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INTRODUCTION

Historically, body image has been viewed by most clinical researchers as a two-dimensional construct composed of perceptions of the physical self and attitudes affixed to those perceptions (cf. Cash & Brown, in press; Garner & Garfinkel, 1981). In addition, a disturbance in body image has historically been thought to be manifested in two ways (Garner & Garfinkel, 1981). The first is an inaccurate assessment of body size, which often is described as body size distortion; the second is a general sentiment of body dissatisfaction. Assessment based upon the former definition is seen as yielding measures of disturbance in the perceptual component of body image; assessment based upon the latter definition is seen as yielding measures of disturbance in the attitudinal component of body image. Both assessments are predicated on assessment of body image *per se*.

In general, assessment of body image has been carried out through the use of one of seven instruments: the adjustable body distorting television (Allebeck, Hallberg, & Espnal, 1976), the adjustable body distorting mirror (Traub & Orbach, 1964), the adjustable body distorting photograph (Glucksman & Hirsch, 1969), the image marking

procedure (Askevold, 1973), the movable caliper method (Slade & Russell, 1973), the body silhouettes (Williamson, Kelley, Davis, Rugiero, Blovin, 1985) and the body image detection device (Ruff & Barrios, 1986).

The first five techniques for assessing body image suffer from one or more serious shortcomings. The madjustable body distorting television , the adjustable body distorting mirror, the adjustable body distorting photograph, and the movable caliper method all require expensive, cumbersome equipment; thus, all suffer from serious limitations in their clinical applicability and utility. The image marking, the movable caliper, and the adjustable body distorting photograph techniques have all been found to be markedly unreliable - interscorer agreement, internal consistency, and temporal stability (Barrios, Ruff, & York, in press; Meermann, Bendereyeken, & Napeirski, 1986); thus, all three techniques suffer from considerable error in their measurement of body image and their measurement of the relationship between a disturbance in body image and a disturbance in eating. No estimates of reliability have been obtained for the adjustable body distorting mirror; therefore, all measures of body image derived from this technique are suspect.

Of the two remaining techniques for the assessment of

body image (i.e., the body silhouettes and the body image detection device), the body silhouettes appear to be the simpler and more economical of the two. The silhouettes may not, however, be the more sensitive and sounder of the two. Questions have been raised about the technique's content validity. That is, questions have been raised about the adequacy with which the technique addresses the various sizes and shapes that a person's body image may take and the various sentiments that may be attached to those percepts.

Such questions have not been raised about the body image detection device. (BIDD; Ruff & Barrios, 1986). Similar in make-up to the caliper-light beam apparatus of Slade and Russell, the BIDD is easier to use and is much less expensive. The BIDD consists of a standard overhead projector and three templates that fit over the projector. The base template allows for a 1 cm wide band of light to be projected onto the wall. The other two templates are adjusted by the subject to estimate the size of specific body parts. From the size estimations and accompanying subjective ratings, measures of body image disturbance are computed much like those reported by Slade and Russell (1973). Through a series of studies by Barrios and his associates (Barrios et al, in press; Barrios, Underwood,

Johnson-Greene,& Howard, 1987; Ruff & Barrios, 1986) these BIDD measures of body image disturbance have been found to be highly reliable in terms of interscorer agreement, internal consistency, and temporal stability. For these reasons, the BIDD appears to be the instrument of choice in the assessment of body image.

The longstanding interest in body image stems primarily from the construct's presumed ties to disturbances in eating. So great is the acceptance of this supposition that we find virtually every descriptive and explanatory account of the eating disorders of anorexia nervosa and bulimia nervosa making some mention of a disturbance in body image (American Psychological Association, 1987; Garner & Garfinkel, 1985; Hawkins, Fremouw, & Clements,in press).

Efforts to verify this presumed connection between a disturbance in body image and a disturbance in eating have met with mixed success. In some instances, a strong relationship between the two types of disturbances have been found; in other instances, a moderate relationship has been obtained; and in still other instances, a modest relationship has been found. All of which has raised questions about the worth of the body image construct vis-a'-vis eating disorders (e.g., Hsu, 1978).

These mixed results can in part be accounted for by the mixture of instruments that have been used to assess body image and the marginal measurement properties of many of the instruments (Ruff & Barrios, 1986). Earlier we discussed the specific limitations which have interfered with the validation of the purported relationship between a disturbance in body image and a disturbance in eating. Others have suggested that our customary way of conceptualizing and assessing a disturbance in body image have also contributed to the mixed findings we have obtained (Barrios et al., 1987). As such Cash and Brown (in press) have offered four suggestions for improving our assessment of body image and study of the role of body image in eating disorders. First,they recommend a refinement in our conceptualization of the body image construct. Specifically, they advocate expanding our conceptualization of body image from that of a two-dimensional construct to that of a three-dimensional construct comprised of perceptual, attitudinal, and affective components. And they advocate measurement of all three components in our assessment of the construct. Second, they recommend expanding our assessment of body image by obtaining estimates of ideal body size in addition to obtaining ones for perceived body size. Third, they

recommend quantifying a disturbance in body image not as the disparity between perceived and actual size but as the disparity between perceived and ideal size. And finally, they recommend better reporting of subject characteristics (e.g., diagnostic criteria, age, SES, menstrual status, height, weight), measurement procedures, and statistical analyses.

Underwood and Alexander (1988) investigated the relative merits of two different ways of assessing a disturbance in body image: 1) the traditional method which estimates the disparity between perceived body image and actual body image and 2) the discrepancy method which estimates the disparity between perceived body image and ideal body image. Using the BIDD apparatus, female subjects estimated both perceived and ideal body size. With each size estimation, they furnished four ratings: two addressing the attitudinal component of body image and two addressing the affective component of body image. Each measure was correlated with a measure of disturbance in eating. In sum, Underwood and Alexander found the newer discrepancy method to be a sounder measure of a disturbance in body image and a more sensitive correlate of a disturbance in eating.

Virtually all of the research on body image carried out

to date has been carried out on women. For the prevailing view has been that men do not display a disturbance in body image or if they do so the disturbance bears no relationship to disturbances in psychological functioning. Recent evidence along several fronts challenges this longstanding supposition. For example, Cash and his associates (Cash, Winstead, & Janda, 1986) report increasing pressure on contemporary American men to attain the culture's ideal of male attractiveness. Specifically male respondents in the Cash et al. (1986) survey reported more dissatisfaction with their bodies, more use of exercise to improve physical appearance, and more disturbances in eating than respondents in a similar 1972 study.

In terms of the cultural ideal for men, recent research from our laboratory suggests that the trend over the past 15 years has been towards a slimmer, thinner, more youthful figure (Alexander, Barrios, Turner, & Land, 1988). Specifically subjects rated a series of ten slides depicting male swim and underwear catalog advertisements along seven dimensions (e.g., smallness/largeness, lightness/heaviness. leanness/bulkiness,). The slides were taken from Sears, Roebuck & Co. catalogs over the past 15 years. Preliminary findings indicate the more recent the

Three recent studies also speak to a possible connection between a disturbance in body image and a disturbance in psychological functioning. In a study of the relationship between self-esteem and body image distortion, Thompson and Thompson (1986) found a significant positive correlation between self-esteem and waist size overestimation. In their study of body image, physical attractiveness and depression, Noles, Cash, & Winstead (1985) found depressed males and females had lower self-rating of physical attractiveness and body satisfaction than did controls even though objective ratings of attractiveness did not differ between groups. Cash and Smith (1982)found that lower physical attractiveness as determined by reliable observers was related to significantly higher self-reported depression for male subjects in particular.

The purpose of this study was to look more closely at the possible presence of a disturbance in body image among males and the possible presence of a relationship between a disturbance in body image and a disturbance in eating, mood, exercise, and family relations. Stated briefly, the methods that have heretofore proven most promising in the assessment of a disturbance in body image among females were used in the study to assess for a disturbance in body image among males. That is, using the BIDD apparatus,

subjects estimated both perceived and ideal body size. With each size estimation, they furnished four ratings: two addressing the attitudinal component of body image and two addressing the affective component of body image. Measures of disturbances in eating, mood, exercise, and family history were collected and correlated with all indices of a disturbance in body image 1.

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1 Although there has been no research conducted on male body image disturbance and its possible connection with a dysfunctional family history, some evidence does exist concerning the ties between eating disorders of females and a dysfunctional family history (Storber, & Humphrey, 1987). Therefore the family history variable was included in the present study.

METHOD

Subjects

Sixty male students at the University of Mississippi participated in the study. Undergraduates received experimental research credit in exchange for their participation. All subjects were 1) between the ages of 18 and 60 years old, and 2) within ± 15 % of ideal weight as recommended by the 1983 Metropolitan Life Insurance Standards.

Instruments

Body Image Detection Device. Subjects used the Body Image Detection Device (BIDD) to estimate the width of both their perceived and ideal body parts. This apparatus is constructed from a standard overhead projector, two pieces of 26 in. x 12 in. sturdy black poster board and two pieces of 26 in. x 3/4 in. x 1/2 in. wood. The light emitted from the projector is blocked

by positioning one posterboard on the transparency plate in order that only a 1 cm width horizontal band of light appears on a white wall. The two pieces of wood are placed over the transparency plate of the projector and act as guides for the black poster board template that has a triangular shaped piece removed from it. When the template is moved back and forth through the guide, the 1 cm wide band of light widens and narrows. The experimenter tilts the projector lens so that the 1 cm band of light is approximately the same level as the body part being estimated.

Bulimia Test. The Bulimia Test (BULIT; Smith & Thelen, 1984) is a 32-item multiple-choice questionnaire developed to assess the bulimia syndrome based on DSM-III criteria (American Psychiatric Association, 1980). It was designed to discriminate persons suffering from bulimia from those with either no eating disorder or some other eating disorder. Scores on the BULIT may range from 32 to 160 with the higher the score the greater the bulimic symptomology. The BULIT has been shown to be reliable and valid (Smith & Thelen. 1984).

Revised Restraint Scale. The Revised Restraint Scale, (Herman, 1978) is a 10 item multiple choice questionnaire developed to measure dieting, diet consciousness, and weight fluctuations. Scores can range from 0 to 40 with the higher the score the greater the disturbance in eating habits.

The Self-rating Depression Scale . The Self-rating Depression Scale (SDS; Zung, 1974) is a twenty item questionnaire developed to assess the mood of depression. Scores on the SDS may range from 0 to 80 points. with the higher the score the greater the depressive symptomology. The SDS has been shown to be reliable and valid (Jegede, 1976).

Beck Depression Inventory. The Beck Depression Inventory (Beck, 1973) is a 21-item multiple choice questionnaire designed to measure the mood state of depression. Scores on the Beck Depression Inventory may range from 0 to 63 points, with, the higher the score the greater the depressive symptómology.

Revised Optifast Exercise Scale. The Revised Optifast Exercise Scale is a 7-item open-ended questionnaire designed to measure weekly exercise activity. Subjects retrospectively recount all exercise activities 2for each day for the preceding week. The exercise activities are scored in terms of energy expenditure units and summed with the higher the score the greater the exercising.

Stanford 7-Day Activity Recall. The Stanford 7-Day Activity Recall is a 7-item instrument developed to assess average physical activity. Similar in format to the above scale, subjects were asked to recall all physical activity for the previous 7 days. The reports are scored according to a point system developed by Cooper (1970), with points reflecting the amount of oxygen consumed. Scores are summed across all activities to yield a single activity score for each subject, with the higher the score the more active the person.

Family Relations Questionnaire. The Family History Questionnaire is a 16 item instrument developed by Barrios (1981) to assess the family background of persons with suspected eating disorders. The questionnaire is scored on

both a Likert and a dichotomous scale indicating which parent was the most influential on a specific variable in the subject's childhood.

Procedure

All subjects participated in a two part assessment session. The first part entailed assessment of eating habits, exercise habits, and mood. Specifically the first phase involved completing the Revised Restrained Eating Scale, the BULIT, the Beck Depression Inventory, the Zung SDS, the Revised Optifast Exercise Scale, the Stanford 7-day Activity Recall, and the Family Relations Questionnaire. The second part entailed assessment of perceived and ideal body image. Greeted by Experimenter I. subjects were escorted to the room housing the BIDD and void of any extraneous light and objects. Subjects were informed that the purpose of the investigation was to determine how accurate men are in estimating the size of five body part. The five body parts to be estimated were: 1) the face - the point directly below the earlobes; 2) the chest - the point directly under the armpits; 3) the waist - the point directly above the hips; 4) the hips - the point at which they are their broadest; and 5) both thighs

- the point at which when both legs are pressed together, the fingertips touch the sides of the legs.

Subjects were familiarized with the operation of the BIDD and asked to perform two tasks. In the first task, the subject estimated the width of his five body parts as he currently saw them (i.e., perceived body image). In the second task, the subject estimated the width of his five body parts as he would like to see them(i.e., ideal body image). With each estimation, the subject gave four ratings: how the estimated width compared to others of his age, height, and sex, (i.e., normative comparison); how acceptable the estimated width is to him (i.e.,acceptability); how depressed the width makes him feel (i.e., depression); and how anxious the width makes him feel (i.e.,anxiety). For the normative comparison, he rated on a 0 to 100 scale the relationship his particular body width bears to that of others of his age, height, and sex. According to this scale, 0 represents a body width much more narrow than others, 50 average, and 100 much wider. For acceptability. the subject rated on a 0 to 100 scale how acceptable the body width is to him, with 0 being not at all acceptable, 50 somewhat acceptable, and 100 extremely acceptable. For depression, the subject rated on a scale of 0 to 100 how depressed the width makes him feel,

with 0 being not at all depressed, 50 somewhat depressed, and 100 extremely depressed. For anxiety, the subject rated on a 0 to 100 scale how anxious the width will make him feel, with 0 being not at all anxious, 50 somewhat anxious, and 100 extremely anxious. The first two ratings (i.e., normative comparison and acceptability) assessed the attitudinal component of body image; the last two ratings (i.e., depression and anxiety) assessed the affective component of body image. Upon completion of the two body image tasks, objective measurements of the subjects' actual body parts, height, and weight were taken.

Several steps were taken to minimize experimenter bias. One, the subject independently operated the BIDD and was not informed of any of the measurements taken. Two, the order of the specific body part width estimations were randomized for each subject. Three, the order of the tasks - estimation perceived body part widths and estimation ideal body part widths - were counterbalanced across subjects. And four, experimenters shared roles of questionnaire administrator and assessor.

RESULTS

Twenty dependent measures were computed for analysis. For each of the five body parts, estimates of perceived and ideal width, normative standing, acceptability, depression, and anxiety were obtained. These scores were used to compute ten of the dependent measures that served as units of analysis - five traditional indices of body image disturbance and five discrepancy indices of body image disturbance. They were computed as follows:

1. Body Perception Discrepancy Index = (perceived estimate of body size/ ideal estimate of body size) x 100;

2. Normative Discrepancy Index = (subjective rating of perceived body size/ subjective rating of ideal body size) x 100;

3. Acceptability Discrepancy Index = (acceptability rating of perceived body size/ acceptability rating of ideal body size) x 100;

4.Depression Discrepancy Index = (depression rating of perceived body size/ depression rating of ideal body size) x 100;

5. Anxiety Discrepancy Index = (anxiety rating of perceived body size/ anxiety rating of ideal body size) x 100;

6. Body Image Index = (estimate of body size/actual body size) x 100;

7. Normative Index = (subjective rating/50) x 100:

8.Acceptability Index = subjective rating of acceptability;

9.Depression Index = subjective rating of depression;

10. Anxiety Index = subjective rating of anxiety.

Respective scores were summed across body parts, yielding a composite score for each of the ten indices. Six of the remaining dependent measures were total scores on the eating habits, exercise habits and mood questionnaires (i.e,bulimia Test, Revised Restraint Scale, Beck Depression Inventory, Zung SDS, Revised Optifast Exercise Scale, and Stanford 7-Day Activity Recall). The remaining four dependent measures were taken from items on the the Family Relations Questionnaire (i.e., maternal demandingness, maternal treatment, paternal demandingness and paternal treatment).

Reliability

For twelve of the assessment sessions, a second experimenter independently recorded the body estimations and actual dimensions of the subjects. These recordings were used to assess interscorer reliability. Interscorer reliability coefficients of .98, .98, and .97 were found for measurement of subjects' perceived estimations of body size, ideal estimations of body size, and actual dimensions respectively.

Estimates of internal consistency computed for all five of the traditional body image indices and all five of the discrepancy body image indices are reported in Table I.

Insert Table I about here

Inspection of Table I reveals coefficient alphas ranging from .32 to .70 for the tradional indices (mean coefficient alpha = .58) and from .36 to .82 for the discrepancy indices (mean coefficient alpha = .66). For both sets of indices the lowest coefficient was obtained for the measure of the construct's perceptual component

(i.e., the Body Image Index and the Body Perception Discrepancy Index).

Correlational Analyses

Two multitrait-multimethod correlational matrices based upon 15 of the dependent measures were computed: one based upon the traditional measures of a disturbance in body image and the ten questionnaire measures, the other based upon the discrepancy measures of a disturbance in body image and the ten questionnaire measures. The former is reported in Table II, the latter in Table III.

Insert Table II about here

Within Construct Correlations - Traditional Indices. Inspection of Table II reveals several significant intra and interdimension relationships among the five traditional measures of a disturbance in body image. In terms of the correspondence between the two measures of the affective dimension of body image the Anxiety Index and Depression

Index correlated significantly with one another (r=.88,p<.001). That is , the more anxious subjects were about their body size, the more depressed or sad they were.

In terms of the correspondence between measures of different dimensions of the body image construct, both attitudinal measures correlated significantly with both affective measures. Specifically ,the Normative Index correlated significantly with both the Depression Index (r=.53,p<.001)and the Anxiety Index (r=.42, p<.001). In other words, the more a subject saw his body size as different from his peer group, the more depressed and anxious he was about his body size. And the Acceptability Index correlated significantly with both the Depression Index (r=-.33, p<.01) and the Anxiety Index (r=-.29,p<.01). In other words, the more acceptable a subject found his body , the less depressed and anxious he was about his body . The Acceptability Index also correlated significantly with the Body Image Index, a measure of the perceptual dimension, (r=-.33, p<.01). That is, the larger a subject perceived his body size in relationship to his actual size, the less acceptable he found his body size.

Between Construct Correlations - Traditional Indices.

Inspection of Table II reveals several significant relationships between the traditional measures of body image and the measures of exercise habits, eating habits, mood, and family relations. The attitudinal measure of Normative Index correlated significantly with both measures of exercise habits and both measures of eating habits: (the Stanford 7-Day Activity Recall m(r=.21, p<.05) the Revised Optifast Exercise Scale (r=.23,p<.05), the Revised Restraint Scale (r=.37, p<.05), and the Bulimia Test (r=.36, p<.05). In other words, the more a subject saw his body size as different from his peer group the more he reported disturbances in exercise and eating habits. The other attitudinal measure, the Acceptability Index, correlated significantly with both measures of mood: the Beck Depression Inventory (r=-.45, p<.001) and the Self-rating Depression Scale(r=-.49,p<.001). In other words, the less acceptable a subject found his body size, the more depressed he reported being.

Both affective measures of body image were found to be significantly related to both measures of mood and both measures of eating habits. Specifically, the Depression Index correlated positively with the Beck Depression Inventory (r=.31, p<.01), the Self-rating Depression Scale

(r=.35, p<.01), the Revised Restraint Scale (r=.23, p<.05), and the Bulimia Test (r=.49, p<.001). In other words, the more a subject was depressed about his body size, the more he reported disturbances in mood and eating patterns. The Anxiety Index correlated positively with the Beck Depression Inventory (r=.35, p<.01), the Self-rating Depression Scale (r=.43, p<.001), the Revised Restraint Scale (r=.22,p<.05), and the Bulimia Test (r=.55, p<.001). Moreover, the Anxiety Index correlated positively with the family measure of maternal abuse (r=.25,p<.05). Thus, the more anxious a subject was about his body size, the more he reported disturbances in mood, eating habits, and maternal treatment.

The sole measure of the perceptual dimension of body image was found to be significantly related to one of the measures of eating habits and one of the measures of family relations. Specifically, the Body Image Index had a significant positive correlation with the Revised Restraint Scale (r=.24, p<.05). In other words, the larger a subject perceived his body size in relationship to his actual size, the more he reported disturbances in eating patterns. The Body Image Index also had a significant negative correlation with maternal demandingness (r=-.34, p<.01). That is, the more discrepant a subject perceived his body

size to be from his actual size, the less demanding he reported his mother to be.

Within Construct Correlations - Discrepancy Indices. A correlation matrix based upon the five discrepancy body image measures and the exercise habits, eating habits, mood and family relations questionnaires is reported in Table III. Inspection of the table reveals several significant intra- and interdimensional relationships among the five discrepancy measures of a disturbance in body image. Terms

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Insert Table III about here

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of the correspondence between the two measures of the affective dimension, the Depression Discrepancy Index and the Anxiety Discrepancy Index correlated significantly with one another (r =.40, p<.001). That is, the more depressed subjects were about their perceived body size in comparison to their ideal body size, the more anxious they were.

In terms of the correspondence between measures of different dimensions of the body image construct, only one of the measures of the attitudinal dimension correlated significantly with only one of the measures of the

affective dimension. The Acceptability Discrepancy Index correlated with the Anxiety Discrepancy Index (r=-.27, p<.05). That is, the more acceptable a subject found his body size to be in comparison to his ideal body size, the less he reported anxiety about his body size.

The Body Perception Discrepancy Index, a measure of the perceptual dimension, correlated significantly with both measures of the attitudinal dimension: Normative Discrepancy Index (r=.57) and the Acceptability Discrepancy Index (r=-.23), both with p's<.05). In other words, the more a subject perceived a discrepancy between his actual body size and his desired ideal body size, the wider he paerceived his body size in comparison to the body sizes of his peers and the less acceptable his perceived body size was to him .

Between Construct Correlations - Discrepancy Indices. Inspection of Table III reveals several significant relationships between the discrepancy measures of body image and the measures of exercise habits, eating habits, mood, and family relations. The attitudinal measure of the Acceptability Discrepancy Index correlated negatively with both measures of mood and both measures of eating habits:

the Beck Depression Inventory (r=-.39, p<.001), the Self-rating Depression Scale (r=-.45, p<.001), the Revised Restraint Scale (r=-.22.p<.05), and the Bulimia Test (r=-.28, p<.05). That is, the more acceptable a subject found his percieved body size in comparison to his ideal body size, the less he reported disturbances in mood and eating. The Acceptability Discrepancy Index also correlated significantly with maternal treatment (r=-.27, p<.05)and maternal demandingness (r=-.31, p<.01). In other words, the more the subject reported having had an abusive, demanding mother the less acceptable he found his perceived body size to be in comparison to his ideal body size. The Normative Discrepancy Index correlated significantly with the Revised Restraint Scale (r=.37,p<.01). In other words, the more subjects reported disturbances in eating patterns, the larger the discrepancy between their perceived body size and their ideal body size when they compared themselves to persons of their age, height and sex.

One of the affective measures of body image as found to be significantly related to a measure of mood and a measure of eating habits. Moreover, both affective measures were found to be significantly related to family relations. The Anxiety Discrepancy Index correlated significantly with the

Self-rating Depression Scale (r=.29,p<.01) , the Bulimia Test (r=.47,p<.001), and maternal abuse (r=.30,p<.01). In other words, the more anxious a subject was about the discrepancy between his perceived body size and his ideal body size, the more likely he was to report disturbances in mood, eating patterns and maternal treatment. The Anxiety Discrepancy Index also correlated negatively with paternal demandingness (r=-.27, p<.05). That is, the more anxious a subject was about his perceived body size when compared to his ideal body size, the less he reported his father to be demanding.

The Depression Discrepancy Index correlated significantly with maternal demandingness (r=.22, p<.05) and maternal treatment (r=.31, p<.01). That is, the more depressed a subject was about his perceived body size in comparison to his ideal body size, the more he reported his mother being demanding and abusive.

In terms of the perceptual dimension, the Body Perception Discrepancy Index correlated significantly with the Revised Restraint Scale (r=.42, p<.001). In other words, the more a subject perceived his actual body size to be different from his ideal body size, the more he reported disturbances in eating patterns.

Within Construct Correlations - Questionnaires.

Inspection of Table III reveals several significant intradimensional relationships among the measures of exercise habits, eating habits, mood, and family relations. In terms of exercise habits, the Stanford 7-Day Activity Recall correlated significantly with the Revised Optifast Exercise Scale (r=.38, p<.01). In terms of correspondence between measures of mood, the Self-rating Depression Scale correlated significantly with the Beck Depression Inventory (r=.71, p<.001). There was also a significant correlation between the eating habits measures of the Revised Restraint Scale and the Bulimia Test (r=.52, p<.001). No significant correlations were found between the four measures of family discord used from the Family Relations Questionnaire.

Between Construct Correlations - Questionnaires.

Inspection of the tables reveals several significant relationships among the measures of exercise habits, eating habits, mood, and family relations. In terms of exercise habits and eating habits, the Stanford 7-Day Activity Recall correlated significantly with the Revised Restraint Scale (r=.25, p<.05). That is, the more a subject reported disturbances in exercise habits the more he reported disturbances in his eating patterns. In terms of mood and

eating patterns, both the Beck Depression Inventory and the Self-rating Depression Scale correlated significantly with both the Revised Restraint Scale and the Bulimia Test (r's between .24 and .56, all p's<.05). To wit, the more a subject reported disturbances in eating, the more he reported disturbances in mood. And in terms of family relations and eating habits, maternal abuse correlated significantly with the Bulimia Test and maternal abuse (r=.27, p.05). In other words, the more a subject reported disturbances in eating, the more he reported maternal abuse.

Correspondence was also found between mood and family relations. Both the Beck Depression Inventory and the Self-rating Depression Scale correlated significantly with both maternal demandingness and maternal abuse (r's between .23 and .34), all p<.05). In other words, the more a subject reported disturbances in mood, the more he reported having a demanding and abusive mother.

DISCUSSION

The purpose of the present study was to examine the generality of the body image construct to a new subject population - young adult males. Specifically, this entailed having young adult males complete an assessment of body image that has heretofore proven most promising in the assessment of a disturbance in body image among young adult females. The procedure called for estimations of perceived and ideal body size along with attitudinal and affective ratings of those size estimations. From the size estimations, attitudinal ratings, affective ratings, and actual dimensions, two sets of measures of a disturbance in body image were computed: a set of traditional indices that reflected differences between the perceived physical self and the actual physical self and a set of discrepancy indices that reflected differences between the perceived physical self and the ideal physical self. An examination of the generality of the body image construct to young adult males thus took the form of an estimation and comparison of the psychometric soundness and sensitiveness of those two sets of measures.

In terms of the fundamental measurement property of interscorer agreement, both traditional and discrepancy indices of a disturbance in body image were found to be highly reliable. In fact, both sets of measures were found to be of near perfect interscorer reliability. Estimates of another type of reliability - internal consistency - were much more variable. For example, coefficient alphas for the five traditional indices of a disturbance in body image ranged from the moderately low (e.g., alpha = .32) to the moderately high (e.g., alpha = .70), with most values falling at or above the level deemed acceptable by convention (i.e., alpha = .60). Coefficient alphas obtained for the five discrepancy indices of a disturbance in body image were somewhat more uniform and higher than those obtained for the traditional indices. To be exact, all but one of the coefficients for the discrepancy indices reached or exceeded the level deemed acceptable by convention. Thus in terms of the measurement property of internal consistency, the discrepancy indices were found to be slightly superior to the traditional indices.

Estimation of the measurement property of content validity took the form of correlating measures of the same dimension of the construct with each other. That is, for each set of indices of a disturbance in body image, the two

measures of the attitudinal components were correlated with one another and the two measures of the affective component were correlated with one another. For the set of traditional indices, appreciable correspondence was obtained only between the two measures of the affective component; whereas for the set of discrepancy indices, appreciable correspondence was obtained between both the two measures of the affective component and the two measures of the attitudinal component - appreciable correspondence being defined as a correlation coefficient with a probability value of less than .25. Thus in terms of the measurement property of content validity, the discrepancy indices were found to be slightly superior to the traditional indices.

Our examination of the convergent or construct validity of the measures took the form of correlating scores on different dimensions of the construct with one another. That is, for each set of indices of a disturbance in body image, measures of the perceptual, attitudinal, and affective components were correlated with one another. In general, the two patterns of relationships obtained for the two sets of indices were quite similar. Among the five traditional measures of the perceptual, attitudinal, and affective dimensions, four significant correlations were

obtained. And among the five discrepancy measures of perceptual, attitudinal, and affective dimensions, five significant correlations were obtained. For both sets of indices, highest correspondence was found between the attitudinal and affective components. Then in terms of the measurement property of convergent validity , the traditional and discrepancy indices were found to be quite comparable.

Estimation of the measurement property of nomological validity took the form of correlating the measures of body image disturbance with measures of the presumably related constructs of eating habits, mood, exercise habits, and family relations. Of primary interest was the variable of eating habits, as a disturbance in body image has been most often linked to a disturbance in eating habits among young adult females. Such correspondence was also found in the present study, as virtually every traditional and discrepancy measure of a disturbance in body image correlated significantly with at least one of the two measures of eating habits. Of secondary interest was the variable of mood, as a disturbance in body image has been linked to a depressed mood among young adult females. Here too, nearly every traditional and discrepancy measure of a disturbance in body image correlated significantly with at

least one of the two measures of mood. Of ancillary interest were the variables of exercise habits and family relations. And very few of the discrepancy and traditional measures of a disturbance in body image correlated significantly with the measures of these two variables. In terms of the measurement property of nomological validity, then, the traditional and discrepancy measures were found to be roughly comparable.

In sum, the discrepancy method of assessing a disturbance in body image proved slightly superior to the traditional method of assessing a disturbance in body image on two of the five measurement properties examined. In terms of the measurement property of internal consistency, the coefficient alphas obtained for the five discrepancy indices of a disturbance in body image were on the whole more uniform and higher than those obtained for the traditional indices. And in terms of the measurement property of content validity, the different discrepancy measures of the same dimension of the construct related better to one another than did the different traditional measures of the same dimension of the construct. For the other three measurement properties - interscorer reliability, convergent validity, and nomological validity - the two sets of measures were found to be roughly

comparable.

The properties obtained for the two sets of indices of a disturbance in body image among young males compare favorably to the properties obtained for the same two sets of indices of a disturbance in body image among young females (Underwood and Alexander, 1988). For example, in terms of the measurement property of internal consistency, both studies found all estimates reaching or exceeding the level deemed acceptable by convention. The Underwood and Alexander (1988), study of young adult females found the internal consistency of the discrepancy indices to be slightly superior to that of the traditional indices.

In terms of the measurement property of content validity, both studies found the discrepancy indices to be slightly superior to the traditional indices. In terms of the measurement property of construct validity though, the two studies differed. For young adult females , Underwood and Alexander (1988) found the discrepancy measures of the different dimensions of the construct relating better to one another than the traditional measures of the different dimensions of the construct. In the present study of young adult males, similar patterns of relationships among the measures of the different dimensions were obtained for the two sets of indices.

With regard to the measurement property of nomological validity, good correspondence with a disturbance in eating was obtained for only a small subset of the discrepancy measures and a small subset of the traditional measures for young adult females. In the present study of young adult males, virtually every traditional and discrepancy measure correlated with at least one of the measures of a disturbance in eating. Finally, the two studies differed in terms of the magnitude of disturbance in body image obtained. As one would expect, greater disturbances in body image (be they indexed by the traditional method or the discrepancy method) were obtained for the young adult females.

Worth noting are several methodological features that may have attenuated the strength of some of the relationships obtained in the present study. First, the sample may have been contaminated by the use of graduate students in psychology. Such persons may have discovered the hypotheses of the study and may have altered their responses so as to appear in a good light (i.e., free from any type of pathology).

Second, the template for the ideal male body may not be cylindrical as it is for the ideal female body, but rather triangular. During the experimental sessions, when males

were asked to estimate their ideal body size, they frequently chose to estimate an inverted triangular figure with a large base (i.e., a figure with an inflated chest). Such data suggest the need to experiment with new, potentially more sensitive ways of quantifying a disturbance in body image.

Third, the participants in the study did not appear to be accustomed to looking at their bodies or thinking of themselves in terms of an ideal body size. Thus, they appeared somewhat confused with the task of estimating their current and ideal body sizes. Perhaps the use of repeated assessments would enable male subjects to become accustomed to the task, thus improve the assessment procedure.

Fourth, there may be individual difference variables that serve to mediate the relationships between body image and other variables of interest such as exercise habits. For example, there may be men who are fairly satisfied with their present size and who do not find their size to be of importance, another group of males may be more interested in obtaining a triangular shaped body and who are more diet and exercise conscious; and a third group of males who are interested in the cylindrical look.

In conclusion, the discrepancy method of assessing a

disturbance in body image proved slightly superior to the traditional method of assessing a disturbance in body image on the measurement properties of internal consistency, and content validity. The two sets of measures were found to be roughly comparable on the other three measurement properties of interscorer reliability, convergent validity, and nomological validity. In comparison to studies on young adult females, greater disturbances in body image were obtained for young adult females than for young adult males. Future research might take steps to minimize the methodological problems of the present study. Such steps might take the form of obtaining an uncontaminated homogenous sample, experimenting with a more sensitive method of quantifying a disturbance in body image, by repeating assessments, and including mediating variables. Future research taking such steps will allow for further examinatiaon and ultimate determination of the nature and worth of the construct of male body image.

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TABLE I

Estimates of Internal Consistency (Coefficient Alpha) for the Traditional and Discrepancy Indices of a Disturbance in Body Image

Measure	Traditional Method	Discrepancy Method
Body Perception	.32	.36
Normative	.58	.82
Acceptability	.70	.31
Depression	.69	.61
Anxiety	.61	.71

TABLE II

Multimethod Multitrait Correlation Matrix
for Traditional Indices

						Exercise		Mood		Eating			Family Relations		
	Body Percept	Normative	Depression	Anxiety	Accept	S7AS	Opti-fast	Beck	SDS	RRQ	BULIT	Maternal Demand	Maternal Tx	Paternal Demand	Paternal Tx
Body Percept	1.00	.19*	.07	.14*	-.33**	.01	-.11*	.20*	.07	.04**	.10*	-.34**	-.01	-.04	-.09
Normative		1.00	.52**	.41**	.15*	.21**	.23**	.11*	.06	.37**	.35**	-.04	.05	.12*	.16*
Depression			1.00	.88**	-.33**	.08	.19*	.31**	.35**	.23**	.49**	.19*	.16*	-.16*	.20*
Anxiety				1.00	-.29**	.09*	.12*	.34*	.43**	.22**	.55**	.13*	.25**	-.14*	.11*
Accept					1.00	.08	-.04	-.45**	-.49**	-.16*	-.19**	-.13*	-.19*	.09*	.11*
S7AS						1.00	.38**	.09	.13*	.25**	.14*	-.01	-.18*	.19*	.10*
Opti-fast							1.00	-.01	.14*	.09	.13*	.18*	.01	.06	.16*
Beck								1.00	.71**	.23**	.52**	.23**	.34**	.03	.07
SDS									1.00	.34**	.56**	.29**	.23**	.06	-.03
RRQ										1.00	.52**	-.16*	.01	.09*	-.09
BULIT											1.00	.07	.27**	-.05	.10*
Maternal Demand												1.00	.20*	.17*	.03
Maternal Tx													1.00	-.13*	.42*
Paternal Demand														1.00	-.06
Paternal Tx															1.00

* p .25
** p .05

TABLE III

Multimethod Multitrait Correlation Matrix
for Discrepancy Indices

						Exercise		Mood		Eating		Family Relations			
	Body Percept	Normative	Depression	Anxiety	Accept	S7AS	Opti-fast	Beck	SDS	RRQ	BULIT	Maternal Demand	Maternal Tx	Paternal Demand	Paternal Tx
Body Percept	1.00	.57**	-.16*	-.05	-.23**	-.08	.01	-.06	.01	.42**	.02	-.24**	-.01	-.03	-.07
Normative		1.00	.04	-.05	.10*	.08	-.02	-.02	-.03	.37**	.10*	-.06	-.10*	.11*	-.07
Depression			1.00	.40**	-.07	.05	.03	.24**	.22*	.08	.25**	.22**	.31**	.04	.11*
Anxiety				1.00	-.27**	.14*	.06	.13*	.28**	.20*	.47**	.12*	.29**	-.27**	.05
Accept					1.00	.07	-.08	-.39**	-.45**	-.22**	-.28**	-.27**	-.31**	.05*	.05
S7AS						1.00	.38**	.09	.13*	.25**	.14*	-.01	-.18*	.19*	.10*
Opti-fast							1.00	-.01	.14*	.09	.13*	.18*	.01	.06	.16*
Beck								1.00	.71**	.24**	.52**	.23**	.34**	.03	.07
SDS									1.00	.34**	.56**	.29**	.23**	.06	-.03
RRQ										1.00	.52**	-.16*	.01	.09*	-.09
BULIT											1.00	.07	.27**	-.05	.10*
Maternal Demand												1.00	.20*	.17*	.03
Maternal Tx													1.00	-.13*	.42*
Paternal Demand														1.00	-.06
Paternal Tx															1.00

* $p < .25$

** $p < .05$

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BIOGRAPHICAL SKETCH

I was born August 22, 1947 as the eldest of three siblings. I attended Prince Street Elementary School and Sadie V. Thompson High School in Natchez, Mississippi. I graduated number three in my class in 1964 along with other individual academic honors. I attended Tougaloo College from 1964 to 1968 and graduated with a major in English and a minor in Sociology. After attending Mississippi State University I graduated with a Master of Arts in Counseling and Guidance in 1975. I have been employed in several occupations including public school teaching, counseling and employment service administration. I am presently enrolled in the doctorate program of clinical psychology at the University of Mississippi.