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Eating Disorder Inventory-3

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Review of the Eating Disorder Inventory-3 by JEFFREY A. ATLAS, Clinical Psychologist, SCO Family of Services, Queens, NY:

DESCRIPTION. The Eating Disorder Inventory-3 (EDI-3) is the latest edition of an instrument developed through 20 years of research in national and international populations of eating-disordered individuals. The manual is encyclopedic in scope, providing adequate instructional information on the EDI-3, textbook-like introductions to topics in the field, and digressions into such areas as cross-cultural comparisons, which may whet the appetite of researchers. The EDI-3 presents itself as both an evaluative measure and an ongoing research program.

The EDI-3 inventories information relevant to the phenomenology, severity, and clinical course of eating disorders in females ages 13-53 years. In combination with interview evaluation, and, where appropriate, medical examination, the EDI-3 may increase confidence in accurate assessment of eating disorders following the nosologies of the DSM-IV-TR and the ICD-10 definitions of Anorexia Nervosa, Bulimia Nervosa, and Eating Disorders Not Otherwise Specified (NOS). It does not address the newer, but important category of Binge Eating Disorder, describing obese individuals with little dietary restraint who do not purge.

A tripartite, potentially stepwise organization of the scale broadens its clinical utility. The Referral Form (RF), with separate manual, provides a weight algorithm and an abbreviated self-report measure (pitched at a sixth-grade reading level) as a separable vehicle for referral for more in-depth assessment. Height and weight values are indexed to a Body Mass Index, which provides critical threshold values for thinness. A 25-item questionnaire is drawn from the full instrument, with critical items keyed to the EDI Drive for Thinness (DT) and Bulimia (B) scales, which research has shown to demonstrate good temporal stability. A modified Likert-type scale yields severity ratings for items such as "If I gain a pound, I worry that I will keep gaining" or "I stuff myself with food."

Part B of the questionnaire canvases the frequency of behavioral weight-control measures such as binge-eating and laxative use. Referral can be based on positive cutoff scores on the 25-item scale, behavior questionnaire, or BMI Index. Advantages of the RF are the brevity and flexibility of administration (group or individual), and plausibility of confidential directing of information from at-risk groups (e.g., aspiring ballet dancers, wrestlers), while permitting the provision of test materials to be

handled by on-line staff or entry-level mental health professionals. The RF is a carbonized questionnaire that is easily scorable directly by a teacher, coach, or counselor or via referral to another source for purposes of confidentiality. An example of such use would be in helping an athlete whose drive to maintain a weight designation leads to health-threatening starvation.

A brief Symptom Checklist (SC), written at the sixth-grade level and designed to be administered under the guidance of a healthcare professional, provides for direct canvassing of symptoms keyed to DSM-IV-TR diagnosable eating disorders (e.g., percentage of time aimed at controlling weight, average number of vomiting episodes). By itself or in combination with the RF, the SC may be used as an additional screening device alerting the worker to usefulness or feasibility of administration of the full EDI-3 scale. Failure to meet critical thresholds would indicate nonclinical eating patterns, or, not uncommonly, denial of problems by self-report, which would preclude or postpone use of the EDI-3 until such time as the participant can be engaged in truthful discussion.

DEVELOPMENT. The DT and B are foundational scales of the EDI that anchor the 12 primary subscales of the EDI-3. The other 10 subscales, presented as a continuum of "themes" in eating-disordered populations, are Body Dissatisfaction, Low Self-Esteem, Personal Alienation, Interpersonal Insecurity, Interpersonal Alienation, Interoceptive Deficits, Emotional Dysregulation, Perfectionism, Asceticism, and Maturity Fears. Scale items based on these constructs were generated by experienced clinicians, operationalized and subject to empirical adequacy in terms of goodness-of-fit and stability with clinical populations. The recruitment of normative samples from the United States, Canada, Europe, and Australia is consistent with prevalence of these eating disorders in Westernized industrial societies. Females and young adults, the predominant clinical demographic of eating disorders, form the principal study samples.

The EDI-3 item booklet, written at an overall fourth-grade reading level, takes about 20 minutes to complete. The sorting of items into exemplars of different scales reflects reasonable face validity and empirical grounding. The "Interoceptive Deficits" scale is the authors' description for items comprising affective fears of confusion, such as, "I don't know what's going on inside me." Testing of items on the successive three versions of the scale was aimed at maximizing homogeneity of individual scales (comparing item-total scale correlations with the target scale), which feature item-total scale correlations of about .40 or greater for eating-disorder samples.

TECHNICAL.

Reliability. The EDI-3 was assessed for reliability on the normative samples of U.S. Adult Clinical (N = 983), International Adult Clinical (N = 662), and U.S. Adolescent Clinical (N = 335) populations. A composite T-score comprising the scales' Drive for Thinness, Bulimia, and Body Dissatisfaction produced alpha coefficients ranging from .90 to .97 across the three normative groups and diagnostic categories of Anorexia Nervosa-Restricting, Anorexia Nervosa-Bulimic/Purging, Bulimia Nervosa, and Eating Disorder NOS. The remaining subscales demonstrated somewhat lower, but acceptable, alpha coefficients, with medians of .84, .74, and .85 for the respective normative samples. By this accounting the EDI-3 shows good internal consistency of item scales.

Test-retest stability of scores was assessed through a sample of 34 females who had undergone earlier treatment for eating disorders, ranging in age from 15-55 with an average age of 25.2. The test-retest interval ranged from 1 to 7 days with an average of 2.6. Correlation coefficients ranging from .86 (for Asceticism) to .98 (for Interpersonal Alienation) suggested excellent stability of subscale and composite

scores, albeit on a very restricted study sample.

Validity. Confirmatory factor analysis of the EDI-3 on the U.S. Adult and Adolescent Clinical samples yielded meaningful scale groupings of Ineffectiveness, Interpersonal Problems, Affective Problems, and Overcontrol Composites. The fact that the factorial analysis failed to meet acceptable levels related to mean square errors of approximation leads the test author to conclude that "the primary consideration in constructing the EDI-3 scales was clinical relevance" (professional manual, p. 137).

Other sources of validity may be examined. A nonclinical sample of 543 females administered the EDI-3 and Rosenberg Self-Esteem Scale yielded an inverse correlation of .82 between the Low Self-Esteem subscale of the EDI-3 and the Rosenberg, supporting convergent validity. The manual provides "descriptive data" on moderate-size samples of U.S. and international male and female adults, as well as international male and female adolescents. Although statistical tests are not provided, the author notes higher female raw scores on the Body Dissatisfaction and Drive for Thinness scales, but otherwise relatively small differences between females and males without eating disorders. The gender contrasts are consistent with the impact of Western social norms. However, the absence of T-score comparisons makes the issue of differential validity difficult to evaluate.

COMMENTARY. Despite the voluminous work and care that appeared to go into the development of the EDI-3, it is ultimately disappointing. The instrument appears "front-loaded" in the sense that its preliminary screening components may be more efficient and valid than the full scale. Empirically, the Drive for Thinness and Bulimia measures, as well as the Body Mass Index and canvassing of symptoms, converge with other research and clinical knowledge in presenting reasonable measures for further assessment. As the extended EDI-3 shows questionable factor structure and discriminant subscale utility, with the author's own dictate that it does not substitute for a structured clinical interview, the question comes up as to whether the added diagnostic contributions of the EDI-3 warrant the time and expense. Given some of the theoretical and empirical lacunae of this instrument, one might conclude otherwise, as the state of evidence-based studies in the field combined with advances in diagnostically focused interview techniques may make the EDI-3 unnecessary.

SUMMARY. The EDI-3 reflects the development of an ambitious research, assessment, and intervention program in the field of eating disorders. The full instrument may have been surpassed in its usefulness by advances in the field itself, but the EDI-3 screening components, particularly the RF, would seem useful in settings such as high school and college counseling clinics where rapid assessment and referral of clients at risk for eating disorders is of critical importance.

Review of the Eating Disorder Inventory-3 by ASHRAF KAGEE, Professor of Psychology, Stellenbosch University, Matiland, South Africa:

DESCRIPTION. The Eating Disorder Inventory-3 is the third edition of a widely used 91-item self-report paper-and-pencil test used to measure psychological traits that are relevant to persons with eating disorders. The purpose of this instrument is to test the continuum model of anorexia nervosa (Nylander, 1971), to assess risk factors associated with this condition, to measure outcome, and to predict response to treatment. The instrument has been largely designed for use in clinical settings but has been consistently researched over several decades. It is easily administered and scored, and yields 12 nonoverlapping scale scores and 6 composite scores that may be used to create clinically meaningful profiles, which in turn may be linked to treatment plans, specific interventions, and treatment monitoring.

It is important to note that the EDI-3 is not designed to arrive at a diagnosis of an eating disorder. Instead the emphasis is placed on the measurement of psychological traits relevant to the development and maintenance of such disorders.

Test takers are provided with the EDI-3 item booklet, and an answer sheet. The first page of the item booklet contains questions about demographic information and physical characteristics. The remaining 91 items address psychological constructs associated with eating disorders. The answer sheet is used by the test-taker to record item responses. The scoring sheet and the score summary sheet are used by the examiner to calculate validity scale scores, scale raw scores, T scores, and percentiles. Test takers are asked to respond to items on a 6-point Likert-type scale containing the response options Always, Usually, Often, Sometimes, Rarely, and Never. The test materials are presented in an attractive box set that facilitates ease of use for both the test taker and test administrator.

DEVELOPMENT. The materials furnished by the developers provide useful information concerning how the instrument was developed. The EDI-3 was formulated using an approach to construct validation emphasizing both the rational and empirical methods of scale development. Constructs were chosen based on a review of the major theories in the clinical literature, and scales were identified by clinicians experienced in the area of eating disorders in order to operationally define these constructs. The scales and composites included in the final version of the EDI-3 were based on empirical adequacy as well as scale stability.

The rationale behind the development of the EDI was to test the continuum model of anorexia nervosa, which states that this disorder is the final stage of a continuous process beginning with voluntary dieting and progressing to more stringent forms of dieting accompanied by progressive loss of insight. The difference between mild or subthreshold symptoms is thus conceptualized as quantitative rather than qualitative. This matter of whether the severity of eating disorders is chiefly qualitative or quantitative in nature has not been settled in the literature in this area. However, the implications are that it is important to recognize the heterogeneity of cases in terms of symptom severity, to identify meaningful psychological typologies that may lead to better clinical decision-making, and to conduct research on these psychological constructs that could yield information regarding etiology, prognosis, prediction of relapse, and biological and cultural factors.

TECHNICAL. The standardization process of the EDI-3 is described in great detail. The Eating Disorder Risk Composite Scale reliability estimates range from .90 to .97 (median = .94) across four diagnostic groups and three normative groups. For the three Eating Disorder Risk scales, all reliability estimates were generally in the high .80s and low .90s across all the groups that formed part of the assessment. The median reliability coefficients for the psychological scales were .84, .74, and .85 for the American Adult Clinical, International Adult Clinical, and American Adolescent samples, respectively. The test-retest stability coefficients (retest interval of 1 to 7 days) were .98 and .97 for the Eating Disorder Risk Composite and General Psychological Maladjustment Composite scales, whereas the Eating Disorder Risk and Psychological scales had median coefficients of .95 and .93, respectively.

In terms of construct validity in addition to other measures, the various subscales of the EDI-3 were correlated with corresponding subscales of the Eating Attitudes Test (EAT-26), the Bulimia Test Revised (BULIT-R), and the Rosenberg Self-Esteem Scale. Scale correlations ranged from low (-.13) to very high (.83).

The underlying relationships of the items were examined by means of exploratory factor analysis. The

analysis showed that a three-factor model for the American Adult Clinical and sample accounted for 63.0% of the total variance, whereas the models for the International Adult Clinical and American Adolescent samples accounted for 60.8% and 65.6% of the variance, respectively.

COMMENTARY. The EDI-3 appears to be a thorough assessment tool for use in a clinical context. It has been extensively researched and has undergone three revisions over the past several decades. The major advantage conferred by the EDI-3 over other similar measures is that it is more likely than those to lead to refinements in clinical decision making due to the psychological typologies provided by the subscales.

From the data provided in the test manual, it is apparent that this instrument has been subjected to considerable empirical research. However, additional and more robust studies that assess divergent and convergent validity are necessary to examine its construct validity in a more rigorous fashion.

The item booklet and item answer sheet are easy to read for most people. On the whole, the instrument is easy to administer and score. The norms provided in the appendix of the manual were obtained from American and international samples (Australia, Canada, Italy, and the Netherlands), indicating that efforts have been made to generate evidence of cross-cultural validity for the instrument. At this point in the research trajectory of this instrument it may be appropriate to test its utility and relevance in developing countries, such as those in South America, Africa, and Asia. If this instrument is to gain usage in these parts of the world, additional culture-specific norms will need to be developed.

SUMMARY. The developers have made considerable efforts to refine the newest version of the EDI. The strength of this instrument lies in its thorough treatment of the psychological correlates of eating disorders. Despite a reasonable amount of research on this instrument, further studies correlating the instrument with other measures of similar constructs may need to be pursued. Of particular interest is the cross-cultural applicability of the EDI-3. Although studies in countries other than the United States have been undertaken, it would also be of benefit to determine the extent to which the measure may be applicable in developing countries.

REVIEWER'S REFERENCE

Mylander, I. (1971). The feeling of being fat and dieting in a school population: An epidemiologic interview investigation. ACTA Socio-Medica Scandinavica, 3, 17-26.