

UCSF

UC San Francisco Previously Published Works

Title

Psychometric properties of the Parent Eating Disorder Examination Questionnaire.

Permalink

<https://escholarship.org/uc/item/1m02w244>

Journal

International Journal of Eating Disorders, 56(9)

Authors

Drury, Catherine

Hail, Lisa

Rienecke, Renee

et al.

Publication Date

2023-09-01

DOI

10.1002/eat.23999

Peer reviewed



Published in final edited form as:

Int J Eat Disord. 2023 September ; 56(9): 1730–1742. doi:10.1002/eat.23999.

Psychometric Properties of the Parent Eating Disorder Examination Questionnaire

Catherine R. Drury¹, Lisa Hail², Renee D. Rienecke^{3,4,5}, Erin C. Accurso^{2,6}, Jennifer S. Coelho^{7,8}, James Lock⁹, Daniel Le Grange^{2,6}, Katharine L. Loeb^{10,11}

¹School of Psychology, Fairleigh Dickinson University, 1000 River Road, T-WH1-01, Teaneck, NJ 07666, USA;

²Department of Psychiatry and Behavioral Sciences, University of California, San Francisco, 401 Parnassus Avenue, San Francisco, CA 94143, USA;

³Eating Recovery Center/Pathlight Mood & Anxiety Center, 333 North Michigan Avenue, Suite 1900, Chicago, IL 60601, USA;

⁴Department of Psychiatry and Behavioral Sciences, Northwestern University, 446 East Ontario Street, Chicago, IL 60611, USA;

⁵Department of Psychiatry, University of Michigan, 1500 East Medical Center Drive, Ann Arbor, MI 48109; USA;

⁶Department of Psychiatry and Behavioral Neuroscience, The University of Chicago, Billings Hospital, 5841 South Maryland Avenue, Chicago, IL 60637, USA

⁷Provincial Specialized Eating Disorders Program for Children and Adolescents, BC Children's Hospital, 4500 Oak Street, Vancouver, BC V6H 3N1, CA;

⁸Department of Psychiatry, University of British Columbia, 2255 Wesbrook Mall, Vancouver BC V6T 2A1

⁹Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, 401 Quarry Road, Stanford, CA 94305, USA;

katharine.loeb@cceb.com .
Author Contributions

Catherine R. Drury: Data curation; methodology; formal analysis; writing – original draft, review and editing. **Lisa Hail:** Data curation; methodology; writing – original draft, review and editing. **Renee D. Rienecke:** Resources; writing – review and editing. **Erin C. Accurso:** Resources; writing – review and editing. **Jennifer S. Coelho:** Resources; writing – review and editing. **James Lock:** Resources; writing – review and editing. **Daniel Le Grange:** Resources; writing – review and editing. **Katharine L. Loeb:** Conceptualization; methodology; funding acquisition; resources; supervision; writing – original draft, review and editing.

Conflict of Interest Statement

Ms. Drury, Dr. Hail, Dr. Coelho, and Dr. Lock declare they have no financial interests. Dr. Rienecke receives royalties from Routledge and consulting fees from the Training Institute for Child and Adolescent Eating Disorders, LLC. Dr. Accurso is a faculty member of the Training Institute for Child and Adolescent Eating Disorders, LLC. Dr. Le Grange receives royalties from Routledge and Guilford Press. He is also co-director of the Training Institute for Child and Adolescent Eating Disorders, LLC, and is a member of Equip Health Clinical Advisory Board. Dr. Loeb receives royalties from Routledge and is a faculty member of and consultant for the Training Institute for Child and Adolescent Eating Disorders, LLC.

Ethics Approval/Patient Consent Statement

This study was determined to qualify as exempt by Fairleigh Dickinson University's Institutional Review Board (IRB). Any parent studies from which data were derived for secondary analyses included informed consent/assent and were approved by site-specific IRBs.

¹⁰Chicago Center for Evidence-Based Treatment, 25 East Washington Street, Suite 1015, Chicago, IL 60602, USA;

¹¹Icahn School of Medicine at Mount Sinai, 1 Gustave L. Levy Place, New York, NY 10029, USA

Abstract

Objective: To examine the psychometric properties of the Parent Eating Disorder Examination Questionnaire (PEDE-Q), developed to improve eating disorder (ED) assessment among youth by including parents as informants.

Method: A multi-site, transdiagnostic sample of 355 adolescents with EDs completed the Eating Disorder Examination Questionnaire (EDE-Q) and their parents completed the PEDE-Q.

Results: The internal consistencies of the PEDE-Q subscales were on par with established EDE-Q ranges (.73 to .90), both when examined using the original four-factor EDE-Q subscales and the seven-item, three-factor subscales of the brief EDE-Q. Statistically significant medium- to large-sized correlations and poor to moderate levels of agreement were found between the corresponding EDE-Q and PEDE-Q subscales. Receiver-operator characteristic (ROC) curves showed that the PEDE-Q had a statistically significant area under the curve (AUC) to maximize sensitivity and specificity in diagnosing full-syndrome AN, whereas the EDE-Q did not. Based on chi-square analyses, the PEDE-Q identified a statistically significantly greater number of AN cases than the EDE-Q. The EDE-Q yielded a BN diagnosis more frequently than the PEDE-Q, although this difference was not statistically significant.

Discussion: Results suggest that the PEDE-Q has good psychometric properties and provides incremental information that can aid in the assessment and diagnosis of adolescents with EDs, particularly those with AN.

Keywords

eating disorders; anorexia nervosa; bulimia nervosa; assessment; adolescents; parents

Introduction

Eating disorders (EDs) are associated with significant cost and burden at the individual, familial, and societal levels and drastically reduce quality of life across a variety of domains (Ágh et al., 2016). ED incidence is higher in younger age groups (Deloitte Access Economics, 2020; Mitchison et al., 2020), placing adolescents at particular risk for the physical, psychological, and social impairment implicated in these disorders at a critical stage of growth and development (Micali et al., 2014; Neale et al., 2020; Stice et al., 2013). While EDs that present in adolescence can persist into adulthood and become severe and enduring in course, prognosis is more favorable for those cases that are identified closer to the time of illness onset (Allen et al., 2013; Bravender et al., 2007; Reas et al., 2000). At the same time, there exist unique challenges to ED case identification in its early stages and during childhood and adolescence (Becker et al., 2009; Couturier & Lock, 2006; Forney et al., 2017; Lebow et al., 2018; Le Grange et al., 2012; Loeb, Brown, et al., 2011; Loeb, Jones, et al., 2011; Micali & House, 2011; Vandereycken & Van Humbeeck, 2008; Viglione et al., 2006), necessitating ED assessment methods specifically tailored to the adolescent patient.

Denial of symptoms or symptom severity is a core feature of many ED presentations (Vandereycken & Van Humbeeck, 2008) that is especially likely among adolescents with EDs (Couturier & Lock, 2006; Loeb, Jones, et al., 2011; Viglione et al., 2006). Children and adolescents might deny or minimize their symptoms to avoid the potential consequences of treatment and parental intervention, or because of developmentally specific limitations in their appreciation for the long-term repercussions of risky behaviors, including risky eating behaviors (Loeb, Brown, et al., 2011). Moreover, certain constructs of the ED diagnostic criteria require a capacity for abstract reasoning and emotional awareness that many young people are still developing (Becker et al., 2009; Bravender et al., 2007; Micali & House, 2011). Regardless of its underlying mechanisms, this underreporting complicates assessment and early treatment, thus increasing risk for chronicity and psychosocial impairment into adulthood.

The use of multiple informants is recommended in the assessment of childhood psychopathology (De Los Reyes et al., 2015; Kraemer et al., 2003) and, in light of the factors outlined above, may be particularly useful in the assessment of childhood EDs (Salbach-Andrae et al., 2008). Informants typically include parents, teachers, clinicians, and patients themselves, who can report on patients' behavior in a variety of contexts and from the different perspectives fostered by each informant's unique relationship to the patient (De Los Reyes et al., 2015). While the level of agreement between multiple informants is regularly only low to moderate (De Los Reyes et al., 2015), a systematic integration of the data will yield a more comprehensive assessment than reliance on patient report alone (De Los Reyes et al., 2015; Kraemer et al., 2003).

In the assessment of children and adolescents with EDs, parents are able to observe behaviors indicative of the psychological components of illness and notice evidence of behavioral symptoms that youth may not fully disclose (Loeb, Brown, et al., 2011). Previous studies have made minor adjustments to existing measures of ED pathology for their use with parents and compared parent ratings to youth scores. When interviewing youth with restrictive EDs and their parents, Couturier and colleagues (2007) found that parents reported more ED symptoms than their children, while Mariano and colleagues (2013) found good concordance between youth and parent informants. On a brief questionnaire measure of ED psychopathology, Accurso and Waller (2021b) found moderate youth-caregiver agreement for most ED attitudes and behaviors, although caregivers endorsed greater levels of dieting than their child while youth endorsed more driven exercise. However, when youth with binge-purge EDs have been assessed via interview, they reported more ED symptoms than their parents and produced scores that were not significantly different from ratings by clinicians (Couturier et al., 2007; Mariano et al., 2013). Overall, this limited body of literature underscores the value of including parents as informants in the assessment of youth with EDs and calls for parent-child measures that mirror one another in terms of wording and time period assessed.

To this end, Loeb and colleagues developed parent versions of the Eating Disorder Examination (EDE; Fairburn & Cooper, 1993) (PEDE) and the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994, 2008) (PEDE-Q) in collaboration with the original measures' developer. While child and adolescent versions of these measures

were previously developed (Carter et al., 2001; Decaluwé & Braet, 2004; Goldschmidt et al., 2007), none included parents' perspectives. A recent study by our group (Hail et al., 2023) examined the PEDE's performance when administered to parents of a clinical sample of youth with restrictive EDs. The reliability of the PEDE as measured by Cronbach's alpha (range = .44 to .85) and the PEDE's convergent validity or association and level of agreement with the EDE were in the range of what has been published for the EDE. Furthermore, the lack of a strong convergence (moderate Pearson correlations and poor to moderate intraclass correlation coefficients) between the PEDE and EDE scores suggested that parents provide different information from that obtained from youth self-report. Indeed, when examined diagnostically based on the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) criteria for AN, the PEDE identified a greater proportion of cases than the EDE.

While interviews are preferred to self-report questionnaires in the assessment of EDs (Fairburn & Beglin, 1994), there are several advantages to questionnaire measures that justify their use (Decaluwé & Braet, 2004; Fairburn & Beglin, 1994). The primary objective of this study was to examine the psychometric properties of the PEDE-Q in a multi-site sample of youth with EDs. Specifically, this study sought to examine the reliability (i.e., internal consistency) of the PEDE-Q subscales and global score. The PEDE-Q's convergent validity, or its relationship with an established measure of the same constructs (i.e., the EDE-Q), and the PEDE-Q's criterion validity (i.e., its ability to predict full-syndrome ED cases) were also assessed. An additional aim was to compare rates of ED diagnosis based on parent report (PEDE-Q) versus youth report (EDE-Q) in a sample diagnosed with EDs by an ED clinician. It was hypothesized that:

1. **Reliability:** Cronbach's alpha reliability coefficients for the EDE-Q and PEDE-Q subscales would be consistent with those previously established for the EDE-Q, which ranged from .70 to .93 (Berg, Peterson, et al., 2012; Grilo et al., 2015).
2. **Convergent Validity:** There would be a small, positive correlation and moderate agreement between the PEDE-Q subscales and the corresponding subscales of the EDE-Q. A significant positive relationship would indicate that the subscales are tapping into a similar construct. The lack of a good or excellent level of agreement may provide evidence that each reporter offers incremental information as part of a comprehensive ED assessment.
3. **Criterion Validity:** The PEDE-Q would more accurately identify a full-syndrome ED diagnosis than the EDE-Q among participants with both full- and partial-syndrome EDs.
4. **Diagnostic Agreement:** The PEDE-Q would identify more clinically significant cases of AN and BN than the EDE-Q.

Method

Participants

Participants were youth and parent informants who presented to research-based ED treatment programs at five academic medical centers across the United States and Canada.

Researchers at each site administered both the EDE-Q and the PEDE-Q as part of a routine research or clinical assessment and contributed deidentified baseline data to this study. ED diagnoses were assigned using a semi-structured clinical interview administered by licensed mental health providers, or under the supervision of a licensed mental health provider, and based on the criteria of the DSM-IV (American Psychiatric Association, 2000) or DSM-5, depending on the site or study. Some sites used median BMI to estimate expected body weight (EBW) while others based EBW on return to individualized historical growth patterns.

Data from the five sites were merged into an overall sample ($N = 476$), which was reduced to a clinical sample of youth with DSM-IV or DSM-5 AN or BN, DSM-IV eating disorder not otherwise specified (EDNOS), DSM-5 other specified feeding and eating disorder (OSFED), or a site-specific research category of subsyndromal AN (SAN; Loeb et al., 2020). SAN participants, a research-specific presentation that would fall under EDNOS/OSFED, were defined as youth at high risk for AN by virtue of meeting partial AN criteria with no prior history of AN. Because the overall sample was derived from clinical series and randomized controlled trials (RCTs) that focused on more restrictive eating disorders with shape and weight concerns, our resulting participant set did not include individuals with binge eating disorder (BED) or avoidant/restrictive food intake disorder (ARFID). Exclusion criteria were age under 12 or over 18; an ED diagnosis outside of AN, BN, EDNOS/OSFED, or SAN; or missing EDE-Q and/or PEDE-Q. These criteria excluded 28% ($n = 121$) of the original sample.

The final, transdiagnostic sample consisted of 355 youth between the ages of 12 and 18 ($M = 15.5$; $SD = 1.7$) with AN (41.4%, $n = 147$), SAN (11.6%, $n = 41$), BN (30.7%, $n = 109$), or EDNOS or OSFED (16.3%, $n = 58$). From this final sample, a subsample of youth with AN-spectrum restrictive EDs was also identified ($n = 211$; 59.4% of the total sample) for use in the criterion validity and diagnostic agreement analyses described below. This was done to capture a broader group characterized by clinically significant AN symptoms, which in youth can carry particular diagnostic ambiguity (Becker et al., 2009; Bravender et al., 2007; Couturier & Lock, 2006; Loeb, Brown, et al., 2011; Loeb, Jones, et al., 2011; Micali & House, 2011; Viglione et al., 2006). This subset consisted of participants with diagnosed AN and SAN, as well as participants with other forms of EDNOS/OSFED ($n = 23$) who had engaged in dietary restriction leading to a below-expected weight (percent EBW < 100%) and who did not meet criteria for BN or BED. In addition, a BN-spectrum subsample (BN $n = 144$; BN EDNOS/OSFED $n = 5$) was identified to specifically assess criterion validity in these disorders.

The majority of participants were parent- or self-identified as female (93%) and White (75.1%), with 9.6% identifying as Hispanic, 6.2% as Asian, 2.8% as Black, 5.1% as biracial, and 1.1% as other. Most PEDE-Qs were completed by participants' mothers (84%); 7.5% of questionnaires were completed by fathers, 7.5% were completed collaboratively by multiple caregivers, and 1.1% were completed by a non-parent caregiver. Average duration of illness was 1.4 years ($SD = 1.3$). Other participant and caregiver demographic information was not reported consistently across sites.

Participants' percent EBW ($M = 105.4$; $SD = 22.9$) was calculated using site-generated EBW and the weight reported by the clinician when available; otherwise, the weight reported by the parent was used. A paired samples t -test revealed no significant difference between clinician-measured weight and parent-reported weight in cases where both values were provided ($n = 163$; $t(162) = -1.24$; $p = .22$, $d = -0.10$).

Measures

Eating Disorder Examination Questionnaire (EDE-Q) Version 6.0—The EDE-Q (Fairburn & Beglin, 1994, 2008; Mond et al., 2014) is a measure of ED pathology based on the Eating Disorder Examination interview (EDE; Fairburn & Cooper, 1993). Concentrating on the past 28 days, the most recent version of the questionnaire comprises 28 items that ask participants to rate on a 0 to 6 scale the frequency or severity of ED symptoms, behaviors, and beliefs. Respondents rate eight severity items using a 7-point rating scale (0 = “Not at all;” 6 = “Markedly”), while 14 key ED cognitions and behaviors are measured in terms of the number of days on which they occur (0 = “No days;” 6 = “Every day”). The measure also assesses for six binge eating and compensatory behaviors by asking respondents to fill in the appropriate number of days or times that they have engaged in those behaviors.

EDE-Q Subscales: Specific EDE-Q items are averaged together to create four subscales: Restraint, Eating Concern, Shape Concern, and Weight Concern. These subscales are also averaged together to calculate an overall global score. While the EDE-Q has been found to have high reliability and validity (Berg, Peterson, et al., 2012), numerous studies have failed to replicate its theoretically proposed four-factor structure in factor analyses (Jenkins & Rienecke, 2022). Thus, Grilo and colleagues (2013) developed a brief, seven-item, three-factor structure supported by factor analysis; the resulting subscales are Dietary Restraint, Shape/Weight Overvaluation, and Body Dissatisfaction. Across samples, these modified subscales have demonstrated improved internal consistency and convergent and discriminant validity, with less overlap and redundancy than the original EDE-Q subscales (Grilo et al., 2015). Despite consistent support for this brief version, the global score generated by the longer EDE-Q and its four subscales remains a widely used measure of ED pathology, particularly as an indicator of treatment outcome (Jenkins & Rienecke, 2022; Machado et al., 2018).

Parent Eating Disorder Examination Questionnaire (PEDE-Q)—The PEDE-Q version 1.4 asks parents to report on ED symptoms and behaviors that they have observed in their child in the previous 28 days. Its content and scoring scheme mirror those of the EDE-Q. In responding to the questionnaire, parents are asked to give their best estimate, considering what they know about their child, what they have observed in their child, and what others might have told them about their child. Under these guidelines, parents use a 7-point scale to rate their child's symptoms in terms of severity (0 = “Not at all;” 6 = “Markedly”) or frequency (0 = “No days;” 6 = “Every day”). Parents also indicate the frequency of binge eating and purging. While many questions relate to a child's internal experience, items for which there are clear behavioral indicators of the corresponding ED symptoms prompt for those indicators. Table 1 highlights sample items that were most elaborated to prompt for behavioral indicators of eating, weight, and shape concerns, binge

eating, and compensatory behaviors. In addition to reporting their child's age, weight, and height, parents indicate whether or not their child is currently at their thinnest. If their child has lost weight, parents respond to questions regarding their child's reactions to their weight (e.g., "Have they expressed verbally that they want to be thinner than a normal weight?"; "Have they rejected advice or prescription to increase their weight or to stop losing weight?"). The PEDE-Q version 1.4 was developed from the EDE-Q version 6.0 and used by all participating sites for the present study.

PEDE-Q Subscales: Consistent with the EDE-Q, the PEDE-Q produces four subscales (Restraint, Eating Concern, Shape Concern, and Weight Concern) and an overall global score. As the PEDE-Q's psychometric properties have not yet been established using either the original four-factor subscales or the seven-item, three-factor subscales of the brief EDE-Q, both factor structures were included in the current study's reliability and convergent validity analyses.

Statistical Analyses

Reliability – Internal Consistency—All statistical analyses were conducted using IBM SPSS Statistics for Mac, Version 27.0. To evaluate the internal consistency of the original (i.e., four-factor) and three-factor subscales and global score of the EDE-Q and PEDE-Q, Cronbach's alpha coefficients were used. As suggested by George and Mallery (2003), Cronbach's alpha values less than .5 were considered unacceptable, greater than or equal to .5 poor, greater than or equal to .6 questionable, greater than or equal to .7 acceptable, greater than or equal to .8 good, and greater than or equal to .9 excellent.

Convergent Validity—The convergent validity of the PEDE-Q was assessed through its relationship and level of agreement with the EDE-Q. Bivariate Pearson correlations were calculated between the EDE-Q and PEDE-Q subscales (original and three-factor) and global scores for the entire, transdiagnostic sample. According to Cohen's (1988) conventions, .10 was considered a weak or small correlation, .30 medium, and .50 or larger strong or large. The level of agreement between the EDE-Q and PEDE-Q subscales and global scores was measured using a two-way random effects model (absolute agreement, average measures) intraclass correlation coefficient (ICC), with observations nested within patient-caregiver dyads. Based on the 95% confidence interval of the ICC estimate, values less than .5 were considered evidence of poor agreement, between .5 and .75 moderate agreement, between .75 and .90 good agreement, and greater than .90 excellent agreement (Koo & Li, 2016).

Criterion Validity – ROC Curves—Using clinician diagnosis as a benchmark for presumed accuracy, the criterion validity of the PEDE-Q and EDE-Q global scores were evaluated with receiver-operator characteristic (ROC) curves. This methodology plots each score's sensitivity against its false-positive rate (i.e., 1-specificity) to test its performance in predicting ED diagnosis. The area under the curve (AUC) summarizes the predictor's overall accuracy and identifies the point or threshold at which each predictor achieves the greatest degree of sensitivity and specificity. ROC curve analyses were conducted to determine which measure had the greatest AUC and yielded the maximum combination of sensitivity and specificity in predicting a diagnosis of full-syndrome AN from the AN-spectrum

subsample and a diagnosis of full-syndrome BN from the subsample of participants with BN and non-restrictive EDNOS/OSFED. For the purposes of the AN analysis, diagnoses were dichotomized into full-criteria AN and restrictive/AN-spectrum designations (SAN/EDNOS/OSFED). The parallel BN-spectrum ROC analysis could not be conducted because of the limited variability in the sample, with only 5 BN-negative (i.e., BN of limited frequency and/or duration) of 149 possible participants (3%). The optimal cutoff was defined as the score that maximized sensitivity and specificity. Following guidelines from Swets (1988), AUC values $.50$ were defined as non-informative, $.51-.70$ less accurate, $.71-.90$ moderately accurate, and $.91-.99$ highly accurate.

Diagnostic Agreement—The diagnostic agreement between the PEDE-Q and EDE-Q was assessed using previously developed algorithms (Berg, Stiles-Shields, et al., 2012; Loeb et al., 2020), chi-squared tests, and Cohen's kappa. Diagnostic items on these measures were dichotomized based on clinical cut-off scores (Berg, Peterson, et al., 2012; Carter et al., 2001) such that a rating of 0–3 indicated that the item was not diagnostically severe and a rating of 4–6 indicated diagnostic severity (see Table 2 for the full criteria and items used to assess diagnostic agreement). Because all participants in the AN-spectrum subsample were clinically underweight, only those items that correspond to DSM-5 criteria B (i.e., Fear of Weight Gain) and C (i.e., Feelings of Fatness and/or Importance of Shape and/or Importance of Weight) were examined.

To assess diagnostic agreement for BN, all DSM-5 criteria were dichotomized based on the frequency and severity of the PEDE-Q and EDE-Q items that correspond to each criterion. Criteria A and C were considered to have been met if participants or their parents reported eating an unusually large amount of food and experiencing a sense of loss of control over eating at least four times in the past 28 days (i.e., at least once per week). Self-induced vomiting frequency (at least four times in the past 28 days) was the only compensatory behavior considered for Criterion B because it is the most frequently reported among adolescents (Binford & Le Grange, 2005), and other forms of compensatory behaviors were not consistently reported across sites (these items did not inform the subscale or global scores). Notably, of those participants who did report engaging in another compensatory behavior ($n = 21$; specifically, laxative misuse or diet pill use), all but three (85.7%) were also vomiting. Items corresponding to Criterion D (i.e., importance of shape and importance of weight) were considered diagnostically significant using the clinical cut-off scores described above.

Chi-squared tests compared the diagnostic frequency of the PEDE-Q to that of the EDE-Q, exclusively among those participants diagnosed with a restrictive ED or BN by an ED clinician using a semi-structured clinical interview. Greater diagnostic frequency was considered to represent greater diagnostic accuracy based on the assumption of the clinician-assigned diagnosis as the gold standard benchmark for these analyses. Cohen's kappa values were then derived between the PEDE-Q and the EDE-Q. As recommended by Landis and Koch (1977), kappa values of 0 to $.2$ were considered slight agreement, $.21$ to $.40$ fair, $.41$ to $.60$ moderate, $.61$ to $.80$ substantial, and $.81$ to 1.0 almost perfect.

Results

Reliability - Internal Consistency

Table 3 shows the descriptive statistics and Cronbach's alpha coefficient values for the entire sample. Cronbach's alpha coefficients ranged from good to excellent (.80 to .95) for the original EDE-Q subscales and global score and acceptable to excellent (.73 to .90) for the PEDE-Q. When examined using the three-factor subscales, the internal consistency of the EDE-Q was good to excellent (.84 to .91); Cronbach's alpha coefficient values for the three-factor subscales of the PEDE-Q fell in the good range (.81 to .83).

Convergent Validity

Tables 4 and 5 provide the results of bivariate Pearson correlations and estimates of inter-rater agreement (ICCs) between the EDE-Q and PEDE-Q subscales and global scores. Transdiagnostically, there were significant medium- to large-sized Pearson correlations (range = .41 to .53) and moderate agreement (ICC range = .58 to .69) between the corresponding original subscales and global scores. All of the original PEDE-Q subscales were most highly correlated with their respective EDE-Q subscales with the exception of the PEDE-Q Eating Concern subscale. Likewise, all three-factor PEDE-Q subscales most highly correlated with the corresponding three-factor EDE-Q subscales (range = .32 to .45). ICCs showed moderate agreement between the Restraint and Body Dissatisfaction subscales (ICC = .59); there was poor agreement between the Shape/Weight Overvaluation subscales (ICC = .46).

Criterion Validity – AN ROC Curves

Figure 1 displays the ROC curve results for the PEDE-Q and EDE-Q global scores, and a third curve that used the greater of the two global scores as the predictor (i.e., maximum global score). This third variable was included because given the seriousness of EDs and their potential to become worse or chronic (Micali et al., 2014; Neale et al., 2020; Stice et al., 2013), an initial false positive diagnosis is considered to carry less risk than a false negative. The maximum global score ranged from 0.21 to 5.76 ($M = 3.38$; $SD = 1.47$) and was generated by the PEDE-Q global score (range = 0.00 to 5.76) for 55.5% of participants ($n = 117$) and by the EDE-Q global score (range = 0.00 to 5.64) for 44.5% of participants ($n = 94$). The average difference between the PEDE-Q and EDE-Q global scores was 1.16 ($SD = 0.96$; range = 0.01 to 5.24).

The PEDE-Q global score AUC (AUC = .59, 95% confidence interval: .50-.67, $p = .04$) and the maximum global score AUC (AUC = .61, 95% confidence interval: .53-.70, $p = .01$) were significant, but not the EDE-Q AUC. Both the PEDE-Q global score and the maximum global score AUCs fell within the less accurate range, with a 59% and 61% chance, respectively, of distinguishing between cases of full-syndrome and subsyndromal AN. The PEDE-Q global score had a cutoff of 3.83 (sensitivity = .34, specificity = .75) for predicting a diagnosis of AN, indicating that this metric has a 34% chance of accurately identifying a case of full-syndrome AN in the AN-spectrum subsample and a 75% chance of accurately identifying a case of subsyndromal AN. The maximum global score had a cutoff of 4.02 (sensitivity = .45, specificity = .70); thus, this metric has a 45% chance of accurately

identifying a full-syndrome AN case and a 70% chance of accurately identifying a case of subsyndromal AN.

Diagnostic Agreement

Anorexia Nervosa—As shown in Table 6, the frequency of AN diagnosis was higher when based on parent report versus youth report ($\chi^2(1, N = 210) = 28.93, p < .01, \phi = .37$). According to the results from the PEDE-Q, 61.4% of participants diagnosed with an AN-spectrum disorder met criteria for AN ($n = 129$), while only 48.1% of this subsample met criteria for AN based on the EDE-Q ($n = 101$). Cohen's kappa revealed fair agreement between PEDE-Q and EDE-Q regarding AN diagnosis ($\kappa = .36, p < .01$).

Bulimia Nervosa—Among those participants who had been given a diagnosis of BN by their clinician, there was no significant relationship between informant (parent versus adolescent) and diagnosis ($\chi^2(1, N = 109) = 2.69, p = .10, \phi = .16$). Cohen's kappa revealed slight agreement between EDE-Q and PEDE-Q diagnosis of BN ($\kappa = .15, p = .10$), with youth report suggestive of a diagnosis of BN ($n = 39; 35.8%$) more often than parent report ($n = 29; 26.6%$).

Discussion

This study is the first to report on the psychometric properties of a dedicated parent-informant measure, the PEDE-Q. Results indicate that the PEDE-Q has good psychometric properties and captures different information from that provided by patients alone. The internal consistency of the PEDE-Q subscales was in the range of what has been published for the EDE-Q (Berg, Peterson, et al., 2012; Grilo et al., 2015). Likewise, each of the PEDE-Q subscales was significantly correlated with the corresponding EDE-Q subscales across the entire sample, suggesting that the measure has adequate convergent validity. While the statistically significant levels of agreement between the PEDE-Q and EDE-Q subscales and global scores also supports the PEDE-Q's convergent validity, the lack of a good or excellent level of agreement suggests that the data provided by the PEDE-Q is not duplicative of that provided by the EDE-Q.

Among participants with both full- and partial-syndrome restrictive EDs, the PEDE-Q global score proved more useful than the EDE-Q global score in identifying cases of full-syndrome AN, and the higher of the two global scores provided the most accurate diagnostic picture. A threshold slightly lower than the suggested cutoff for the EDE-Q (4.0; Berg, Peterson, et al., 2012; Carter et al., 2001) appears to maximize the PEDE-Q's criterion validity. Both the PEDE-Q and the maximum global score ROC curves had relatively low AUCs that fell within the less accurate range (0.59–0.61), which may be a result of the similar rates of distress and impairment that are associated with partial- and full-syndrome EDs (Stice et al., 2013). A larger BN-spectrum sample is needed to assess the relative AUCs for these three scores. Future research should also replicate these analyses using a sample of non-clinical controls to evaluate further the PEDE-Q's specificity and overall diagnostic performance.

A comparison of the rates of ED diagnosis for the PEDE-Q and the EDE-Q provided additional support for study hypotheses. When ED diagnosis was based on parent report, a

significantly greater number of cases of AN were identified than when diagnosis was based on youth report alone. For those with BN, there was a trend for youth report to yield a diagnosis more frequently than parent report. Previous research suggests that parent report may be limited by the secretive nature of BN behaviors (Tanofsky-Kraff et al., 2005). It is also possible that youth with BN may be less likely to minimize psychopathology than those with AN (Salbach-Andrae et al., 2008), rendering their self-report data more reliable, which is consistent with data that adolescents with BN self-report more ED psychopathology than those with AN-spectrum disorders (Accurso & Waller, 2021a; Bartholdy et al., 2017). Overall, the relatively low rates of case identification across AN and BN diagnosis underscore the value of clinical judgment as critical to the assessment process and the advantages of a clinical interview (versus questionnaire) format. Clinical interviews provide greater opportunity for clinicians to explain the more complex features of ED pathology (e.g., binge eating, dietary restraint, influence of shape and weight on self-evaluation) that may be ambiguous and interpreted differently among patients. Moreover, in an interview, a trained clinician uses judgment to determine the most appropriate rating for what the patient articulated, whereas in questionnaires, the patient chooses the final rating. Beyond these benefits to an interview format, a clinician is best positioned to ultimately combine data from multiple sources to arrive at a comprehensive diagnostic profile. In the current study, this discrepancy was especially evident for youth with BN, in which only 39 of the 109 participants who had received a clinical diagnosis of BN (35.8%) were identified by the EDE-Q as having BN.

Strengths and Limitations

A strength of this study is its relatively large, multi-site sample of youth with EDs across the diagnostic spectrum. However, since different research sites used different diagnostic criteria (i.e., DSM-IV or DSM-5) and provided varying levels of diagnostic specificity in their data collection, it was not possible to consider the PEDE-Q's performance within diagnostic subgroups (e.g., AN binge-purge type) or in cases of BED and ARFID. Likewise, not all sites reported purging behaviors other than self-induced vomiting; however, data that was collected suggest a large overlap between self-induced vomiting and other purging behaviors. Additionally, this study was limited to mostly White females and mother parent reporters and could not consistently report other participant demographic information (e.g., parental education, socioeconomic status, gender identity) that might inform the generalizability of its findings. Future research should examine the PEDE-Q's sensitivity and specificity in more diverse patient and community populations so as to assess further its utility in informing diagnostic decision-making.

Since the data analyzed in the current study was collected, a version 2.0 of the PEDE-Q has been developed. This more updated version of the PEDE-Q uses gender neutral language and enhanced behavioral indicators, which may further facilitate parents' identification and report of their child's ED symptoms. As these updates have the potential to improve the criterion validity and diagnostic accuracy of the PEDE-Q, an investigation of this newer version's psychometric performance may be warranted.

Finally, this study did not include other statistical tests that demonstrate the psychometric properties of a questionnaire, including test-retest reliability and discriminant validity. Comparisons of the PEDE-Q to other questionnaire and interview measures of ED symptoms would also enhance its construct validity. An examination of the factor structure of the PEDE-Q may provide clarity as to the latent constructs that underlie ED pathology among adolescents. Future research should thereby further establish the reliability and validity of the PEDE-Q and compare ratings from multiple caregivers in a single household.

Conclusion

In summary, the PEDE-Q provides a standardized method for incorporating caregiver perspectives into the assessment and identification of youth with clinically significant EDs and transdiagnostic ED pathology. As a questionnaire measure, its ease of use and time efficiency (as compared to the PEDE) make it a helpful instrument for both initial ED assessments and the monitoring of progress throughout the course of treatment. While the PEDE-Q provides information that can aid in the diagnosis of youth with EDs and their subsequent referral to treatment, it is not designed to be a stand-alone measure and should be administered alongside other ED assessment instruments, including self-report measures for children and adolescents. Clinical judgment and the systematic integration of divergent assessment data are also required to detect instances of parental over-report and cases in which parents may be less attuned to their child's symptoms and distress. Additional research is needed to further establish the psychometric properties of the PEDE-Q, examine its performance in more diverse patient populations, and identify developmentally sensitive strategies for integrating youth report, parent report, and clinical observation into a comprehensive assessment.

Acknowledgments

This research was supported by a grant from the National Institute of Mental Health K23 MH074506 (PI: Loeb; [ClinicalTrials.gov NCT00418977](https://clinicaltrials.gov/NCT00418977), Early Identification and Treatment of Anorexia Nervosa). Dr. Coelho is supported by a Health Professional-Investigator Award from the Michael Smith Foundation for Health Research. We gratefully acknowledge Christopher Fairburn's ongoing mentorship and support in forwarding research-based adaptations of the Eating Disorder Examination, including the parent version discussed in this paper. We also acknowledge Jonathan Mond and colleagues for their adolescent version of the Eating Disorder Examination-Questionnaire, which was used by some sites in this study.

Data and Materials Availability Statement

The datasets generated and analyzed during the current study are available from the authors on reasonable request. The PEDE-Q 2.0 is available by contacting the corresponding author at katharine.loeb@ccebt.com.

References

- Accurso EC, & Waller G (2021a). A brief session-by-session measure of eating disorder psychopathology for children and adolescents: Development and psychometric properties of the Eating Disorder-15 for Youth (ED-15-Y). *International Journal of Eating Disorders*, 54(4), 569–577. 10.1002/eat.23449 [PubMed: 33331681]
- Accurso EC, & Waller G (2021b). Concordance between youth and caregiver report of eating disorder psychopathology: Development and psychometric properties of the Eating Disorder-15

- for Parents/Caregivers (ED-15-P). *International Journal of Eating Disorders*, 54(7), 1302–1306. 10.1002/eat.23557 [PubMed: 34021612]
- Ágh T, Kovács G, Supina D, Pawaskar M, Herman BK, Vokó Z, & Sheehan DV (2016). A systematic review of the health-related quality of life and economic burdens of anorexia nervosa, bulimia nervosa, and binge eating disorder. *Eating and Weight Disorders*, 21(3), 353–364. 10.1007/s40519-016-0264-x [PubMed: 26942768]
- Allen KL, Byrne SM, Oddy WH, & Crosby RD (2013). Early onset binge eating and purging eating disorders: Course and outcome in a population-based study of adolescents. *Journal of Abnormal Child Psychology*, 41(7), 1083–96. 10.1007/s10802-013-9747-7 [PubMed: 23605960]
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision).
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). 10.1176/appi.books.9780890425596
- Bartholdy S, Allen K, Hodsoll J, O'daly OG, Campbell IC, Banaschewski T, Bokde ALW, Bromberg U, Büchel Christian, Quinlan EB, Conrod PJ, Desrivieères Sylvane, Flor H, Frouin V, Gallinat Jürgen, Garavan H, Heinz A, Ittermann B, Martinot J.-luc, ... Schmidt U (2017). Identifying disordered eating behaviours in adolescents: How do parent and adolescent reports differ by sex and age? *European Child & Adolescent Psychiatry*, 26(6), 691–701. 10.1007/s00787-016-0935-1 [PubMed: 28050706]
- Becker AE, Eddy KT, & Perloe A (2009). Clarifying criteria for cognitive signs and symptoms for eating disorders in DSM-V. *International Journal of Eating Disorders*, 42(7), 611–611. 10.1002/eat.20723 [PubMed: 19650082]
- Berg KC, Peterson CB, Frazier P, & Crow SJ (2012). Psychometric evaluation of the Eating Disorder Examination and Eating Disorder Examination-Questionnaire: A systematic review of the literature. *International Journal of Eating Disorders*, 45(3), 428–438. 10.1002/eat.20931 [PubMed: 21744375]
- Berg KC, Stiles-Shields EC, Swanson SA, Peterson CB, Lebow J, & Le Grange D (2012). Diagnostic concordance of the interview and questionnaire versions of the Eating Disorder examination. *International Journal of Eating Disorders*, 45(7), 850–855. 10.1002/eat.20948 [PubMed: 21826696]
- Binford RB, & Le Grange D (2005). Adolescents with bulimia nervosa and eating disorder not otherwise specified-purging only. *International Journal of Eating Disorders*, 38(2), 157–161. 10.1002/eat.20167 [PubMed: 16134105]
- Bravender T, Bryant-Waugh R, Herzog D, Katzman D, Kreipe RD, Lask B, Le GD, Lock J, Loeb K, Madden S, Nicholls D, O'Toole J, Pinhas L, Rome E, Sokol-Burger M, Wallen U, Zucker N, & Workgroup for Classification of Eating Disorders in Children and Adolescents. (2007). Classification of child and adolescent eating disturbances. Workgroup for Classification of Eating Disorders in Children and Adolescents (WCEDCA). *International Journal of Eating Disorders*, 40, 117–22. 10.1002/eat.20458
- Carter JC, Stewart DA, & Fairburn CG (2001). Eating Disorder Examination Questionnaire: Norms for young adolescent girls. *Behaviour Research and Therapy*, 39(5), 625–632. 10.1016/S0005-7967(00)00033-4 [PubMed: 11341255]
- Cohen J (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Routledge. 10.4324/9780203771587
- Couturier JL, & Lock J (2006). Denial and minimization in adolescents with anorexia nervosa. *International Journal of Eating Disorders*, 39(3), 212–216. 10.1002/eat.20241 [PubMed: 16485271]
- Couturier J, Lock J, Forsberg S, Vanderheyden D, & Yen HL (2007). The addition of a parent and clinician component to the Eating Disorder Examination for children and adolescents. *International Journal of Eating Disorders*, 40(5), 472–475. 10.1002/eat.20379 [PubMed: 17726771]
- Decaluwé V, & Braet C (2004). Assessment of eating disorder psychopathology in obese children and adolescents: Interview versus self-report questionnaire. *Behaviour Research and Therapy*, 42(7), 799–811. 10.1016/S0005-7967(03)00199-2 [PubMed: 15149900]

- Deloitte Access Economics. (2020). The social and economic cost of eating disorders in the United States of America: A report for the strategic training initiative for the prevention of eating disorders and the academy for eating disorders. <https://www.hsph.harvard.edu/striped/report-economic-costs-of-eating-disorders/>
- De Los Reyes A, Augenstein TM, Wang M, Thomas SA, Drabick DAG, Burgers DE, & Rabinowitz J (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*, 141(4), 858–900. 10.1037/a0038498 [PubMed: 25915035]
- Fairburn CG, & Beglin SJ (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders*, 16(4), 363–370. 10.1002/1098-108X(199412)16:4<363::AID-EAT2260160405>3.0.CO;2-# [PubMed: 7866415]
- Fairburn CG, & Beglin SJ (2008). Eating Disorder Examination Questionnaire (EDE-Q 6.0). In Fairburn CG (Ed.), *Cognitive behavior therapy and eating disorders* (pp. 309–313). Guilford Press.
- Fairburn CG, & Cooper Z (1993). The Eating Disorder Examination (12th edition). In Fairburn CG & Wilson GT (Eds.). *Binge eating: Nature, assessment and treatment* (pp. 317–360). Guilford Press.
- Forney KJ, Brown TA, Holland-Carter LA, Kennedy GA, & Keel PK (2017). Defining “significant weight loss” in atypical anorexia nervosa. *International Journal of Eating Disorders*, 50(8), 952–962. 10.1002/eat.22717 [PubMed: 28436084]
- George D, & Mallery P (2003). *SPSS for Windows step by step: A simple guide and reference*, 11.0 update (4th ed.). Allyn & Bacon.
- Goldschmidt AB, Doyle AC, & Wilfley DE (2007). Assessment of binge eating in overweight youth using a questionnaire version of the Child Eating Disorder Examination with instructions. *International Journal of Eating Disorders*, 40(5), 460–467. 10.1002/eat.20387 [PubMed: 17497710]
- Grilo CM, Henderson KE, Bell RL, & Crosby RD (2013). Eating Disorder Examination-Questionnaire factor structure and construct validity in bariatric surgery candidates. *Obesity Surgery*, 23(5), 657–662. 10.1007/s11695-012-0840-8 [PubMed: 23229951]
- Grilo CM, Reas DL, Hopwood CJ, & Crosby RD (2015). Factor structure and construct validity of the Eating Disorder Examination-Questionnaire in college students: further support for a modified brief version. *International Journal of Eating Disorders*, 48(3), 284–289. 10.1002/eat.22358 [PubMed: 25346071]
- Hail L, McGrath RE, Drury CR, Murray SB, Hughes EK, Sawyer SM, Le Grange D, & Loeb KL (2023). Adaptation of the Eating Disorder Examination for parents as symptoms informants: Psychometric properties in a sample of youth with restrictive eating disorders [Manuscript submitted for publication]. Department of Psychology, Fairleigh Dickinson University.
- Jenkins PE, & Rienecke RD (2022). Structural validity of the Eating Disorder Examination-Questionnaire: A systematic review. *International Journal of Eating Disorders*, 55(8), 1012–1030. 10.1002/eat.23721 [PubMed: 35503783]
- Koo TK, & Li MY (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155–163. 10.1016/j.jcm.2016.02.012 [PubMed: 27330520]
- Kraemer HC, Measelle JR, Ablow JC, & Essex MJ (2003). A new approach to integrating data from multiple informants in psychiatric assessment and research: Mixing and matching contexts and perspectives. *American Journal of Psychiatry*, 160(9), 1566–77. 10.1176/appi.ajp.160.9.1566 [PubMed: 12944328]
- Landis JR, & Koch GG (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174. 10.2307/2529310 [PubMed: 843571]
- Lebow J, Sim LA, & Accurso EC (2018). Is there clinical consensus in defining weight restoration for adolescents with anorexia nervosa? *Eating Disorders*, 26(3), 270–277. 10.1080/10640266.2017.1388664 [PubMed: 29087249]
- Le Grange D, Doyle PM, Swanson SA, Ludwig K, Glunz C, & Kreipe RE (2012). Calculation of expected body weight in adolescents with eating disorders. *Pediatrics*, 129(2), 446. 10.1542/peds.2011-1676 [PubMed: 22311992]

- Loeb KL, Brown M, & Goldstein MM (2011). Assessment of eating disorders in children and adolescents. In Grange D. Le & Lock J (Eds.), *Eating disorders in children and adolescents: A clinical handbook* (pp. 156–194). Guilford Press.
- Loeb KL, Jones J, Roberto CA, Sonia Gugga S, Marcus SM, Attia E, & Timothy Walsh B (2011). Adolescent-adult discrepancies on the Eating Disorder Examination: A function of developmental stage or severity of illness? *International Journal of Eating Disorders*, 44(6), 567–572. 10.1002/eat.20882 [PubMed: 21823141]
- Loeb KL, Weissman RS, Marcus S, Pattanayak C, Hail L, Kung KC, Schron D, Zucker N, Le Grange D, Lock J, Newcorn JH, Taylor CB, & Walsh BT (2020). Family-based treatment for anorexia nervosa symptoms in high-risk youth: A partially-randomized preference-design study. *Frontiers in Psychiatry*, 10, 985. 10.3389/fpsyt.2019.00985 [PubMed: 32038326]
- Machado PP, Grilo CM, & Crosby RD (2018). Replication of a modified factor structure for the Eating Disorder Examination-Questionnaire: Extension to clinical eating disorder and non-clinical samples in Portugal. *European Eating Disorders Review*, 26(1), 75–80. 10.1002/erv.2569 [PubMed: 29152813]
- Mariano P, Watson HJ, Leach DJ, McCormack J, & Forbes DA (2013). Parent-child concordance in reporting of child eating disorder pathology as assessed by the eating disorder examination. *International Journal of Eating Disorders*, 46(6), 617–617. 10.1002/eat.22158 [PubMed: 23847149]
- Micali N, & House J (2011). Assessment measures for child and adolescent eating disorders: A review. *Child and Adolescent Mental Health*, 16(2), 122–127. 10.1111/j.1475-3588.2010.00579.x [PubMed: 32847215]
- Micali N, Ploubidis G, De SB, Simonoff E, & Treasure J (2014). Frequency and patterns of eating disorder symptoms in early adolescence. *Journal of Adolescent Health*, 54(5), 574–81. 10.1016/j.jadohealth.2013.10.200
- Mitchison D, Mond J, Bussey K, Griffiths S, Trompeter N, Lonergan A, Pike KM, Murray SB, & Hay P (2020). DSM-5 full syndrome, other specified, and unspecified eating disorders in Australian adolescents: Prevalence and clinical significance. *Psychological Medicine*, 50(6), 981–990. 10.1017/S0033291719000898 [PubMed: 31043181]
- Mond J, Hall A, Bentley C, Harrison C, Gratwick-Sarll K, & Lewis V (2014). Eating-disordered behavior in adolescent boys: Eating Disorder Examination Questionnaire norms. *International Journal of Eating Disorders*, 47(4), 335–341. 10.1002/eat.22237 [PubMed: 24338639]
- Neale J, Pais SMA, Nicholls D, Chapman S, & Hudson LD (2020). What are the effects of restrictive eating disorders on growth and puberty and are effects permanent? A systematic review and meta-analysis. *Journal of Adolescent Health*, 66(2), 144–156. 10.1016/j.jadohealth.2019.08.032
- Reas DL, Williamson DA, Martin CK, & Zucker NL (2000). Duration of illness predicts outcome for bulimia nervosa: A long-term follow-up study. *International Journal of Eating Disorders*, 27(4), 428–434. 10.1002/(SICI)1098-108X(200005)27:4<428::AID-EAT7>3.0.CO;2-Y [PubMed: 10744849]
- Salbach-Andrae H, Klinkowski N, Lenz K, Pfeiffer E, Lehmkuhl U, & Ehrlich S (2008). Correspondence between self-reported and parent-reported psychopathology in adolescents with eating disorders. *Psychopathology*, 41(5), 307–312. 10.1159/000146068 [PubMed: 18635933]
- Stice E, Marti CN, & Rohde P (2013). Prevalence, incidence, impairment, and course of the proposed DSM-5 eating disorder diagnoses in an 8-year prospective community study of young women. *Journal of Abnormal Psychology*, 122(2), 445–457. 10.1037/a0030679 [PubMed: 23148784]
- Swets JA (1988). Measuring the accuracy of diagnostic systems. *Science*, 240(4857), 1285–1293. 10.1126/science.3287615 [PubMed: 3287615]
- Tanofsky-Kraff M, Yanovski SZ, & Yanovski JA (2005). Comparison of child interview and parent reports of children's eating disordered behaviors. *Eating Behaviors*, 6(1), 95–99. 10.1016/j.eatbeh.2004.03.001 [PubMed: 15567115]
- Vandereycken W, & Van Humbeeck I (2008). Denial and concealment of eating disorders: A retrospective survey. *European Eating Disorders Review*, 16(2), 109–109. 10.1002/erv.857 [PubMed: 18240122]

Viglione V, Muratori F, Maestro S, Brunori E, & Picchi L (2006). Denial of symptoms and psychopathology in adolescent anorexia nervosa. *Psychopathology*, 39(5), 255–260. 10.1159/000094723 [PubMed: 16864997]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Public Significance

There exist complex challenges to identifying clinically significant eating disorders among youth. The PEDE-Q is a questionnaire measure that improves eating disorder assessment among children and adolescents by asking parents to report on the symptoms and behaviors they have observed in their child and that youth may not fully disclose. The PEDE-Q can aid in the diagnosis of adolescents with eating disorders, particularly those with anorexia nervosa.

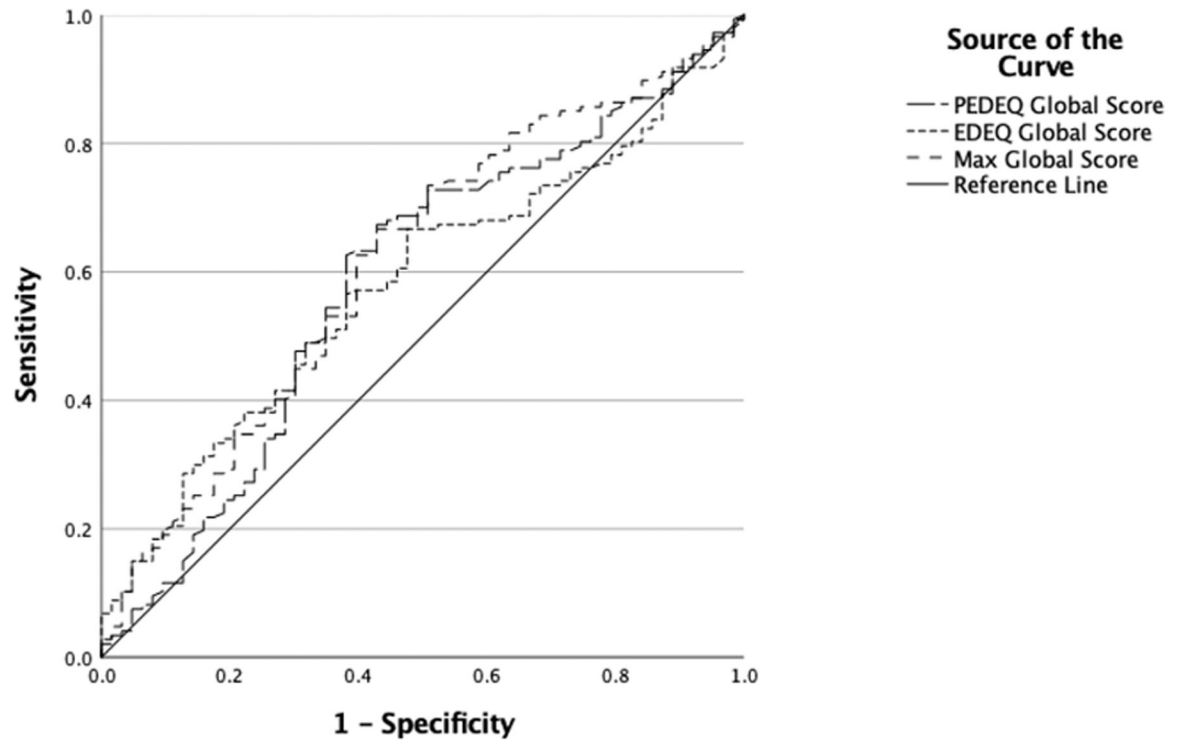


Figure 1.
ROC Curve Analysis for the Prediction of AN Diagnosis Using the EDE-Q and PEDE-Q
Note. ROC = receiver-operator characteristic; AN = anorexia nervosa; EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q. The Max Global Score is the greater of the two global scores (PEDE-Q or EDE-Q).

Table 1

Sample Item Comparison of the EDE-Q and PEDE-Q

Measure Item	EDE-Q	PEDE-Q
Instructions	The following questions are concerned with the past 4 weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.	The following questions are concerned with the past four weeks (28 days) only. They inquire about your child's eating habits and their attitudes about their shape and weight. Because these are a standard set of questions, please note that some may not apply to your child. This is not a test of how well you know your child; rather, your input represents another window into your child's behaviors that will help develop a fuller picture of their eating habits. By extension, if you have pertinent information as reported to you by someone else who knows your child, such as a nanny, housekeeper, or your child's friends, siblings, teachers, or coach, please consider this information as you answer these questions. Please read each question carefully. Please answer all the questions. Thank you.
Preoccupation with food	Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	Has your child's thinking about food, eating, or calories made it very difficult to concentrate on things that they need to be actively engaged in (for example, doing homework, following a conversation, or reading)? [Possible indicators of a child's preoccupation with food, eating or calories might include talking about them a lot, asking you repeatedly how you prepared food or how many calories are in food, or excessively reading food labels.]
Preoccupation with shape or weight	Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	Has your child's thinking about shape or weight made it very difficult to concentrate on things that they need to be actively engaged in (for example, doing homework, following a conversation, or reading)? [Possible indicators of a child's preoccupation with shape or weight might include talking about them a lot, frequent checking of weight, scrutinizing one's body in the mirror, measuring body parts, pinching perceived areas of fat, frequent checking that certain clothes fit.]
Fear of weight gain	Have you had a definite fear that you might gain weight?	Has your child had a definite fear of gaining weight or becoming fat? [Possible indicators of a child's fear of this might include rejecting attempts by you or doctors to increase weight, either by simply refusing to eat what is presented or by actively resisting, e.g., yelling, throwing a tantrum, throwing food or dishes, running away, or threatening to self-harm.]
Binge eating	Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?	Over the past 28 days, how many times has your child eaten what other people would regard as an unusually large amount of food (given the circumstances)? [Beyond direct observation or report of this type of eating, possible indicators of a child's eating like this might include missing food from the kitchen that you have reason to believe your child ate all at once in secret, or finding wrappers of food that you have reason to believe your child ate all at once in secret.]
Compensatory behaviors	Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?	Over the past 28 days, how many times has your child made themselves sick (vomited) as a means of controlling their shape or weight? [If there is a known history of vomiting, also consider indicators such as your finding vomit or vomit residue, or noticing your child rushing to the bathroom or taking long showers immediately after eating.]
	Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories?	Over the past 28 days, how many times has your child exercised in a "driven" or "compulsive" way as a means of controlling their weight, shape or amount of fat, or to burn off calories? [Possible indicators of this behavior might include exercising despite injury or a doctor's orders to refrain from exercise; in secret; at unusual times or in unusual places; immediately after eating; or to the point that it interferes with other activities. Another possible indicator is when a child becomes very agitated or upset if prevented from exercising.]

Note. EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q. These items were most elaborated to prompt for behavioral indicators of eating disorder pathology.

Table 2

Criteria and Items Used to Assess Diagnostic Agreement Between the EDE-Q and PEDE-Q

DSM-5 Criteria	EDE-Q Item	PEDE-Q Item
Anorexia Nervosa		
A. Low Weight ^a	–	–
B. Fear of Weight Gain	Item 10. “Have you had a definite fear that you might gain weight?” 4	Item 10. “Has your child had a definite fear of gaining weight or becoming fat?” 4
C. Body Image Disturbance	Item 11. “Have you felt fat?” 4 and/or Item 22. “Has your weight influenced how you think about (judge) yourself as a person?” 4 and/or Item 23. Has your shape influenced how you think about (judge) yourself as a person?” 4	Item 11. “Has your child felt fat?” 4 and/or Item 22. “Has your child’s weight influenced how they think about (judge) themselves as a person?” 4 and/or Item 23. “Has your child’s shape influenced how they think about (judge) themselves as a person?” 4
Bulimia Nervosa		
A. Binge Eating	Item 13. “Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?” and Item 14. “On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?”	Item 13. “Over the past 28 days, how many times has your child eaten what other people would regard as an unusually large amount of food (given the circumstances)?” and Item 14. “On how many of these times (from item #13 just above) did your child have a sense of losing control over eating (at the time of eating)?”
B. Compensatory Behavior ^b	Item 16. “Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?”	Item 16. “Over the past 28 days, how many times has your child made themselves sick (vomited) as a means of controlling their shape or weight?”
C. Frequency/Duration	Item 13, Item 14, and Item 16 4	Item 13, Item 14, and Item 16 4
D. Overevaluation of Shape and Weight	Item 22. “Has your weight influenced how you think about (judge) yourself as a person?” 4 and/or Item 23. Has your shape influenced how you think about (judge) yourself as a person?” 4	Item 22. “Has your child’s weight influenced how they think about (judges) themselves as a person?” 4 and/or Item 23. “Has your child’s shape influenced how they think about (judges) themselves as a person?” 4

Note. EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q; DSM-5 = *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; American Psychiatric Association, 2013).

^aBecause all participants in the AN-spectrum subsample were clinically underweight, only those items that correspond to DSM-5 AN criteria B and C were examined in the current analyses.

^bSelf-induced vomiting.

Table 3

Means, Standard Deviations, and Cronbach's Alpha Coefficients of the EDE-Q and PEDE-Q Subscales

Scale	EDE-Q			PEDE-Q		
	<i>N</i>	<i>M(SD)</i>	α	<i>N</i>	<i>M(SD)</i>	α
Original Subscales ^a						
Restraint	354	2.81(1.90)	.87	347	3.29(1.73)	.79
Eating Concern	350	2.45(1.65)	.80	352	2.49(1.55)	.73
Shape Concern	354	3.59(1.92)	.93	352	3.69(1.74)	.90
Weight Concern	353	3.29(1.93)	.89	353	3.41(1.72)	.81
Global Score	354	3.03(1.72)	.95	355	3.21(1.48)	.90
Three-Factor Subscales ^b						
Dietary Restraint	354	3.44(2.25)	.91	351	4.16(1.97)	.83
Shape/Weight Overvaluation	352	3.51(2.06)	.88	352	4.25(1.80)	.82
Body Dissatisfaction	353	3.85(2.01)	.84	349	3.91(1.88)	.81

Note. EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q.

^aDeveloped by Fairburn and Beglin (1994, 2008).

^bDerived from the brief, seven-item version of the EDE-Q (Grilo et al., 2015).

Table 4

Summary of Pearson Correlations Between Subscales on the EDE-Q and PEDE-Q

		EDE-Q									
PEDE-Q		Original Subscales ^a				Three-Factor Subscales ^b					
		Restraint	N	Eating Concern	N	Shape Concern	N	Weight Concern	N	Global Score	N
Original Subscales											
Restraint	.48*	346	.36*	342	.39*	346	.35*	345	.43*	346	
Eating Concern	.39*	351	.41*	347	.40*	351	.41*	350	.43*	351	
Shape Concern	.43*	351	.43*	347	.51*	351	.48*	350	.50*	351	
Weight Concern	.44*	352	.40*	348	.49*	352	.51*	351	.50*	352	
Global Score	.49*	354	.46*	350	.51*	354	.50*	353	.53*	354	
Modified Subscales											
Dietary Restraint	.45*	350	.30*	348	.25*	349					
Shape/Weight Overevaluation	.31*	351	.32*	349	.30*	350					
Body Dissatisfaction	.33*	348	.40*	346	.41*	347					

Note. EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q.

^aDeveloped by Fairburn and Beglin (1994, 2008).

^bDerived from the brief, seven-item version of the EDE-Q (Grilo et al., 2015).

* $p < .05$.

Table 5

Estimates of Inter-rater Agreement Between the EDE-Q and PEDE-Q

Scale	<i>N</i>	ICC	<i>p</i>	95% CI
Original Subscales ^a				
Restraint	346	.63	<.001	[.53, .70]
Eating Concern	347	.58	<.001	[.48, .66]
Shape Concern	351	.68	<.001	[.60, .74]
Weight Concern	351	.67	<.001	[.60, .74]
Global Score	354	.69	<.001	[.61, .75]
Three-Factor Subscales ^b				
Dietary Restraint	350	.59	<.001	[.48, .68]
Shape/Weight Overvaluation	349	.46	<.001	[.32, .57]
Body Dissatisfaction	347	.59	<.001	[.49, .66]

Note. EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q; ICC = intraclass correlation coefficient; CI = confidence interval.

^aDeveloped by Fairburn and Beglin (1994, 2008).

^bDerived from the brief, seven-item version of the EDE-Q (Grilo et al., 2015).

Table 6

Diagnostic Agreement Between the EDE-Q and PEDE-Q

EDE-Q	PEDE-Q					
	Met criteria		Did not meet criteria		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
AN Diagnosis						
Met criteria	81	80.2	20	19.8	101	48.1
Did not meet criteria	48	44.0	61	56.0	109	51.9
Total	129	61.4	81	38.6	210	100.0
AN Criterion B						
Met criteria	93	85.3	16	14.7	109	54.5
Did not meet criteria	43	47.3	48	52.7	91	45.5
Total	136	68.0	64	32.0	200	100.0
AN Criterion C						
Met criteria	119	90.2	13	9.8	132	63.5
Did not meet criteria	45	59.2	31	40.8	76	36.5
Total	164	78.8	44	21.2	208	100.0
BN Diagnosis						
Diagnosis	14	35.9	25	64.1	39	35.8
No diagnosis	15	21.4	55	78.6	70	64.2
Total	29	26.6	80	73.4	109	100.0
BN Criteria A and C						
Met criteria	37	57.8	27	42.2	64	58.7
Did not meet criteria	20	44.4	25	55.6	45	41.3
Total	57	52.3	52	47.7	109	100.0
BN Criteria B and C						
Met criteria	43	65.2	23	34.8	66	61.1
Did not meet criteria	7	16.3	36	83.7	43	39.4
Total	50	45.9	59	54.1	109	100.0
BN Criterion D						
Met criteria	68	82.9	14	17.1	82	75.2
Did not meet criteria	24	88.9	3	11.1	27	24.8
Total	92	84.4	17	15.6	109	100.0

Note. EDE-Q = Eating Disorder Examination Questionnaire; PEDE-Q = parent version of the EDE-Q; AN = anorexia nervosa; BN = bulimia nervosa.