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A Preliminary Investigation of the Eating Disorder Continuum With Men

Tracy L. Tylka and Linda Mezydlo Subich
University of Akron

Men largely are neglected in research on eating disturbances, including research on the eating disorder continuum. This research explored whether the eating disorder continuum provides an accurate representation for men of characteristics related to disturbed eating in women. Results for a sample of 166 men were mixed, offering limited support for both the continuity and discontinuity perspectives. Scores on poor interoceptive awareness and on perceptions of long-term effectiveness, short-term safety, and long-term safety of maladaptive weight control techniques varied with respect to men's rank along the eating disorder continuum. The eating disorder group appeared to be qualitatively different, however, from other groups on self-reported ineffectiveness. Scores on other variables did not vary with respect to men's rank along the eating disorder continuum.

Despite research showing that a rather significant percentage of men display behaviors related to eating disturbances such as dieting (Ferguson & Spitzer, 1995; Heatherton, Mahamedi, Striepe, Field, & Keel, 1997; Rand & Kuldau, 1991), binge eating (American Psychiatric Association, 1994; Ferguson & Spitzer, 1995), and using ineffective and harmful strategies for weight reduction (Andersen, 1999; McNulty, 1997; Rosen & Gross, 1987), men have been relatively ignored, neglected, and dismissed in eating disturbance research (Andersen, 1995; Kelly, Ricciardelli, & Clarke, 1999). Furthermore, the neglect of studying differences among men with various degrees of eating disturbance is especially ironic because men are quite likely to display disturbed eating behaviors that do not meet clinical criteria for eating disorders (Ferguson & Spitzer, 1995; McNulty, 1997). Problematic eating behaviors, psychological characteristics, and cognitions related to a range of eating disturbances in men, therefore, merit further research and clinical attention within the field of counseling psychology (Hay, 1998; Tylka & Subich, 1999). Researching this topic serves to acknowledge men with subclinical eating disturbances and may focus attention on prevention as well as remediation of different levels of eating disturbances among men.

There are two hypotheses as to why men have been underemphasized in research on disturbed eating. First, the commonly held stereotype of a person with an eating disorder is that such a person is a young Caucasian woman (Bruch, 1973). Although some researchers (e.g., Rand & Kuldau, 1991) have found that women indeed report more disordered eating behaviors than do men, the stereotype that only White women have eating disturbances may have led to the underrepresentation of men, older persons, and non-Caucasian persons in research on eating disturbances (Andersen, 1995; Hay, 1998; Lester & Petrie, 1998).

Second, concern about body shape in the absence of weight loss is not considered by the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV*; American Psychiatric Association, 1994) as characteristic of eating disturbances and therefore is not explored much by researchers. Yet, men often report being concerned about changing their body shape without reporting a desire to lose weight (Andersen & DiDomenico, 1992; Gillett & White, 1992). For example, it has been found that similar percentages of men and women are dissatisfied with their bodies; men, however, believe that they should be more muscular, and women believe that they should be thinner (Pope, Gruber, Choi, Olivardia, & Phillips, 1997; Rosen & Gross, 1987). Although muscle dysmorphia is not considered characteristic of eating disorders as defined in the *DSM–IV*, it has been related to eating disturbances and general psychopathology in male samples (Olivardia, Pope, & Hudson, 2000; Pope et al., 1997). Indeed, it has been suggested that muscle dysmorphia is a valid diagnostic entity and could be considered under the *DSM–IV* body shape criterion for eating disorders (Olivardia et al., 2000; Petrie & Rogers, 2001).

Nevertheless, the percentage of men who report engaging in disturbed eating practices, even as currently defined, is not trivial. Recent evidence indicates that women and men do not differ significantly on measures of eating disturbance and shape concerns (Tanofsky, Wilfley, Spurrell, Welch, & Brownell, 1997). For example, 25% of college men report dieting at any given time (Ferguson & Spitzer, 1995). Data support that high school boys and active duty military men often use ineffective or harmful weight control techniques (e.g., chronic dieting, fasting, using appetite suppressants and laxatives) when trying to lose weight (McNulty, 1997; Rosen & Gross, 1987). Moreover, approximately 10% of individuals who present with anorexia and bulimia nervosa and 25% of those who present with a binge eating disorder are men (American Psychiatric Association, 1994; Fairburn & Beglin, 1990). These research findings, combined with recent evidence that the incidence of eating disorders in men is increasing (Dolan & Gitzinger, 1995; Raphael & Lacey, 1994), illustrate the importance of studying the eating behaviors of men.

Tracy L. Tylka and Linda Mezydlo Subich, Department of Psychology, University of Akron. Tracy L. Tylka is now at the Marion Campus of Ohio State University.

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Correspondence concerning this article should be addressed to Linda Mezydlo Subich, Department of Psychology, University of Akron, Akron, Ohio 44325-4301. E-mail: subich@uakron.edu

A research strategy that has been helpful in studying eating disturbances with women is to consider different patterns of disturbed eating behavior as characteristic of groups along an eating disorder continuum. Indeed, most psychological models of eating disorders suggest that eating disturbances exist on a continuum of degree (e.g., Drewnowski, Yee, Kurth, & Krahn, 1994; Mintz & Betz, 1988; Stice, Ziemba, Margolis, & Flick, 1996). This approach conceptualizes groups along the continuum as representing increasing levels of disturbed eating behaviors; the exact symptomology associated with the various continuum groups differs, but this symptomology is proposed to occur along common behavioral and psychological dimensions such that group differences are a matter of degree and not kind (Mintz & Betz, 1988; Scarano & Kalodner-Martin, 1994). The eating disorder continuum hypothesis places unrestrained eating at one anchor of the continuum (i.e., asymptomatic group), eating disorders as defined by the *DSM–IV* at the other anchor of the continuum (i.e., eating disordered group), and milder forms of disturbed eating at an intermediate point (i.e., symptomatic group; Mintz, O'Halloran, Mulholland, & Schneider, 1997).

Counseling psychologists have endorsed this conceptualization of eating disturbances along a continuum of degree, as it is consistent with an emphasis on the full spectrum of human behavior (Scarano & Kalodner-Martin, 1994; Tylka & Subich, 1999). However, proponents of the discontinuity perspective (e.g., Bruch, 1973; Garner, Olmsted, & Garfinkel, 1983) have suggested that bona fide eating disorders differ qualitatively from lesser forms of weight and eating concerns.

Indeed, researchers have garnered evidence both for and against the validity of the eating disorder continuum among samples of women. For instance, in a recent article in the *Journal of Counseling Psychology*, we (Tylka & Subich, 1999) reported the eating disorder continuum to have adequate construct validity for women, as several variables that are significant correlates of clinical eating disorders (e.g., neuroticism, body dissatisfaction, poor interoceptive awareness) varied meaningfully as a function of a woman's rank along the eating disorder continuum. However, using taxometric analysis (i.e., which examines the pattern of means above minus means below a sliding cut and uses maximum covariance analysis), Gleaves, Lowe, Snow, Green, and Murphy-Eberenz (2000) found evidence that, in a mixed sample of nonclinical college women and women with bulimia, three behavioral indicators of bulimia (i.e., binging behavior, purging behavior, and food preoccupation) were indicative of a latent taxon for bulimia (i.e., supporting the discontinuity perspective). These authors also found that two behavioral indicators (i.e., dieting and body dissatisfaction) did not appear to be indicative of a latent taxon (i.e., thus supporting the continuity perspective) in the nonclinical sample of women.

Unfortunately, to date, only samples of women have been studied with regard to the eating disorder continuum hypothesis. Therefore, it is largely unknown if the continuum framework provides an accurate representation of eating disorders in men (Scarano & Kalodner-Martin, 1994; Tylka & Subich, 1999). As an initial approach to investigating the eating disorder continuum hypothesis for men, it seems useful to determine whether men's placements on it reflect meaningful quantitative differences in their relevant behaviors and attitudes. Specifically, if several behavioral, psychological, and cognitive variables that are significant correlates of clinical eating disorders with women vary in a linear fashion as a function of men's placements in groups along the eating disorder continuum, support will be garnered for the continuum hypothesis (Lowe et al., 1996; Tylka & Subich, 1999, 2002). If, however, characteristics of the asymptomatic and symptomatic groups of men are similar to each other but differ from those of the eating-disordered group of men, then support will be garnered for the discontinuity model (i.e., suggesting that qualitative differences occur between subclinical and clinical eating disorders; Bruch, 1973; Garner et al., 1983; Lowe et al., 1996).

Thus, this exploratory study aimed to extend the investigation of the continuum hypothesis to men by examining whether a number of behavioral, psychological, and cognitive correlates of eating disorders vary as a function of degree of eating disturbance. Because many of these behavioral, psychological, and cognitive characteristics vary in a linear fashion for women placed along a continuum of disturbed eating, and because men with eating disturbances have similar characteristics to those of women with eating disturbances (Meisels, 1999), we expected men in different continuum groups to differ meaningfully in these same characteristics when they categorized according to criteria similar to those used with women. Thus, men's responses on a popular eating disorder inventory that assesses psychological and behavioral characteristics of disturbed eating were expected to increase as a function of men's rank along the eating disorder continuum, as were men's cognitions regarding the effectiveness and safety of maladaptive weight control techniques. These hypotheses were explored through analysis of variance strategies that have been reported by some researchers (e.g., Mintz & Betz, 1988; Tylka & Subich, 1999, 2002) as an appropriate research strategy for investigating the eating disorder continuum hypothesis.

Method

Participants

This study surveyed a total of 166 boys and men from a public high school ($n = 26$) and from a Midwestern state university ($n = 140$) on their eating behaviors, attitudes about eating, and perceptions of the effectiveness and safety of maladaptive weight control techniques. For the given analyses, this sample size exceeds the number of cases needed for power of .80 when alpha is set at .05 and a medium effect is expected. The mean age of the total sample was 21.06 ($SD = 4.37$) years, with a range of 16–41 years. There was minimal racial diversity among the participants; 89.8% were Caucasian, 6.5% were African American, 1.2% were Latino, and 2.4% were Asian American. Regarding socioeconomic status, 4% reported lower-class status, 20% working class, 45% middle class, 25% upper middle class, and 6% upper class.

Materials

The Questionnaire for Eating Disorder Diagnoses (Q-EDD; Mińtz et al., 1997). The Q-EDD was used to classify participants into the asymptomatic, symptomatic, and eating-disordered groups along the eating disorder continuum. The Q-EDD is a self-report measure that contains 50 questions that assess frequency data for individual behaviors related to disturbed eating (e.g., "Do you take laxatives in order to lose weight?", "How often do you do this?", "How long have you been doing this?"). It takes about 10 min to complete. Items or combinations of items are scored dichotomously in terms of meeting or not meeting a specific *DSM–IV* diagnosis (i.e.,

eating disorder not otherwise specified [EDNOS], anorexia nervosa, and bulimia nervosa) or continuum group with the aid of a scoring manual that consists of flowchart decision rules. The Q-EDD differentiates between individuals with eating disorders (a group including anorexic, bulimic and EDNOS individuals); symptomatic individuals (those who have some symptoms of disturbed eating but do not meet *DSM–IV* criteria for anorexia, bulimia, or EDNOS); and asymptomatic individuals (those who do not report behaviors consistent with disturbed eating). The Q-EDD is described in detail in Mintz et al. (1997).

Mintz et al. (1997) found that the Q-EDD demonstrated evidence of convergent validity (i.e., Q-EDD scores corresponded with scores on other eating disorder inventories), incremental validity (i.e., the Q-EDD was found to be superior to the BULIT-R [the Bulimia Test–Revised, a widely used self-report measure of bulimia; Thelen, Farmer, Wonderlich, & Smith, 1991] when differentiating women with bulimia from women without bulimia), criterion validity (i.e., 98% accuracy rate for differentiating between eating-disordered and non-eating-disordered individuals was found), and test–retest reliability (i.e., kappas ranged from .85 to .94 for a 2-week period). Also, interrater agreement was found to be excellent; there was 100% agreement between two scorers for differentiating between eating-disordered and non-eating-disordered groups and between eating-disordered, symptomatic, and asymptomatic groups (Mintz et al., 1997; Tylka & Subich, 1999). For this study, interrater agreement was 95.2% between two independent judges (one was Tracy L. Tylka, and the other was an upper level undergraduate student). The judges met and discussed the questionnaires on which they disagreed until a 100% agreement level was achieved.

Eating Disorder Inventory-2 (EDI-2; Garner, 1991). The EDI-2 is a 91-item self-report measure that assesses a broad range of behavioral and psychological symptoms and features that are applicable to the development and maintenance of eating disorders. It contains 11 subscales, three of which assess attitudes and behaviors concerning eating, weight, and shape (Drive for Thinness, Bulimia, Body Dissatisfaction); five of which assess psychological traits or general organizing constructs relevant to clinical eating disorders (Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears); and three of which are termed provisional subscales (Asceticism, Impulse Regulation, Social Inhibition). For a full review of the EDI-2 subscales, see Garner (1991). Because the Drive for Thinness and Bulimia subscales of the EDI-2 often are used in the diagnosis of eating disorders and therefore may be confounded with Q-EDD items, it was decided not to use these subscales in the present analyses. Also, the three provisional subscales were not used in the present analyses, as there is not sufficient reliability and validity evidence for them. Summed, raw scores for the six remaining subscales were calculated for each participant. Scores range from 0 to 3 for each item, with Body Dissatisfaction having 9 items, Ineffectiveness having 10 items, Perfectionism having 6 items, Interpersonal Distrust having 7 items, Interoceptive Awareness having 10 items, and Maturity Fears having 8 items. Higher scores on subscales are indicative of a greater probability of having a clinical eating disorder.

The six subscales used in this study (i.e., Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, and Maturity Fears) have been supported psychometrically within the research literature (Garner, 1991). Indeed, these subscales were found to show sufficient evidence of internal consistency reliability (i.e., alphas ranging from .80 to .92) and test–retest reliability (i.e., alphas ranging from .41 to .75 over a 2-week period). The items of the EDI-2 were also found to discriminate between persons with eating disorders and nonpatient samples, demonstrating evidence of criterion validity. Furthermore, the EDI-2 was related to other popular measures of eating disorders, such as the Eating Attitudes Test, and its subscales were derived from the work of prominent theorists specializing in eating disorders. For the present sample, internal consistency reliability estimates for the six subscales ranged from .71 (Maturity Fears) to .90 (Body Dissatisfaction).

Effectiveness and Safety of Weight Control Techniques questionnaires (Tylka & Subich, 2002). Two Likert-scale questionnaires were used to assess how individuals rate the effectiveness and safety of 13 maladaptive weight control techniques for both short-term and long-term weight loss. These maladaptive weight control techniques were adapted from a list of techniques given by Rosen and Gross (1987) and included using appetite suppressants, skipping meals, fasting, vomiting after eating, engaging in heavy exercise (i.e., defined on the questionnaire as exercising six to seven times a week for several hours at a time), eating 1,200 calories or less a day, eliminating fats from diet, using food supplements, taking laxatives, taking diuretics, using enemas, eliminating simple carbohydrates, and having liposuction.

Participants' perceptions of the effectiveness and safety of each maladaptive weight control technique are reported in terms of short-term control and long-term control of weight on a scale ranging from *not at all effective (safe)* (1) to *very effective (safe)* (7). For example, a participant rated his perceptions of the effectiveness (on the Effectiveness questionnaire) or safety (on the Safety questionnaire) of appetite suppressants on a scale ranging from *not at all effective (safe)* to *very effective (safe)*. Each questionnaire may be scored for short-term perceptions of effectiveness or safety and long-term perceptions of effectiveness or safety. In the instructions for each questionnaire, short-term weight control was operationalized as 1–3 months and long-term weight control was operationalized as longer than 3 months. Subscale scores are calculated for each questionnaire by adding responses to all of the short-term (or long-term) items and dividing by the total number (i.e., 13) of weight control techniques to yield an average score between 1 and 7. Higher subscale scores indicate stronger endorsement of the effectiveness or safety of the maladaptive weight control techniques.

Tylka and Subich (2002) reported that, for a sample of women, the internal consistency reliabilities for all four subscales were adequate, ranging from .78 for the Long-Term Safety subscale to .85 for both the Short-Term Effectiveness and Short-Term Safety subscales. These subscales also demonstrated adequate stability, ranging from .64 for Short-Term Effectiveness to .84 for Long-Term Safety over a 4-week period. Validity evidence for both measures is demonstrated by the fact that items reflect weight control techniques from previous questionnaires (e.g., the list of weight control techniques used by Rosen and Gross, 1987) and that have been demonstrated to be maladaptive (e.g., Fairburn, 1995). Validity evidence for the Effectiveness and Safety subscales was also garnered through exploratory factor analyses, with the short-term and long-term subscales on both the Effectiveness and Safety questionnaires accounting for a significant percentage of the variance in the analyses. Subscale internal consistency reliabilities for the present sample of men were adequate, ranging from .76 for the Long-Term Safety subscale to .83 for the Long-Term Effectiveness subscale.

Procedure

College men were recruited in undergraduate psychology classes and through posted flyers. They were tested in small groups at the university and received course credit for their participation. High school boys were tested in health classes and did not receive compensation for their participation. For high school boys to participate, they needed an informed consent sheet signed by their parents, and they needed to sign an informed consent sheet themselves. College men signed an informed consent sheet. Participants were told verbally and in writing that they could decline participation at any time. All men participated after receiving a description of the research; however, six eligible high school boys did not bring back informed consent sheets signed by their parents and thus did not participate.

Participants filled out measures of their eating habits (i.e., Q-EDD, EDI-2) and perceptions of several maladaptive weight control techniques

(i.e., Effectiveness and Safety of Weight Control Techniques questionnaires). Participants' weights were needed to assess the weight criterion for anorexia nervosa. Because previous research indicated that self-ratings of weight were highly correlated with actual weight as measured by a bathroom scale (Tylka & Subich, 2002), we decided to assess only self-ratings of weight rather than to weigh participants. For participants unsure of their weight, however, an accurate bathroom scale was provided.

Results

For all analyses, the levels of the eating disorder continuum group variable were ordered as follows: 1 = *asymptomatic continuum group*, 2 = *symptomatic continuum group*, and 3 = *eating disorder continuum group*. Because the frequency of boys and men in each continuum group was unrelated to their high school or college status, $\chi^2(4, N = 166) = 2.87$, *ns*, high school boys and college men were combined in the analyses. To test the hypothesis that participants' responses on the six subscales of the EDI-2 (which assess psychological and behavioral correlates of disturbed eating behavior) are related in a linear fashion to their continuum group placement, we computed a multivariate analysis of variance (MANOVA) to determine whether the six EDI-2 subscale scores varied as a function of participants' rank along the eating disorder continuum. In this analysis, the EDI-2 subscale scores served as dependent variables and participants' rank along the eating disorder continuum served as the independent variable. Results indicated that the examined EDI-2 subscale scores varied as a function of participants' rank along the eating disorder continuum, $F(12, 316) = 7.41$, $p < .001$, Wilks's $\Lambda = .61$.

We used post hoc univariate comparisons to determine which of the six examined EDI-2 subscales varied as a function of participants' rank along the eating disorder continuum. Three subscales varied according to participants' rank along the eating disorder continuum: Ineffectiveness, $F(2, 163) = 5.29$, $p < .01$; Interoceptive Awareness, $F(2, 163) = 38.96$, $p < .001$; and Maturity Fears, $F(2, 163) = 5.80$, $p < .01$. Body Dissatisfaction, $F(2, 163) = 2.03$, *ns*; Interpersonal Distrust, $F(2, 163) = 0.53$, *ns*; and Perfectionism, $F(2, 163) = 0.03$, *ns*, did not differentiate participants' rank along the eating disorder continuum.

Table 1 displays the EDI-2 subscale score means and standard deviations for the continuum groups. We used post hoc analyses, with Scheffé tests to counteract inflation of Type I error rate (Tabachnick & Fidell, 1996), to determine if mean scores for the continuum groups differed from one another for Ineffectiveness, Interoceptive Awareness, and Maturity Fears. All continuum groups were found to differ from one another in the expected manner for Interoceptive Awareness (all group differences, $p < .05$). For Ineffectiveness, however, the symptomatic group was similar to the asymptomatic group, but both were significantly different from the eating disorder group ($p < .01$). Finally, only the asymptomatic group differed from the eating disorder group for Maturity Fears ($p < .01$).

The hypothesis that participants' subscale scores on the Effectiveness and Safety of Weight Control Techniques questionnaires vary according to participants' rank along the eating disorder continuum was also tested with a MANOVA, with the subscale scores for the Effectiveness and Safety of Weight Control Techniques questionnaires serving as dependent variables and eating disorder continuum group placement serving as the independent variable. Results indicated that participants' rank along the eating disorder continuum could be differentiated by their perceptions of the effectiveness and safety of weight control techniques, $F(8, 320) = 7.35$, $p < .001$, Wilks's $\Lambda = .71$. Univariate tests with the subscales indicated that Long-Term Effectiveness, $F(2, 163) = 12.28$, $p < .001$; Short-Term Safety, $F(2, 163) = 23.61$, $p < .001$; and Long-Term Safety, $F(2, 163) = 23.95$, $p < .001$, varied according to participants' rank along the eating disorder continuum.

Table 1 also displays the Effectiveness and Safety subscale score means and standard deviations for the continuum groups. Post hoc analyses with the Scheffé test were used to determine whether means for the continuum groups differed from each other

Table 1
EDI-2 and Effectiveness and Safety of Weight Control Techniques Questionnaire Subscale Means and Standard Deviations by Continuum Group

Continuum group	EDI-2 subscales						ESWCT scales					
	BD	I	P	ID	IA	MF	STE	LTE	STS	LTS	*n*	%
Asymptomatic											85	51
M	5.82	4.51	6.08	4.93	1.47	3.06	3.47	2.94	2.74	2.43		
SD	4.68	4.06	3.98	4.07	1.41	2.62	1.06	1.07	0.66	0.59		
Symptomatic											61	37
M	5.43	4.02	6.21	4.56	2.51	4.05	3.75	3.53	3.42	2.93		
SD	3.85	3.52	3.83	3.00	1.87	2.70	0.85	0.85	0.71	0.56		
Eating disorder											20	12
M	7.60	7.30	6.00	5.50	5.45	5.20	3.89	3.95	3.62	3.35		
SD	2.98	4.81	3.79	3.69	2.89	3.67	3.62	0.71	0.80	0.78		

Note. $N = 166$. EDI-2 = Eating Disorder Inventory-2; ESWCT = Effectiveness and Safety of Weight Control Techniques; BD = Body Dissatisfaction; I = Ineffectiveness; P = Perfectionism; ID = Interpersonal Distrust; IA = Interoceptive Awareness; MF = Maturity Fears; STE = Short-Term Effectiveness; LTE = Long-Term Effectiveness; STS = Short-Term Safety; LTS = Long-Term Safety; % = percentage of men in a continuum group. EDI-2 subscale scores ranged from 0 to 27 for BD, 0 to 30 for I, 0 to 18 for P, 0 to 21 for ID, 0 to 30 for IA, and 0 to 24 for MF. Higher scores on each subscale indicate greater endorsement of eating disorder characteristics. MWCT subscale scores each range from 1 to 7, with higher scores reflecting more effective and safe perceptions of maladaptive weight control techniques.

in the expected manner for the Long-Term Effectiveness, Short-Term Safety, and Long-Term Safety subscales. For the Long-Term Safety subscale, all continuum groups differed significantly from each other in the expected manner ($p < .05$). For the Long-Term Effectiveness and Short-Term Safety subscales, however, the asymptomatic group differed from the symptomatic and eating disorder groups (all ps $< .001$), but the symptomatic group did not differ from the eating disorder group.

Discussion

Previous research on eating disorders has shown that they are multidimensional, meaning that they comprised behavioral, psychological, and cognitive characteristics (Garner, 1991). Furthermore, many studies suggest that behavioral, psychological, and cognitive characteristics are related positively to women's rank along the eating disorder continuum (Mintz & Betz, 1988; Stice et al., 1996; Tylka & Subich, 1999, 2002).

Despite research suggesting that significant percentages of men engage in disturbed eating practices (e.g., Ferguson & Spitzer, 1995; Heatherton et al., 1997), there currently is a dearth of research on how men with eating disturbances differ from both other men without eating disturbances and men with some symptoms of eating disturbances. Although a number of authors have addressed the need to investigate the continuum of men's eating disturbances (e.g., Scarano & Kalodner-Martin, 1994; Tylka & Subich, 1999), until now no one has furthered this line of investigation. Consistent with the research on women, if the eating disorder continuum is to have preliminary support among men, behavioral, psychological, and cognitive characteristics of clinical eating disorders should vary meaningfully as a function of men's placements into groups along the eating disorder continuum. The results of this exploratory study, however, provide conflicting results as to whether eating disturbances lie on a continuum of degree for men.

Specifically, the reported analyses indicated that the asymptomatic group, the symptomatic group, and the eating disorder group differed from each other in the expected manner for poor interoceptive awareness and perceptions of the long-term safety of maladaptive weight control techniques, indicating some initial support for the continuity perspective for these variables. Furthermore, the asymptomatic group differed from the symptomatic and eating disorder group, but the symptomatic group did not differ from the eating disorder group for perceptions of the long-term effectiveness and long-term safety of maladaptive weight control techniques. This finding is more congruent with the continuity model than the discontinuity model (Lowe et al., 1996), although it does not fulfill all criteria for continuity because the symptomatic and eating disorder groups did not differ. However, the discontinuity perspective was supported for men's reported personal ineffectiveness in that the asymptomatic and symptomatic continuum groups did not differ from each other, but both differed from the eating disorder group. Continuum groups did not differ from each other for body dissatisfaction, perfectionism, interpersonal distrust, and perceptions of the short-term effectiveness of maladaptive weight control techniques, supporting neither the continuity or discontinuity perspective. Similarly, the results were inconclusive for maturity fears in that the asymptomatic group differed from the eating disorder group, but the symptomatic group did not differ from either the asymptomatic group or the eating disorder group for this variable.

Each of these variables, except perfectionism, previously was shown to vary as a function of women's rank along the eating disorder continuum (Tylka & Subich, 1999, 2002). Yet in the present research, scores for body dissatisfaction, interpersonal distrust, and perceptions of the short-term effectiveness of maladaptive weight control techniques did not vary according to men's placement into groups along the eating disorder continuum, and personal ineffectiveness varied in accordance with the discontinuity model. It may be that, for men, these variables are less relevant correlates of eating disturbances than they are for women or that current criteria for classification into continua groups are inadequate. Alternatively, it may be that neither the current conceptualization of the continuity nor that of the discontinuity model may be accurate for men. Clearly, additional research is needed to explore these possibilities.

Indeed, the finding that body dissatisfaction did not vary according to men's rank along the eating disorder continuum may be understood in the context of previous research suggesting that when men are dissatisfied with their bodies, they believe they should be more muscular, not thinner (Andersen & DiDomenico, 1992; Gillett & White, 1992; Pope et al., 1997; Rosen & Gross, 1987; Tantleff-Dunn & Thompson, 2000). However, a close examination of the items on the Body Dissatisfaction subscale of the EDI-2 indicates that all but three items assess dissatisfaction with the largeness of body parts (e.g., "I think that my thighs are too large," "I think that my buttocks are too large," and "I think that my hips are too big"). These items on the Body Dissatisfaction subscale of the EDI-2 thus may address body parts with which women, not men, report being dissatisfied (Andersen & DiDomenico, 1992; Garner, 1991). Only one item reflects general dissatisfaction with body shape (i.e., "I feel satisfied with the shape of my body"). Interestingly, when this item was reverse scored and examined across the continuum groups, the asymptomatic group had the lowest mean score (i.e., $M = 1.45$, $SD = 1.18$), the eating disorder group had the highest mean score (i.e., $M = 3.00$, $SD = 0.00$), and the symptomatic group had an intermediate mean score (i.e., $M = 2.71$, $SD = 0.56$), and the groups were found to differ from each other in a continuous fashion ($p < .001$). Therefore, it may be that this subscale is valid with women, but not men, because of the fact that the construct of body dissatisfaction may differ for men.

This speculation is plausible, as much of the content of the EDI-2 was based on theory and research regarding eating disorders among samples of women (Garner, 1991). Thus, its subscales may not be adequate to tap characteristics of eating disturbances for men. Furthermore, the Q-EDD and the Effectiveness and Safety of Maladaptive Weight Control Techniques questionnaires were validated only on samples of women. Until these questionnaires are validated with (or revised for) men, the results of this study and other research investigations using these questionnaires with samples of men are limited. It is difficult to discern whether reports of inconsistent findings are a function of inaccurate measurement, inadequate theory, or both. Therefore, to further understanding of how eating disturbances are manifested among men, it is imperative that assessment instruments in this area are critically examined to determine whether they can accurately capture men's experi-

ences. If these measures are not found to be valid with men, they should be revised or new instruments should be developed.

Implications for Research and Practice

This study represents the first research investigating the eating disorder continuum hypothesis with men. Thus, much more research is needed to explore whether other behavioral, psychological, and cognitive characteristics show a continuous or discontinuous trend. For example, further research should focus on investigating the relation of additional characteristics such as self-esteem, neuroticism, and irrational beliefs to men's rank along the eating disorder continuum, as these characteristics have been shown to be related to women's eating disorder continuum group placement (Mintz & Betz, 1988; Tylka & Subich, 1999).

Researchers exploring the eating disorder continuum hypothesis with men in future research also may want to use more rigorous statistical techniques than analysis of variance strategies. The exploratory nature of the present work was consistent with the choice to use analysis of variance strategies because the primary intent was to verify whether the general patterns of relations noted in research on the eating disorder continuum with women would be found with men. However, this design does not address the relations among the indicators of eating disturbances. An alternative research design that has been proposed to investigate the continuity and discontinuity perspectives is taxometric analysis (Meehl, 1995), and it has begun to be used to investigate the eating disorder continuum hypothesis with samples of women (Gleaves et al., 2000). Taxometric analysis investigates the relations among indicators of a disorder using maximum covariance analysis and means above minus means below a sliding cut. This procedure, however, would require a large sample size (i.e., 300 or more participants) and approximately equal samples of men with and without clinical eating disorders. The next step in research in this domain, then, seems to be to gather larger samples and do more depth analyses (i.e., taxometric analysis) of data collected from them.

In addition, studies that explore directly the relation of psychological, behavioral, and cognitive characteristics of disturbed eating behavior to continuum placement with non-Caucasian persons continue to be rare; it remains largely unknown whether the eating disorder continuum is an adequate conceptualization for members of different racial and ethnic groups. Moreover, the generalizability of this study is limited due to the relatively small number of men in the eating disorder continuum group, as is often true with research on eating disorders with women, a larger sample of men with varied degrees of eating disturbances would extend these findings. Nevertheless, the significant percentages of men observed in the symptomatic and eating disorder groups, as currently defined, emphasizes the importance of continuing to study the various degrees of eating disturbance in men.

Similar to the absence of research on men with different degrees of eating disturbance, there is a lack of research on effective treatment approaches for men with eating disorders (Andersen, 1990). Most treatment studies have been conducted exclusively with samples of women; therefore, it is largely unknown as to whether common treatment approaches for eating disorders (e.g., cognitive–behavioral therapy, interpersonal psychotherapy, coping strategies therapy) are the best choices for men. For example, it has been recommended that counseling psychologists be willing to inquire into issues of physical health, body satisfaction, reasons for exercising, steroid use, and eating patterns with their male clients (Petrie & Rogers, 2001).

Indeed, perhaps the single most critical issue to be examined in future research and to be considered in practice is whether current conceptualizations and operationalizations of the eating disorder continuum may be applied directly to men. Illustrative of this concern is the fact that when we probed into our relatively high percentage of men in the eating disorder group as compared with other studies using the Q-EDD with women (i.e., Mintz et al., 1997; Mulholland & Mintz, 2001), we found that although data appeared valid and scoring procedures were followed exactly, a large percentage (70%) of the men in the eating disorder group met the Q-EDD criteria for binge eating disorder (i.e., they indicated that they engaged in binge eating at least twice a week for at least 6 months, felt out of control when they binge ate, and did not engage in any compensatory practices [vomiting, using laxatives or diuretics, excessive exercise, fasting] to offset their binge eating). Many of these men, however, also indicated that they frequently engage in bodybuilding. The combination of these two characteristics is not reflected in the *DSM–IV* and, therefore, may suggest a different type of eating disorder than has been recognized with women—an eating disorder resembling binge eating disorder but accompanied by a preoccupation with gaining muscle mass. Thus, it seems important for researchers to replicate this finding with different samples of men and to determine the importance and distinctiveness of this pattern of disturbed eating rather than to assume that it is consistent with what has been observed with women. Qualitative research may be an excellent way to begin to discern the meaning of this new pattern as well as to further our general understanding of eating disturbances among men.

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