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# Eating Attitudes and its Psychological Correlates among Female College Students

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*Keywords :* *eating attitudes, anxiety, depression self esteem.*

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# Eating Attitudes and its Psychological Correlates among Female College Students

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*Abstract -* The purpose of the present study was to find out the prevalence and psychological correlates of abnormal eating attitudes in female college students in the city of Chennai, Tamil Nadu. Two hundred undergraduates with mean age 19.0 years from five premiere colleges affiliated to the University of Madras were administered the Eating Attitudes Test (EAT-26), Rosenberg Self Esteem Scale, State Trait Anxiety Inventory and Beck Depression Inventory. Abnormal eating attitudes (EAT-26 score ≥ 20) were found in 30% of the total sample. Use of Pearson Correlation and independent t-test revealed that participants who had abnormal eating attitudes had scored higher levels of depression and higher levels of both state as well as trait anxiety than those with normal eating attitudes ( Eat-26 score <20 ). No significant correlation was found between low self esteem and abnormal eating attitudes. Further, abnormal eating was not related to weight status as assessed using the body mass index (BMI). The present findings indicate a substantial prevalence of abnormal eating attitudes among female college students and also abnormal eating attitudes related to psychological characteristics such as anxiety and depression. The above findings highlight the need for the attention of clinicians, community workers and psychologists to curtail the risk of increase in eating disorders among this population.

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## I. Introduction

Adolescence is a period of transition from childhood to adulthood and as such has a richness and diversity unmatched by any other stage of life. Sometimes referred to as teenage years, youth or puberty adolescence covers the period from roughly 10 to 20 years in the life of an individual (Steinberg, 2001).

According to Witte, Skinner and Carruth (1991) and Hurlock (1999) adolescence is a period that is characterized by dramatically accelerated physical, physiological emotional and social development. The psychological, emotional and social tensions during the adolescent years may be attributed to the profound body changes associated with sexual development, identity crisis, family conflicts and pressure for peer group acceptance (William, 1990). Apart from these problems, a vast body of literature highlights eating disorders as an emerging problem with detrimental health consequences among this vulnerable age group.

During adolescence, many individuals become preoccupied with their body weight and shape and they attempt to achieve the ideal physique reinforced by media messages that equate attractiveness with thinness. This preoccupation influences their dieting and eating behaviours (Rus-Makovec & Tomori, 2000; Makimo, Hashizum, Yasushi, Tsuboi & Dennersteei, 2006) and subsequently leads to eating disorders (Patel, Phillips & Pratt, 1998).

The current diagnostic classification of eating disorders include a restrictive form in which food intake is severely limited (anorexia nervosa), a bulimic form, in which binge eating episodes are followed by attempts to minimize the effects of overeating via vomiting, catharsis, exercise or fasting (bulimia nervosa) (Stein, 1991; Whitaker, 1992) and those non specified eating disorders that do not fulfill the criteria for anorexia nervosa or bulimia nervosa (Crow, Agras & Halmi, 2002).

Eating disorders are most prevalent in western cultures where white women experience social pressure to thinness (Patel et al., 1998) and this problem seems to be the major psychological problem as it has been reported that 1.3% of the general western population meet formal criteria for disordered eating with higher prevalence among adolescents and adults (Nattiv & Lynch, 1994). Such prevalence has also been reported in non – western populations though varying in, severity and frequency from those in the west (Mumford, Whitehouse & Platts, 1991; Makimo et al., 2006). With regard to the Indian scenario, diagnostic entities such as anorexia nervosa and bulimia are not common (Khandelwal, Sharan & Saxena, 1995) but occur in milder forms with fewer symptoms (Srinivasan Suresh & Jayaram, 1998).

It has been found that disturbed eating attitudes are ten times more prevalent in females than in males (Prouty, Protinsky & Canady, 2002 ; Pritts & Susman, 2003). Young adulthood especially during the transition to a college setting appears to be a vulnerable time for development or a continuation of eating disorders when parents have little control or influence on eating behavior (Morris, Parra & Stender, 2011) and when peer influence is greater. In a recent study, Bas, Asci, Karabudak and Kiziltan (2004) reported abnormal eating attitudes in a substantial 11.5 % of Turkish university students. An even higher prevalence (17.5%) was found in mid atlantic university students (Prouty et al., 2002). Srinivasan et al.,

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(1998) investigated the nature and extent of eating disorders in 210 medical students in the city of Chennai in India, and reported the absence of anorexia nervosa, bulimia nervosa and other eating disorders. However, 15% of the students examined had a form of distress and disorder in eating habits as well as attitude towards body weight. In another study, Tendulkar et al., (2006) reported faulty eating habits in 13.3% of 451 college students in urban Mumbai. Higher scores on depression and suicidal ideation were also reported in the population with faulty eating habits.

Over the past three decades there have been considerable number of studies on the relationships between abnormal eating and factors such as self-esteem, anxiety depression and body mass index, but the conclusions are conflicting. Abnormal eating attitudes as revealed by the EAT-26 score, was found to be significantly correlated with lower self esteem (Bas et al., 2004) and higher trait anxiety (Bas et al., 2004; Ross and Gill, 2002).

In a recent study, Cohen and Petrie (2005) investigated the psychosocial correlates of disordered eating among under graduates. The symptomatic and eating disordered groups reported more sadness, anxiety, guilt, stress and less happiness, confidence and self-esteem than the asymptomatic group. Several other studies have also linked different forms of eating disorders with depression and addiction (Garfinkel, Moldofsky & Garner, 1980; Hatsukami, Eckert, Mitchell & Ryle, 1984; Walsh, Roose, Glassman, Gladis & Sadik, 1985). However, Thomas, James and Bachmann (2000) reported that low self-esteem and depressed mood were independently associated with disordered eating attitudes of English secondary school students. Similarly, Lorenzo, Lavori and Lock (2002) reported a weak correlation between high EAT-26 score and depression in high school students in the Philippines.

With regard to the relationship between body mass index (BMI) and eating attitudes, published reports have yielded conflicting results. Jones, Bennett, Olmsted, Lawson and Rodin (2001) reported occurrence of eating disorders particularly with those with high BMI value suggesting a potential link between disordered eating and overweight. However, Lorenzo et al., (2002) reported a weak correlation between abnormal eating attitudes and BMI. Hoerr, Bokram, Lugo, Bivins and Keast (2002) reported that BMI was a significant but a very weak predictor for disordered eating in female college students. This finding is in accordance with those of Zimmerman and Hoerr (1993) and Wong and Huang (1999) who reported that disordered eating is not related to weight status as compared to body satisfaction.

Female adolescents and young adults, particularly the college going population, are most vulnerable since colleges may serve not only as a place to develop disordered eating but a time and place to learn how to have a healthy relationship with food and one's own body (Martz, Graves & Sturges, 1997). Seemingly innocent dietary habits, exercise and weight control behaviour during this stage need to be taken seriously as they may lead to eating disorders that can affect an individual's overall health and well-being (Bulick, 2002; Bardick et al., 2004). Therefore precise information on the eating attitudes of college students would be extremely valuable in detecting abnormal eating behaviour at an early stage itself. If not identified and treated in the early stages abnormal eating attitudes may lead to chronic conditions with devastating, physical, emotional and behaviour consequences (Lask & Bryant - Waugh, 1999).

Further, from the above review it is also evident that there is a dearth of information on the prevalence of abnormal eating attitudes and its psychological correlates in the Indian context. Such studies are warranted especially among adolescents and young adults owing to the erratic and unhealthy eating trends (viz., snacking, skipping of meals, consumption of fast foods and junk foods, binge eating, excessive dieting) that have become popular in India as a result of acculturalisation, urbanization and globalization. Hence a systematic critical study was undertaken with the following objectives:

1. To determine the prevalence of abnormal eating attitudes among female college students in the city of Chennai, Tamil Nadu
2. To find out the differences between female college students with normal and abnormal eating attitudes in self–esteem ,depression, state and trait anxiety.
3. To find out the association between body weight status and eating attitudes of female college students.

The choice of the study group is relevant because 18 years of age has been speculated to be the age of onset for eating disorders (Thelen et al., 1987). Further, college students tend to adopt abnormal eating attitudes as fads in food habits and western concepts of beauty and attractiveness in slimness are diffusing among the youth in this vulnerable age group (Srinivasan et al., 1998)

## II. Method

### *a) Selection of the Sample*

By using convenience sampling technique, five premiere colleges affiliated to the University of Madras were approached to collect data regarding demographic details, eating attitudes, self-esteem, depression, and anxiety of female college students. Prior permission was obtained from the respective principals of the colleges explaining the purpose and inclination of the study. After permission was obtained, the researcher addressed college students and oriented them about the nature, purpose and significance of the research undertaken. Consent forms were then distributed to the participants and those who were willing to participate in the study were asked to give their written consent and the same

was obtained. It took approximately 30-40 minutes to administer the tests and collect the data from the students

*b) Description of the Sample*

Participants consisted of 200 female college students between 17-21 years of age from five premier colleges affiliated to the University of Madras in the city of Chennai. The mean age of the sample was 19.0 ± S.D 1.46. Majority (66%) of the students were non-vegetarians. With regard to participation in sports, only twenty two students (11%) of the total sample reported involvement in sports activities.

*c) Instruments Used*

A demographic questionnaire was used to elicit information regarding age, height, weight, participation in sports and dietary pattern (vegetarian/non vegetarian).

The *Eating Attitude Test (EAT-26):* Eating attitudes of the female college students were assessed using the EAT-26 developed by Garner, Olmstead, Bohr and Garfinkel (1982). The instrument contains twenty six items with six possible answers ranging from never (0) to always (3). The total score on the EAT-26 are derived as sum of the composite items, ranging from 0 to 78. Scores that are greater than or equal to 20 on the Eat-26 are frequently associated with abnormal eating attitudes and behaviour and scores that are less than 20 are associated with normal eating attitudes.

*Rosenberg Self- Esteem Scale (RSES*): Self – esteem was measured by the self –esteem scale developed by Rosenberg (1965). It is a ten-item Likert-type scale with items answered on a four-point scale from strongly agree to strongly disagree. Five of the items have positively worded statements and five have negatively worded ones. The scale measures state self-esteem by asking the respondents to reflect on their current feelings. The scale score ranges from 0-30, a higher score denotes higher self-esteem. Correlations range from .82 to .88. and Cronbach's alpha range from .77 to .88.

The *Beck Depression Inventory* (*BDI):* In order to evaluate depression, the BDI developed by Beck, Ward, Mendelson, Mock and Erbaugh (1961) was used to evaluate 21 symptoms of depression that includes cognitive, behavioral, affective and somatic component of depression. The statements are rank ordered and weighted to reflect the range of severity of the symptom from neutral to maximum severity. Numerical values of zero, one, two and three are assigned to each statement to indicate degree of severity. The total Beck Depression Inventory score can range from 0-63, higher scores represent more reported depression.

The *State Trait Anxiety Inventory* (STAI): The STAI developed by Speilberger, Gorsuch and Lushene (1972) was used to measure state and trait anxiety respectively. It is a definitive instrument that clearly measures and differentiates the generally ambiguous concept of anxiety, into situational anxiety and trait anxiety. The state anxiety scale consists of 20 items that evaluate how the respondents "feel right now at this moment" and the trait anxiety scale evaluates how the respondents "generally feel. Scores for both State and Trait Anxiety Inventory have a direct interpretation i.e., high scores on their respective scales mean more trait or state anxiety and low scores mean less. The cut-off score for state anxiety is 36 and for trait anxiety is 42. All these instruments were selected for data collection as they have been widely used in previous studies among adolescents and were found to be reliable in the Indian context.

*d) Criteria to Classify Weight Status Based on Body Mass Index:*

The self – reported height and weight provided in the demographic questionnaire was used to compute body mass index (BMI) which was calculated using the formula weight in kilograms/height in meter squared). Based on their body mass index, the participants were graded as underweight (BMI<18.5), Normal (18.5-24.9), Overweight (25.0-29.9), Obesity ( BMI >30) as per the WHO (2002) guidelines. With regard to the present sample, it was observed that 61.5% were of normal weight. Thirty percent (60) of the students were underweight; 7.5% (15) were overweight and only one percent was obese.(Table 1)

*e) Data Analysis*

The data collected were coded and analysed using the SPSS ( Statistical Package for Social Sciences) version 11. Descriptive statistics like mean and standard deviation were obtained for age, body mass index, eating attitudes, self-esteem, depression and anxiety. The relationship between eating attitudes and related psychological characteristics was examined using Pearson correlation. Independent 't' test was done to find the difference between students with normal and abnormal eating attitudes in self–esteem ,depression, state and trait anxiety. Analysis of variance was done to find the mean difference in eating attitude scores in the four BMI categories.

## III. Results and Discussion

It is widely believed that the process of admixture of western attitudes and behaviours occurring at a rapid rate in India due to urbanization, globalization an acculturalisation may give rise to abnormal eating attitudes. This may soon lead to the emergence of severe diagnostic entities such as anorexia nervosa and bulimia nervosa among college students if not identified and treated at an early stage itself (Srinivasan et.al., 1998). Hence, the present study attempted to determine the prevalence rate of abnormal eating attitudes among female college students and to find out the difference in self-esteem, depression, state and trait anxiety between college students with normal and abnormal eating attitudes.

The study revealed a substantial prevalence of abnormal eating attitudes (30%) among the female college students chosen for the study (Table1). The current prevalence was found to be much higher than a study done by Srinivasan et al., (1998) who reported 15% of female college population in Chennai with a form of eating distress. Interestingly, the current prevalence rate was higher than previous studies that reported abnormal eating in 11.5% of Turkish university students (Bas et al., 2004) and 17.5% in mid Atlantic university students. (Prouty et al., 2002).

The above findings indicates the alarming prevalence of abnormal eating attitudes among female college students in the city of Chennai, Tamil Nadu and challenges the notion that abnormal eating attitudes are predominantly a western malady. The diffusion of western ideals with regard to body image and food habits coupled with the reinforcement of media messages of western concepts of beauty and attractiveness in slimness could be probable reasons for the increased prevalence of abnormal eating attitudes in this vulnerable age group of college students. It can also be attributed to the invasion of international chain of restaurants that offer delicious and attractive calorie rich ready- to- eat foods . In the recent past, these food outlets have lured the youth of the present generation into consuming 'fast foods' and 'junk foods' rather than traditional wholesome home-made foods and have probably brought about a dramatic change in the food habits and eating attitudes among them.

In the present study there was no significant difference in the eating attitudes of female college students based on body mass index categories (underweight, normal, overweight and obese) indicating that abnormal eating attitudes are related more to attitudes and perception of one's own self in terms of their body image rather than their actual body weight. This finding is supported by Lorenzo et.al., (2002) who reported a weak correlation between abnormal eating attitudes and body mass index. Further, Zimmerman and Hoerr (1993) and Wong and Huang (1999) also reported that disordered eating is not related to weight status as compared to body dissatisfaction.

Comparison between vegetarian and non – vegetarian students revealed a significant difference ($P < 0.01$) among them in their eating attitudes. It was observed that the non- vegetarian group had higher scores($16.15 \pm 9.91$) on the EAT-26 when compared to the vegetarian group ($12.37 \pm 8.63$) thereby suggesting greater tendency towards abnormal eating attitudes. Non-vegetarian students tend to indulge in fleshy foods and fried delicacies that are a rich source of fat. It is quite likely that they may also be tempted to try new variety of rich foods and eat more than required which may likely lead to abnormal eating attitudes.

Table 2 presents a description of the sample with regard to selected psychological variables such as self-esteem, depression, and state and trait anxiety. Analysis of the relationship between eating attitude scores and these psychological variables revealed a significant correlation between abnormal eating attitudes and levels of depression, state and trait anxiety. No significant correlation was found between self-esteem and abnormal eating attitudes (Table-3). This finding is in contrast with the findings of Gargari, Khadem-Haghighian, Taklifi, Hamed-Haghighian, Behzad and Shahkari ( 2010) who reported that subjects with disordered eating attitudes had lower self esteem than normal subjects. It is quite likely that other factors such as depression and anxiety may contribute more to abnormal eating attitudes.

Further investigation into the differences in selected psychological characteristics between students with normal and abnormal eating attitudes revealed a significant difference in depression and trait anxiety scores , whereas no significant difference was found in state anxiety and self-esteem scores (Table 4). Participants in the abnormal eating attitude category had exhibited higher scores on depression when compared to those with normal eating attitudes. It is speculated that people who tend to be sad, discouraged about the future and disappointed in themselves often use food as means of venting their emotions. Some may get preoccupied with food and over – eat in an attempt to overcome their depression. This in turn may eventually lead to obesity. Others may just starve themselves when they are depressed which may gradually make them underweight. Apart from this, the resulting obese or underweight physique may aggravate depression. Thus depression and abnormal eating attitudes may begin to appear in a vicious cycle and may be mutually exacerbating.

Regarding trait anxiety, participants in the abnormal eating attitude category had higher trait anxiety scores. Some individuals have an inherent tendency to take things hard, excessively worry about trivial issues in daily life and demonstrate discontentment and disappointment in every area of their lives. Such individuals may adopt unhealthy food habits such as skipping of meals in a day, snacking in between meals or binge eating as a means of coping with their anxiety. Probably such seemingly harmless food habits may likely lead to abnormal eating attitudes that may eventually accelerate the prevalence the eating disorders if not addressed in the early stages itself. This result is supported by earlier studies by Bas et al., (2004); Ross & Gill, (2002).

Results also revealed that participants with abnormal eating attitudes had scored higher on state anxiety than those with normal eating attitudes, though the difference was not statistically significant. This probably could be due to the fact that situations that stimulate feelings of nervousness, tension, worry and discomfort may often make an individual respond to food in a

repulsive manner. On the other hand, some may become preoccupied with food and indulge in binge eating just to 'cool' themselves down. Such dietary responses to situational anxiety may be the reason for abnormal eating attitudes. Besides this, the pressure imposed by mass media messages that equate slimness with beauty and attractiveness may also give rise to fears of being overweight. The anxiety to maintain the ideal body image may lead to abnormal eating attitudes among female college students.

No significant difference was found in the self-esteem scores of female college students with normal and abnormal eating attitude. This result was contrary to the finding in previous studies that indicated that abnormal eating attitudes was found to be significantly correlated to lower self-esteem The conflicting result in the present study is probably because the instrument used measures global self esteem rather than multidimensional self esteem of an individual. It is possible that self-worthiness of female college students may not be related to their eating attitudes.

## IV. Conclusions

The prevalence rate of abnormal eating attitudes seems to be high among female college students as 30% of the students in the present study reported abnormal eating attitudes. This gives insight that abnormal eating attitudes is a major health concern among female college population and also suggests the increased risk of eating disorders among them. Non-vegetarian participants seemed to show greater tendency towards abnormal eating attitudes than their vegetarian counterparts. Participants with abnormal eating attitudes had scored higher levels of depression and state as well as trait anxiety. Findings also reveal that eating attitudes are not related to actual body weight status and could probably be related more to the perception of one's own self in terms of their body image. From the present study it can be inferred that awareness about the ill-effects of abnormal eating behaviour needs to be created among female college students by nutritionist, community workers and health psychologists as a preventive strategy to curtail the risk of increase in eating disorders among this population.

### *a) Limitations of the Study*

One of the major limitations of the present study is that data was collected only from 200 female college students from five colleges due to time constraint and resource crunch. Findings cannot be generalized since only self report measures of symptoms and concerns characteristic of eating disorders were used and this needs further confirmation using diagnostic criteria. With regard to the assessment of self-esteem, a global measure was used instead of a multidimensional self-esteem scale.

*Table 1 :* Description of the sample with regard to eating attitudes and body mass index based on standard norms

| Variable | Group | Female college students (N=200) | | | |
|---|---|---|---|---|---|
| | | N | % | Mean | S.D |
| Eating attitudes (EAT-26 score) | Normal<20 | 140 | 70 | 9.64 | 4.96 |
| | Abnormal ≥ 20 | 60 | 30 | 27.07 | 6.29 |
| Body Mass Index | Underweight (BMI<18.5) | 60 | 30 | 17.06 | 1.32 |
| | Normal (BMI18.5-24.9) | 123 | 61.5 | 21.05 | 1.63 |
| | Overweight (BMI 25.0-29.9) | 15 | 7.5 | 26.41 | 1.23 |
| | Obesity (BMI >30) | 2 | 1.0 | 30.07 | .04 |

*Table 2 :* Description of the sample with regard to self- esteem, depression, state and trait anxiety

| Variable | Norms | Female college students | | | |
|---|---|---|---|---|---|
| | | N | % | Mean | S.D |
| Self-esteem | High<20 | 85 | 42.5 | 14.14 | 1.52 |
| | Low>20 | 115 | 57.5 | 27.76 | 1.78 |
| Depression | Low<16 | 139 | 69.5 | 6.58 | 4.58 |
| | High>16 | 61 | 30.5 | 22.90 | 6.00 |
| State Anxiety | Low<40 | 123 | 61.5 | 29.49 | 6.98 |
| | High>40 | 87 | 43.5 | 44.41 | 9.01 |
| Trait anxiety | Low<40 | 72 | 36 | 31.49 | 6.03 |
| | High>40 | 128 | 64 | 49.85 | 7.13 |

*Table 3 :* Relationship between eating attitudes and selected psychological variables such as self-esteem, depression, and state and trait anxiety

| Variable | Self esteem | Depression | State anxiety | Trait anxiety |
|---|---|---|---|---|
| Eating attitudes | -.045 | .303 (**) | .139(*) | .229(**) |

** p<0.01 *p<0.05

*Table 4 :* Mean, S.D, and t-value of self-esteem, depression and anxiety of female college students based on eating attitudes score

| Variable | Group | Mean | Std. Deviation | 't' value |
|---|---|---|---|---|
| Self-esteem | Normal Eating attitudes (N= 140) | 21.23 | 4.09 | 1.452NS |
| | Abnormal Eating attitudes (N=60) | 20.35 | 3.45 | |
| Depression | Normal Eating attitudes (N= 140) | 10.26 | 8.82 | 3.156** |
| | Abnormal Eating attitudes (N=60) | 14.58 | 8.96 | |
| State anxiety | Normal Eating attitudes (N= 140) | 38.31 | 11.52 | 1.429NS |
| | Abnormal Eating attitudes (N=60) | 40.73 | 9.52 | |
| Trait anxiety | Normal Eating attitudes (N= 140) | 42.26 | 11.24 | 1.909* |
| | Abnormal Eating attitudes (N=60) | 45.52 | 10.55 | |

** p<0.01 * p<0.05 NS = Not Significant

## V. Acknowledgment

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