



ISSN: 2456-0057  
IJPNPE 2021; 6(1): 273-275  
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[www.journalofsports.com](http://www.journalofsports.com)  
Received: 11-11-2020  
Accepted: 20-12-2020

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## A cross-sectional study on eating habits and body mass index among women in Kerala

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### Abstract

Eating attitudes consist of beliefs, thoughts, feelings, behaviours and relationship with food, and understanding these attitudes may help to understand food choices and the dietary pattern of a population are governed by many factors such as geography of the region, socio-economic and cultural characteristics of the people and their exposure to the world outside, therefore, eating not just because we are hungry and craving nutrients but also for a host of emotional and habitual reasons. Eating is a complex process made up of learned behaviour, social expectations, acquired tastes, and attitudes and feelings about eating in general and about certain food items in particular. The aim of this study was to determine how far the eating attitudes" and its influence over the body mass index among Keralites women's, also an attempt is made to cautious and reminds about their weight also, an efforts to improve eating attitude, dietary pattern and nutritional status the women in Kerala.

**Keywords:** Eating attitudes, body mass index, keralites, women

### 1. Introduction

Eating attitudes consist of beliefs, thoughts, feelings, behaviours and relationship with food, and understanding these attitudes may help to understand food choices. The dietary pattern of a population is governed by many factors such as geography of the region, socio-economic and cultural characteristics of the people and their exposure to the world outside. We eat not just because we are hungry and craving nutrients but also for a host of emotional and habitual reasons. Healthy eating is not about strict dietary limitations, staying unrealistically thin, or depriving our self of the foods we love. Rather, it's about feeling great, having more energy, and stabilizing our mood. College students are an ideal population with which to explore eating behaviours as the first time an individual is able to make his or her own food choices is commonly during college years (Winett, & Davy, 2008). They are at an increased risk for poor eating habits due to their stressful lifestyle, and frequently poor diet practices. This period in an individual's life is an important time to develop healthy eating attitudes and behaviours to prevent diseases later in life. The onset of puberty means that the individual's focus is often very much on body shape and weight, the process of individuation makes personal control into an important issue, and the formation of social bonds makes the teenager particularly sensitive to others' evaluation of her appearance. The normative level of unhealthy eating attitudes increases across the teenage. Self-esteem plays a particular part in the development of eating disorders (Button, 1990). Research has suggested that eating disorders and disordered eating are widespread on college campuses (Harris, 1995). Eating disorders on college campuses are estimated to be higher than that of the general population. College campuses have been referred to as a "breeding ground" for the development of an eating disorder. Social changes encourage unhealthy food consumption and sedentary lifestyles, society penalize the fat body. We live in a "culture of thinness" in which media images celebrate an unrealistically fit and firm body ideal, especially for women.

Studies focusing only on women have shown that overweight women had a stronger drive for thinness and a more negative body image than normal-weight women or underweight women (Counts & Huffine, 1990). Overweight women, especially, have more negative views about their appearance, fitness, and health. Disordered eating and body dissatisfaction are influenced by body mass index (BMI) and socioeconomic status (SES).

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Candy and Fee (1998) found that higher BMIs were significantly correlated with higher body dissatisfaction in preadolescent girls. Elevated BMI has been found to be positively associated with disturbed eating attitudes influenced by a desire to be thinner. The purpose of the study is to assess possible relationships between Eating Attitudes on BMI among a sample population of female undergraduate college students in South, Middle and Northern regions of Kerala.

## 2. Materials and Methods

### 2.1 Eating Attitude Test (EAT-26)

The EAT-26 has been a particularly useful screening tool to assess "eating disorder risk" in high school, college and other special risk samples [5]. The Eating Attitudes Test is the tool that is commonly used as a screening instrument for the presence of disturbed eating patterns. The questionnaire contains 26 questions and the scores range from 0-78. All the questions, except the question number 26, receives the following value: Always = 3, Usually = 2, Often = 1, Sometimes = 0, Rarely = 0, Never = 0. For question number 26, the responses value receive on reversed order such as :Always = 0 ,Usually = 0 ,Often = 0 ,Sometimes = 1 ,Rarely = 2, Never = 3 respectively. The total score is obtained by adding the value of each response together. Higher score ranging from 20 and above indicate chance of an eating disorders and other related behaviours such as are anorexia nervosa and bulimia nervosa.

### 2.2 Body Mass Index (BMI)

The ratio of weight to height measured in kilograms/metres<sup>2</sup>. Measured height and weight values were used to calculate and categorize weight status according to body mass index, a standard assessment of body fat composition [6] obtained for this study from the formula known as Quetelefs Index, which calculates the ratio of weight, in kilograms, to the square of height, in meters [7]. Measured height and weight were taken from the students and was classified as underweight

(below 18.5), normal weight (18.5–24.9) and overweight (above 25). In the current study, BMI was treated as a continuous variable with lower numbers representing less fatness.

## 3. Results and Discussion

Results of the present study shows that no significant difference prevails in eating attitude on region ( $F=.582, p>0.05$ ) however, BMI Classes differ significantly on eating attitudes ( $F = 8.722, p< .000$ ) which goes hand in hand with the study conducted by [8, 9] that regional differences found in appearance concerns support the notion that modern societies are more likely to foster eating disorders in women and elevated BMI has been strongly associated with disturbed eating attitudes. A similar result is also found by [10] over the potential link between disordered eating attitudes and being overweight. The relationship may exist for females of all BMI scores, but it could be particularly important in understanding why women who are already close to society's ideal would engage in disordered eating behaviours in an attempt to lose weight a large sample of women across all BMI categories were found to experience a high drive for thinness, suggesting that women's eating attitudes are influenced by a desire to be thinner. The graphical representation of the mean score of Eating Attitude among Regions, and BMI Class were presented below in Fig 1 and 2.

### 3.1 Tables and Figures

**Table 1:** Details of the College Women Participants in the Study

Variables	Value Label	N
Region	1 South	686
	2 Middle	544
	3 North	545
Body Mass Index	1 Under weight	545
	2 Normal	1136
	3 Over weight	94
Total		1775

**Table 2:** Descriptive statistics of dependent variable Eating Attitudes on Region and BMI Class

Dependent Variable	Demographic variables	Sub Scale	Mean	Std. Deviation	N
Eating Attitudes	Region	South	10.657	8.008	686
		Middle	10.483	8.434	544
		North	10.983	7.576	545
		Total	10.708	8.006	1775
	BMI Class	Underweight	10.83	8.17	545
		Normal	10.18	7.73	1136
		Overweight	16.23	8.24	94
Total		12.417	8.053	1775	

The descriptive statistics of dependent variable Eating Attitude on Region and BMI Class is shown on Table. 2 that, Female among the regions, the total mean score was 10.708

(SD =8.00626) and Body mass index and the total mean score was 12.4176 (SD= 8.05376).

**Table 3:** Univariate ANOVA on Eating Attitudes with Region, Body Mass Index of women

Source	Demographic Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Eating Attitude	Region	72.089	2	36.045	.582	.559
	Body Mass Index	1089.248	2	544.624	8.722	.000

\* Significant at .05 level

The ANOVA result on Table 4 reveals that, the dependent variable Eating Attitude is statistically significant differences

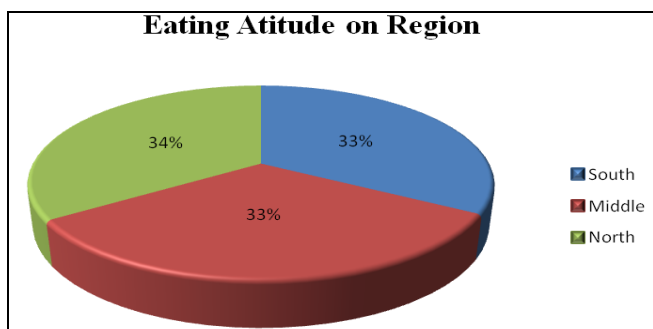
among BMI ( $F=544.624, p< 0.05$ ). But no differences found with Region ( $F=.582, p>0.05$ ).

**Table 4:** Pair wise Comparisons of Eating Attitude

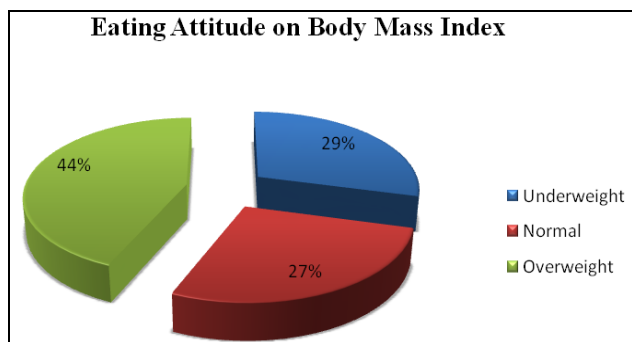
Dependent Variable	Demographic Variable	Sub Variable (I)	Sub Variable (J)	Mean Difference (I-J)	Std. Error	Sig. (P-value)
Eating Attitude	BMI	Underweight (10.83)	Normal	.6509	.411	.254
			Over weight	-5.3992*	.882	.000*
		Normal (10.184)	Under weight	-.6509	.411	.254
			Over weight	-6.0501*	.848	.000*
		Overweight (16.234)	Under weight	5.3992*	.882	.000*
			Normal	6.0501*	.848	.000*

\*. The mean difference is significant at the .05 level.

The pair wise comparison of Eating Attitudes on Table 5 shows that, eating attitudes differs among Underweight with Overweight (MD=5.3992), Normal with Overweight (MD=6.0501) and no differences were seen with Underweight with Normal. The graphical representation of the mean score of Eating Attitude among Regions, and BMI Class were presented below in Fig 2 and 3.



**Fig 1:** Estimated marginal means of mean score of Eating Attitudes on region



**Fig 2:** Estimated marginal means of mean score of Body Mass Index among the regions

**4. Conclusions**

Results of the present study shows that no significant difference prevails in food intake attitude on region. A similar study conducted Lee & Lee (2000), claimed that regional differences found in appearance concerns support the notion that modern societies are more likely to foster eating disorders in women. Body Mass Index related with disturbed eating attitudes. Mean EAT scores were 10.83 for underweight females, 10.18 for normal weight females, and 16.23 for overweight females. The present study, BMI Classes differ significantly on Eating attitudes ( $F = 8.722, p < .000$ ) which parallels the study by Lynch *et al.* (2004) that, elevated BMI has been strongly associated with disturbed eating attitudes. A direct link was also found in the study by Vander Wal & Thomas (2004), between eating attitudes and BMI as having a higher weight was linked to disturbed eating habits. In another female adolescent sample, a potential link was found between disordered eating attitudes and being overweight (Jones *et al.*,

2001). In the EAT test a higher mean score represent more depressed eating behaviours. Edman & Yates (2004) states that in an adult sample, physical size was not the best indicator of disturbed eating attitudes. Of course, this relationship may exist for females of all BMI scores, but it could be particularly important in understanding why women who are already close to society's ideal would engage in disordered eating behaviors in an attempt to lose weight. Kenny & Adams (1994) states that, a large sample of student females across all BMI categories were found to experience a high drive for thinness, suggesting that women's eating attitudes are influenced by a desire to be thinner.

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