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Original Article

Body Image, Self-Esteem and Depression in Female Adolescent College Students

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ABSTRACT

Introduction: The purpose of this study was to examine whether Body Mass Index (BMI) and the subjective perception of body weight, and body shape satisfaction predict level of self-esteem and depression among female college students. ***Method:*** The sample comprised of 124 female college students ranging in age from 16-21 years. Self perception of having a weight problem was evaluated by open-ended questions and Body Shape Questionnaire. In addition, Rosenberg Self-Esteem Scale and General Health Questionnaire-28 was administered. ***Results:*** Based on BMI 29.0% were under weight, 67.8% normal and 3.2% over weight. Rating of self-perception of body shape showed that 38.7% felt that they were slim, 27.4% normal and 26.6% as thin. Eighty six percent of the subjects desired to be slim. The perception of weight problem but not BMI contributed significantly to higher scores on GHQ. There was a significant positive correlation between BSQ scores and BMI, age, and weight. ***Conclusions:*** Health care providers need to educate female adolescents about normal weight range, proper diet and exercise. In addition, health care providers need to help them attain a realistic, positive perception of their weight in order to prevent depression and lowered self-esteem.

Key Words: Body image; Body Mass Index; Self-esteem; Depression

INTRODUCTION

Body image refers to the picture that a person forms of their body in their mind. This may have no bearing at all on actual appearance. Physical appearance differs in meaning and importance for males and females; concerns surrounding body weight and shape also differ.[1] Many women want to be slim, since slim is regarded as beautiful,[2-3] while being overweight is viewed negatively.[2]

Body image is closely connected to a person's self-esteem. [4] While men tend to obtain their self-esteem through achievements, power status and control, women's self-concept and self-esteem is often based on desirability and attractiveness. Thus, women are under greater pressure than men to lose weight.[5]

A person's body image is influenced by their own beliefs and attitudes as well as ideals in society. For females, as compared with males, there is a greater discrepancy between their perceived body size and their ideal body size.[1] Female adolescents are more preoccupied with physique and appearance than are those in other age groups,[6] and they are more likely to identify themselves as overweight than are males.[7] There is research to suggest that female adolescents tend to be dissatisfied with their body weight, size, and shape.[8-9] In a study by Kim and Yoon,[10] 72.5% of normal weight Korean female adolescents perceived themselves as overweight or obese; and 76% of these subjects tried to lose weight.

Since feelings about oneself may be shaped by the attitudes of others, those who are overweight may suffer from low self-esteem and have high levels of depression.[2] Sheslow et al noted that obesity in adolescence may cause psychosocial problems, such as lowered self-esteem, depression, and difficulties with interpersonal relationships. [11] A distorted perception of one's body is also a determinant of disturbance in self-esteem.[1] A more negative body image is related to lower self-esteem.[12] Wichstrom[9] reported that perceived obesity is associated with depression and unstable self-perceptions in the general adolescent population in Norway.

Wilde et al point to the relative lack of studies outside the Western countries.[13] Distorted body image or fat phobia may be absent or not prominent among patients from non-western cultures.[14-17] Thus, the increasing rate of eating disorders in traditional societies is usually attributed to acculturation and exposure through the media to western-oriented values of attractiveness and body size.[18]

The purpose of the present study was to determine the extent of body weight and body shape dissatisfaction in a group of female adolescent college students; and to examine whether body mass index (BMI) and perception of a weight problem predict level of self-esteem and depression.

METHODS

The study was carried out in a co-educational Arts and Science College at Udupi, Karnataka. The principal of the college was approached and apprised of the objectives of study and following his permission, a notice was circulated and lady students were requested to participate. A brief introduction about the objectives of the study was given to the subjects. Confidentiality was assured. A total of 138 subjects participated in the study but 14 records (10.1%) were excluded due to incomplete responses. The age of subjects ranged from 16-21 years with a mean age of 18.9 (S.D.1.19).

Information on age, class, marital status, place of origin, current place of stay, family type and income; and clinical details such as history of physical and psychiatric illness, menstrual history, family history of physical and psychiatric illness, details of family outlook, emphasis on physical appearance and family preference for health foods was obtained. Body mass index (weight in kilograms divided by the square of height in meters) was calculated to determine the weight status of individuals. Subjects were divided into three groups according to BMI: less than 18 (underweight), 18-24.99 (normal), and 25 or above (overweight). Subjective perception of having a weight problem was evaluated by two questions: “How do you rank your body?” and ‘What is

the desirable body you prefer?" Four options were given: 'overweight,' 'normal or average,''thin,' and 'slim.'

Subjects were also administered the Body Shape Questionnaire (BSQ),[19] Rosenberg Self-Esteem Scale,[20] and General Health Questionnaire-28 (GHQ-28).[21] BSQ measures concern about body shape besides body size overestimation. It has 34 questions rated on a six-point Likert scale from 'never' to 'always.' The mean scores for each group according to BMI categories were calculated. The Rosenberg Self-Esteem Scale consists of 5 positively worded items and 5 negatively worded items. Each item is rated on a 5-point scale, and responses are summed to produce a total self-esteem score (negatively worded items are reverse scored before summing). Scores range from 10 to 50, with higher scores indicating more positive self-esteem. Rosenberg reported a reliability coefficient of .92 among adolescents. [20] General Health Questionnaire-28 is a self-rated screening instrument, designed to identify short term changes in mental health - depression, anxiety, social dysfunction and somatic symptoms. It does not yield a clinical diagnosis. It is a widely accepted and reliable method of establishing minor psychiatric morbidity among general populations. Using the Likert scoring, a cut off score of 4/5 is most effective at separating cases from non cases. Five of the seven items in the severe depression subscale of the questionnaire measure aspects of suicidal thinking. Respondents who scored on two or more of these five items were regarded as having notable suicidal thoughts.

Statistical analysis was conducted using the SPSS program. Descriptive statistics were used to determine categorical variables. Spearmen's correlations were used to examine relationships between BMI, age, weight, height, body shape disturbances, self-esteem and GHQ scores. The samples were categorized into three groups according to BMI and were compared on the various variables.

RESULTS

The mean age of the sample was 18.9 (SD=1.19). No subject was married. Half of the subjects were staying in the hostels. There was no difference between the students in the BMI based subgroups as regards the type of family, place of origin, family income, history of psychiatric illness and family history of illness. Thirteen subjects (10.5%) had a history of physical illness. The mean age at menarche of the sample was 13.9 years (SD=1.12). BMI values ranged from 14.60 to 27.99, with a mean of 19.4 (S.D.2.59). There were 36 (29.1%) underweight; 84 (67.7%) normal weight and 4 (3.2%) overweight subjects in the sample. No subject was obese. BMI based subgroups did not differ with regard to age, height, and age at menarche, but did so with regard to weight ($F=46.88$, $df=2, 121, 123$, $p<0.001$).

Two fifths of the sample (41.9%) considered their family outlook as traditional, one tenth (8.1%) as modern, and half as 'intermediate.' About a quarter of the sample (24.2%) reported being fussy about food since childhood, and 37.9% of subjects reported that their family lay emphasis on physical appearance. Further, almost 87.9% of subjects reported a family preference for health foods. Most subjects perceived their body (weight) as normal (27.4%) or slim (38.7%), but 7.3% felt they were overweight and 26.6% felt that they were thin. As against this, 86.3% desired to be slim. A small proportion of the females wanted to be of normal weight (5.6%) or overweight (2.4%).

Also, only 5.6% wanted to be thin. It could be assumed that many of the normal weight tended to perceive themselves as either slim or thin.

The mean BSQ scores of the sample was 54.8 (SD=22.56). There was significant differences in BSQ across the three categories of BMI (F=3.712, df=2, 121, 123, p<.05) (Table 1). The mean score for self-esteem on RSES was 21.22 (SD=3.71). The mean score on GHQ was 18.68 (SD=12.4). More than 90% of the sample (N=114) was above the cut off scores of 5 for 'caseness.' The mean score on the anxiety and insomnia (GHQ-B) subscale was 5.17 (SD=4.69) and 56.5% of the sample was above the cut off. The three BMI based subgroups differed significantly with regard to GHQ (B) scores (F=3.32, df=2, 121, 123, p<.05). The mean score on the depression subscales (GHQ-D) was 3.87 (SD=4.17). Inspection of suicidaity items revealed that 67.8% of the sample was at or below the cut off and 32.3% was above the cutoff.

Table 1: Comparison of body shape, self-esteem and general psychopathology across BMI based subgroups

Variable	Underweight (N=36) Mean (SD)	Normal (N=84) Mean (SD)	Overweight (N=4) Mean (SD)	F Value df (2, 121, 123) p value
BSQ	49.6 (15.6)	55.9 (24.4)	80.0 (18.7)	3.712*
RSES	20.9 (3.9)	21.2 (3.6)	23.2 (4.1)	0.698
GHQ (Total)	21.2 (13.5)	17.8 (12.1)	13.7 (1.2)	1.229
GHQ (B)	6.78 (5.05)	4.58 (4.45)	3.0 (2.45)	3.324*
GHQ (D)	3.9 (4.7)	4.0 (4.01)	1.00 (1.15)	.878

* p<.05

Spearman's correlations between age and body shape revealed a significant positive relationship (ρ=0.240, p<0.01) (Table 2). There was also a positive relationship between BSQ and BMI (ρ=0.271, p<0.01); weight and BMI (ρ=0.829, p<0.01); weight and BSQ (ρ=0.297, p<0.01). There was also a positive relationship between BSQ and GHQ total scores (ρ=0.345, p<0.01) and all the subscores of GHQ. Self-esteem and age at menarche were not correlated with other variables (data not shown in table) and height was not correlated with any variable except weight (ρ=0.418, p<0.001, data not shown in table)

Table II: Correlation between selected variables (Speraman's ρ coefficient)

	BSQ	GHQ-A	GHQ-B	GHQ-C	GHQ-D	GHQ-Total	Weight
Age	.240**	.087	.050	.190*	.083	.103	.083
BMI	.271**	-.011	-.181*	-.076	-.138	-.137	.829**
BSQ		.357**	.245**	.270**	.291**	.345**	.297**
GHQ-A			.613**	.328**	.501**	.801**	.050
GHQ-B				.358**	338**	.774**	-.154
GHQ-C					.412**	.646**	-.039
GHQ-D						.728**	-.065
GHQ-Total							-082

- p<.05, **p<0.01

DISCUSSION

The growth spurt and increase in body fat that occurs with puberty may predispose the adolescent girl to weight preoccupation, body shape dissatisfaction and harmful weight control practices. Dieting during the teenage years has been associated with anxiety, depression, and low self-esteem, nutritional deficiencies, impaired concentration, as well as inhibited growth. In extreme cases, dieting has been linked to the development of eating disorders. In this study disturbance in perception of body shape was associated with younger age, as in earlier studies that have pointed out that body weight, shape and size preoccupation was pronounced in early adolescence.[1]

In the present study only 3.2% of the female adolescents were overweight (BMI), while more than 65% perceived themselves to be either slim or thin and 67.7% desired to be slim. These results suggest that female adolescents were preoccupied with their appearance, body weight and shape as also observed in earlier studies.[1-3, 6] In most cultures being overweight is viewed negatively in females.[2, 22, 23]

Unlike the observations made in previous studies,[2, 11] the present study did not find a correlation between BMI and self-esteem or depression. This could be a Type 2 error as the present sample had very few overweight and no obese subjects.

In this present study, 91.9% of subjects scored above the cut off on the GHQ-Total and 32.2% scored above the cut off on suicidality items of GHQ. Understandably, most subjects also had high scores on anxiety, somatic symptoms and social dysfunction subscales. This finding suggests that adolescence is the phase of turmoil, uncertainties and mood instability. Recent studies have shown that greater than 20% of adolescents in the general population have emotional problems and one-third of adolescents attending psychiatric clinics suffer from depression.[24] Despite this, depression in this age group is greatly under diagnosed. A study on Korean female adolescents reported a prevalence estimate of 64% for depression.[18]

The study has several limitations. The occurrence of high frequency of caseness based on standard cutoff (GHQ scores) should be interpreted cautiously, and structured psychiatric interviews seem indicated to confirm psychiatric diagnosis. Further studies with a larger sample size and more specific instruments to tap depression and other common mental disorders in this population are warranted. Further studies are needed to determine the effect of perception of a weight problem on weight control behaviors among female adolescents.

This study has implications for health education of the adolescents. Adolescents with a distorted perception of body weight may set unrealistic goals and choose unhealthy behaviours to control their weight.[25] Health care providers need to educate female adolescents about their normal weight range and methods to maintain appropriate weight through proper diet and exercise. In addition, health care providers need to help them attain a realistic, positive perception of their weight in order to prevent depression and lowered self-esteem. Professionals should also encourage and support healthy eating patterns and physical activity while encouraging adolescents to recognize personal strengths not related to physique.

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