of controlling your weight, altering your shape or amount of fat, or burning off calories" (i.e., EDE-Q No. 28) for an average of at least five times per week over the past 28 days.⁶ For regular occurrence, dietary restraint was defined as going "for long periods of time (≥ 8 h) without eating anything to influence your shape or weight" (EDE-Q No. 2) for an average at least three times per week over the past 28 days. For the remaining behaviors, regular occurrence was defined as at least once per week over the past 28 days.

Table 2 presents the percentages of women who reported any occurrence and regular occurrence of key ED behavioral features and compensatory behaviors. Results indicated that 6.4% and 16.7% of the participants reported regular occurrence of OBEs and subjective bulimic episodes, respectively. Greater percentages of women engaged in regular dietary restraint (8.4%) and excessive exercise (5.9%) than self-induced vomiting (4.0%), laxative (3.1%) and diuretic (3.6%) misuse.

Conclusion

Although the EDE-Q is widely used,^{14,15} this is, to our knowledge, the first study to present normative EDE-Q data for undergraduate women in the U.S. Compared with Mond et al.'s⁶ Australian age-matched sample, our U.S. sample reported significantly higher scores on the Global, Restraint, and EC subscales. Yet, with respect to binge eating, although the percentages reporting SBEs were comparable (i.e., 16.4% vs. 16.7%), a greater proportion of Mond et al.'s⁶ sample reported OBEs (i.e., 12.1% vs. 6.4%). For compensatory weight control strategies, with the exception of the regular use of excessive exercise (5.9% of this sample compared with 7.1% of the Australian sample), greater proportions of our sample reported dietary restraint (8.4% vs. 4.7%), self-induced vomiting (4.0% vs. 2.1%), laxative use (3.1% vs. 0.8%), and diuretic use (3.6% vs. 0.3%) on a regular basis.

The similarities and differences between the current U.S. sample and the Australian sample are not entirely surprising because the behavioral features of EDs are known to fluctuate within individuals¹⁶ and between sites or samples.^{14,17} Nevertheless,

one possible explanation for the differences might be that the Australian sample, although similar in age, was a community sample and was not necessarily comprised of undergraduate women. Given the prevalence of appearance concerns on college campuses,^{14,15} dietary restraint and other compensatory weight control strategies may be more normative in this environment; these compensatory behaviors may be more easily shaped by peers who also might restrict their food intake during communal meals in university dining facilities or who share information about weight control strategies in residence halls. Research by Crandall¹⁷ suggested there were significant social influences to conform to normative levels of binge eating within two sororities on a large university campus. Given research suggesting that peer modeling of abnormal eating behaviors may be related to the onset of binge eating and purging,¹⁸ these same social influences may operate for compensatory weight control strategies.

These findings confirm that substantial proportions of young adult females are concerned about their weight and shape. In our sample of undergraduate women, 14.8% scored in the clinically significant range on SC and 10.2% on WC. Using the same cut-off, Mond et al.⁶ reported that 19.4% and 11.3% of their entire community sample scored in the clinically significant range on the SC and WC subscales and Carter et al.⁷ reported that 13% and 20% of their adolescent sample scored in this range on SC and WC. Although Mond et al.'s⁶ findings suggest the importance of addressing body image concerns through middle adulthood, our findings and those of Carter et al.⁷ document the continued need for prevention and early intervention among adolescent and young adult populations.

In conclusion, this study presents normative EDE-Q data for undergraduate women in the U.S. that will aid interpretation of EDE-Q scores for diagnosis, prevention, and intervention. There are several strengths of this study. For example, the sample is large and representative of typical samples recruited from college undergraduate populations. One limitation is that the sample was drawn from one university with limited ethnic diversity. Further research is needed to establish norms with greater ethnic and regional diversity.

References

1. Fairburn CG, Beglin SJ. Assessment of eating disorders: Interview or self-report questionnaire? *Int J Eat Disord* 1994;16:363-370.

2. Fairburn CG, Cooper Z. The eating disorder examination. In: Fairburn CG, Wilson GT, Editors. *Binge Eating: Nature, Assessment and Treatment*, 12th ed. New York: Guilford Press, 1993, pp. 317–360.
3. Garner DM. Measurement of eating disorder psychopathology. In: Brownell KD, Fairburn CG, Editors. *Eating Disorders and Obesity: A Comprehensive Handbook*. New York: Guilford Press, 1995, pp. 117–121.
4. Wilfley DE, Schwartz MB, Spurrell EB, Fairburn CG. Assessing the specific psychopathology of binge eating disorder patients: Interview or self-report? *Behav Res Ther* 1997;35:1151–1159.
5. Binford RB, Le Grange D, Jellar CC. Eating disorders examination versus eating disorders examination-questionnaire in adolescents with full and partial-syndrome Bulimia Nervosa and Anorexia Nervosa. *Int J Eat Disord* 2005;37:44–49.
6. Mond JM, Hay PJ, Rodgers B, Owen C. Eating disorder examination questionnaire (EDE-Q): Norms for young adult women. *Behav Res Ther* 2006;44:53–62.
7. Carter JC, Stewart DA, Fairburn CG. Eating Disorder Examination Questionnaire: Norms for young adolescent girls. *Behav Res Ther* 2001;39:625–632.
8. 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.
9. Becker AE, Franko, DL, Nussbaum K, Herzog DB. Secondary prevention for eating disorders: The impact of education, screening and referral in a college-based screening program. *Int J Eat Disord* 2004;36:157–162.
10. Taylor CB, Cameron RP, Newman MG, Junge J. Issues related to combining risk factor reduction and clinical treatment for eating disorders in defined populations. *J Behav Health Serv Res* 2002;29:81–90.
11. Luce KH, Crowther JH. The reliability of the Eating disorder examination—Self-report Questionnaire Version (EDE-Q). *Int J Eat Disord* 1999;25:349–351.
12. Grilo CM, Masheb RM, Wilson GT. A comparison of different methods for assessing the features of eating disorders in patients with binge eating disorder. *J Consult Clin Psychol* 2001;69:317–322.
13. Grilo CM, Masheb RM, Wilson GT. Different methods for assessing the features of eating disorders in patients with binge eating disorder: A replication. *Obes Res* 2001;9:418–422.
14. Celio CI, Luce KH, Bryson SW, Winzelberg AJ, Cuning DS, Rockwell R, et al. Use of diet pills and other dieting aids in a college population with high weight and shape concerns. *Int J Eat Disord* 2006;39:492–497.
15. Taylor CB, Bryson S, Luce KH, Cuning D, Doyle AC, Abascal LB, et al. Prevention of eating disorders in at-risk college-age women. *Arch Gen Psychiatry* 2006;63:881–888.
16. Tozzi F, Thornton LM, Klump KL, Fichter MM, Halmi KA, Kaplan AS, et al. Symptom fluctuation in eating disorders: Correlates of diagnostic crossover. *Am J Psych* 2005;162:732–740.
17. Crandall CS. Social contagion of binge eating. *J Pers Soc Psychol* 1988;55:588–598.
18. Stice E. Modeling of eating pathology and social reinforcement of the thin-ideal predict onset of bulimic symptoms. *Behav Res Ther* 1998;36:931–944.