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Effect of Dietary Practices on Self-esteem of Adolescent Girls

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A B S T R A C T

Researches and theories have proved the interrelated functioning of our body and brain that establishes a sense of wellness, in terms of self-esteem. The present study assessed the dietary habits of adolescent girls and its relation to self-esteem. This descriptive study involved 250 adolescent college girls of Chennai city selected randomly. The survey was conducted using a questionnaire. The dietary practices of the adolescents were examined by self-developed questions on their daily consumption pattern. This section also included the Eating Attitude Test **(**EAT-26) to measure the symptoms and concerns characteristic of eating disorders (Garner *et al.*, 1982). The self-esteem was assessed using State Self Esteem Scale by Heatherton and Polivy (1991). The data was analyzed using 't' test, ANOVA, Pearson's correlation and Chi-square test. The results revealed that 60% of the adolescent girls were non-vegetarians. However the frequency of consuming of non-vegetarian food was low. Skipping of breakfast (60%) was also common among them. Significant relationship was observed between self-esteem and eating attitude ($r = 0.201$) at $p < 0.01$ level. The results showed that adolescents with low self-esteem were at a risk of developing eating disorder. The subcomponents of self-esteem, namely performance, social and appearance self-esteem were low for those adolescents with poor dietary habits. About 62% of the selected girls enjoyed eating outside once in a month like restaurant, hotels and fast food outlets. The results of 't' test showed that the non-skippers of breakfast had better eating attitude than the skipper at $p < 0.05$ level. Implication of the study will focus on the vulnerability of the college students with respect to eating disorder and its impact on psychological well-being.

Introduction

India has the largest population of adolescents 243 million in the world. Adolescent is a period of physical, social and emotional transition from childhood to adulthood. Among humans adolescent is a multidimensional transitional stage from immature and social dependency of childhood into adult with goal and social accountability (Greenfield, 2003). Their age are sub-staged as early (10 to 13 years), middle (14 to 18 years), and late adolescent (19 to 22 years) (Neinstein, 2009). This transition brings about a state of confusion and difficulty in self-evaluation. Adolescent not only play a major role in identifying and feeling good about themselves but also has a great impact on family and peer group relationships. The physical and emotional changes in adolescent bring about a challenge in their psychological well-being especially self-esteem. (Hoare and Cosgrove, 1998) defined Self-esteem as the favorable or unfavorable attitude towards oneself. Various factors affect the self-esteem of adolescents such as age, gender, socioeconomic status and body image. Perceived body image of adolescents was found to be an important influence on adolescents eating behaviour. Changes in dietary practices during adolescence are influenced by cognitive, physical, social, and lifestyle factors.

In a study conducted by (Hoare and Cosgrove, 1998) on self-esteem, body esteem and eating habits in Scottish adolescent girls, it was shown that within the age of 10-16 years, there were great differences in self-esteem and dietary habits between the different age groups. Among the older respondents, eating restraints and lower self-esteem were more common than among the younger girls, and the correlation between these two variables was strong.

Self-esteem decreases in the transition from childhood to adolescence (Santrock, 2008). Self-esteem is closely linked to physical appearance and body size during this period (Barker *et al.*, 2000). Kansi *et al.*, (2003) in their study found that Low self-esteem has been identified as an important risk factor for developing eating disorders. Dieting is shown to be very common, and can have physical consequences as delayed growth and puberty (Skeie and Klepp, 2002). Many adolescent girls are trying to lose weight or trying to keep from gaining weight, regardless of whether they are overweight or not (Neumark-Sztainer *et al.*, 1999). Prevalence of eating disorders, body image dissatisfaction, low self-esteem and unhealthy weight control behaviors have been reported among adolescents worldwide, and are a public health concern with physical and psychological consequences (Gitau, 2014).

This study will help to understand the dietary habits and eating attitudes of adolescent girls, self-esteem level of the college girls, the relationship between dietary practices and self-esteem.

The need for this study is to show the eating attitude of adolescents, increased frequency of eating out among adolescent girls, skipping of breakfast among college adolescents, to show the association of body mass index and self-esteem of adolescent.

Materials and Methods

The present study was descriptive and cross sectional in nature. Random sampling technique was used in the selection of 250 adolescent girls. The samples are from two suburban private colleges in Chennai namely Annai Violet Arts and Science College and Bhaktavatsalam Memorial College for Women. Demographical

variables include age, class, discipline, types of family, economic status of the family.

Dietary pattern of the college students was gathered by asking questions related to their frequency of food consumption. Eating habit was assessed using EAT-26 questionnaire. The Eating Attitudes Test (EAT-26), by (Garner *et al.*, 1982), is a widely used self-report questionnaire with 26-item standardized self-report measure of symptoms and concerns characteristic of eating disorders. Self-esteem of the girls was measured by State Self – Esteem Scale by (Heatherton and Polivy., 1991)[15]. There are three self-esteem factors in the State Self-Esteem Scale: Academic Performance, Social Evaluation, and Appearance. The Cronbach's alpha was computed for the individual tool. The alpha value of the following tools, namely Self-esteem scale and EAT-26 were 0.80, 0.79. The Cronbach's alpha values prove that the tools are highly reliable among the selected samples. Statistical analysis was performed using SPSS by descriptive statistics.

Results and Discussion

The age group of the girls varied between16-20 years, 20% of the college girls age ranged from 16-18 years and 80% belonged to 19-21 years. Sample consists of 227 undergraduate students and 23 post graduate students. 63% girls were from arts group and the remaining was from science. Maximum of 51% of the parent (mothers) have completed their higher education when compared to their husband. About 216 girls belonged to nuclear family and 71% of the girls were from middle income background. Around 181 girls had single parent working.

Dietary pattern of the college girls revealed that frequency of eating outside food (once a month) was common among 157 girls. 60% of the adolescent girls were non-vegetarians. Majority of the girls 60% were skipping their morning breakfast on a regular basis. Serving of fruits, vegetables and milk were found to be very low among the girls (one serving a day). All most all the girls were sweet tooth 99.6%. Frequency of taking fried foods and soft drinks were found to be higher among the college girls. But on the other hand 76% girls said they avoid high salted foods (Table 1).

The mean scores obtained by the girls on height ranged from 132cm to 174cm with a mean value of 154.04cm+6.76cm with regard to the weight, scores ranged from 22kg to 92kg with an average value of 48.79kg+10.68kg. In reference to the body mass index, the scores ranged from 11.22kg/m^2 to 39.26kg/m^2 with mean value of 20.59 kg/m^2 +4.500 kg/m^2.

The Body Mass Index of 46.8% girls were found to be normal, 37.6% underweight, were as 10.8% were overweight and only 4.8% were found to be obese (Table 2).

Results of 't' test revealed the BMI of the adolescent girls differs significantly between the breakfast non skippers and breakfast skippers ($t = 2.43$: $p<0.05$). It is lucid from the means value that the breakfast skippers (21.15) have higher BMI compared to that of breakfast non skippers (19.75). Similarly significant difference was found in the eating attitude of girls between the skippers and non-skippers ($t = .033$: $p<0.05$). The mean value explains that the non-skippers (21.23) have higher eating attitude then the skippers (17.89). However there found to be a non-significant difference in the performance (t=.752 NS), social (t=.356 NS), appearance (t=.218 NS) and overall self-esteem (t=.297 NS) between the skippers and non-skippers (Table -3).

Table.1 Dietary pattern of the samples

VARIABLES		N	%
FAMILY RULES	Very Liberal	12	4.8
	Liberal	32	12.8
	Neither Strict nor Liberal	71	28.4
	Strict	77	30.8
	Very Strict	58	23.2
ACCESS YOUR FAVOURITE MEALS AT HOME	Yes	212	84.8
	No	35	15.2
FAVOURITE MEAL AT HOME	Traditional Foods	92	36.8
	Fast Foods	50	20.0
	Snacks	92	36.8
	If others, specify	16	6.4
FREQUENCY OF EATING FOOD OUTSIDE	Once/Month	157	62.8
	2-3 Times/Month	42	16.8
	1-2 Times/Week	36	14.4
	5 or more Times/Week	15	6.0
EAT BREAK-FAST ON A REGULAR BASIS	Yes	100	40.0
	No	150	60.0
OUTSIDE FAVOURITE FOOD	Indian	187	74.8
	Chinese	28	11.2
	Italian	18	7.2
	If others, specify	17	6.8
FREQUENCY OF OUTSIDE FOOD	Once/Week	76	30.4
	Twice/Week	43	17.2
	Once/Month	109	43.6
	Twice/Month	22	8.8
SERVING OF FRUIT	0	79	31.6
	1	88	35.2
	2	58	23.2
	3	16	6.4
	4	5	2.0
	5	4	1.6
SERVING OF VEGETABLES	0	30	12.0
	1	87	34.8
	2	74	29.6
	3	34	13.6
	4	3	1.2
	5	11	4.4
	More	11	4.4
SERVING OF MILK AND MILK	0	60	24.0

PRODUCTS	1	91	36.4
	2	66	26.4
	3	17	6.8
	4	5	2.0
	5	6	2.4
	More	5	2.0
AVOID HIGH SALT FOODS	Yes	189	75.6
	No	61	24.4
AVOID HIGH FAT FOODS	Yes	155	62.0
	No	95	38.0
AVOID HIGH SUGAR FOODS	Yes	**1**	.4
	No	249	99.6
FREQUENCY OF TAKING SODAS/SOFT DRINKS	Daily	23	9.2
	4-6 Times/Week	79	31.6
	1-3 Times/Week	62	24.8
	Once in a Month	16	6.4
	Never	20	8.0
	Not Sure	50	20.0
FREQUENCY OF EATING VADA/BAJJI/BONDA/FRENCH FRIES/CHIPS/BAKED FOOD	Daily	18	7.2
	4-6 Times/Week	72	28.8
	1-3 Times/Week	75	30.0
	Once in a month	27	10.8
	Never	28	11.2
	Not Sure	30	12.0
FREQUENCY OF TAKING SWEETS/CANDIES/DESSERTS	Daily	9	3.6
	4-6 Times/Week	33	13.2
	1-3 Times/Week	69	27.6
	Once in a month	31	12.4
	Never	81	32.4
	Not Sure	27	10.8
TRIED UNFAMILIAR FOODS	Yes	104	41.6
	No	146	58.4
CONSUME EXTRA FOODS WHEN UNHAPPY	Yes	88	35.2
	No	162	64.8

Table.2 Body Mass Index of the samples

VARIABLES		**N**	**%**
BODY MASS INDEX	Underweight	94	37.6
	Normal	117	46.8
	Overweight	27	10.8
	Obese	12	4.8

Table.3 Comparison between Breakfast Non-Skippers and Skippers on the Body Mass Index, Self-esteem, Eating attitude of Adolescent Girls

Variables		Skipping of Breakfast	N	M	SD	't'	p value
BMI		Non skippers	100	19.75	4.53	2.43	.015 *
		Skippers	150	21.15	4.40		
Self esteem	**Performance**	Non skippers	100	23.47	4.64	.31	.752NS
		Skippers	150	23.65	4.39		
	Social	Non skippers	100	27.76	5.33	.92	.356NS
		Skippers	150	28.40	5.37		
	Appearance	Non skippers	100	19.42	4.22	1.23	.218NS
		Skippers	150	20.11	4.35		
	Self esteem	Non skippers	100	70.65	11.12	1.04	.297NS
		Skippers	150	72.16	11.23		
Eating attitude		Non skippers	100	21.23	14.40	2.14	.033*
		Skippers	150	17.89	10.21		

* Significant at 0.05 level
NS Non-significant

Table.4 Comparison of the social, appearance, self-esteem and eating attitude of adolescent girls with reference to Body Mass Index

Variables		Sum of Squares	Df	Mean Square	F	Sig.
Social	Between Groups	191.22	3	63.74	2.25	.082
	Within Groups	6949.59	246	28.25		
	Total	7140.81	249			
Appearance	Between Groups	244.59	3	81.53	4.58	.004**
	Within Groups	4376.35	246	17.79		
	Total	4620.94	249			
Self esteem	Between Groups	705.55	3	235.18	1.89	.130 NS
	Within Groups	30474.16	246	123.87		
	Total	31179.71	249			
Eating attitude	Between Groups	323.62	3	107.87	0.72	.536NS
	Within Groups	36436.37	246	148.11		
	Total	36760.004	249			

** Significant at1% level
NS Not significant

Table.5 Tukey B Test

Variables	BMI	N	Subset for alpha =.05	
			1	2
Social	Underweight	94	27.02	
	Obese	12	28.50	
	Normal	117	28.85	
	Overweight	27	28.85	
Performance	Obese	12	16.58	
	Overweight	27	18.11	18.11
	Underweight	94		20.10
	Normal	117		20.35
Self esteem	Obese	12	68.75	
	Underweight	94	69.98	
	Overweight	27	70.66	
	Normal	117	73.30	
Eating attitude	Obese	12	15.67	
	Normal	117	18.68	
	Underweight	94	19.79	
	overweight	27	21.22	

Table.6 Body Mass Index of the Adolescent Girls with breakfast non-skippers and breakfast skippers

BMI	**Non Skippers**		**Skippers**		**Chi-square value**
	N	**%**	**N**	**%**	
Under weight	50	50.0%	44	29.3%	
Normal	37	37.0%	80	53.3%	11.460**
Over weight	10	10.0%	17	11.3%	$p < 0.01$
Obese	3	3.0%	9	6.0%	

** Significant at 0.01 level

Table.7 Relationship between components of Self-esteem with Body Mass Index and Eating attitude of Adolescent Girls

Variables	**BMI**	**Eating attitude**
Performance	.142*	.172**
Social	.149*	.131*
Appearance	-.121	.178**
Self esteem	.082	.201**

** Significant at 0.01 level
* Significant at 0.05 level

One way ANOVA was carried out to compare the social appearance, self-esteem and eating attitudes of adolescent girl with reference to Body Mass Index. Significant difference was observed between the appearance self-esteem of adolescent girl

with BMI (F = 4.58; p<0.01). With respect to the overall self-esteem and eating attitude of adolescent girls, there exists no significant difference between the BMI (Table 4).

Tukey B Test (Table 5) carried out for multiple comparisons divides the sample into 2 subsets showing a difference between the 4 categories of BMI in the social, performance, self-esteem and eating attitude of adolescent girls. With respect to the social self-esteem, it was found that underweight, obese, normal and overweight adolescent had similar social esteem while considering the performance, it was found that overweight, under, and normal weight adolescent do not show any differences but are significantly differences from each other. While considering the eating attitude of underweight, obese, normal and overweight adolescent, it was found to be similar.

The Chi square value clearly shows that there is a significant association between the BMI of Adolescent Girls and skipping of breakfast. Only 29% of breakfast skippers were underweight. It is also observed that 37% of the breakfast non-skippers were normal. It is also observed that 6% of the breakfast skippers were obese and 3% of the breakfast non skippers were also obese (Table 6).

Pearson's Correlation analysis (Table 7) showed a significant positive correlation between the performances, social, appearance, overall self-esteem and body mass index of Adolescent Girls.

The results are supported by various studies such as Many of the adolescent girls modify their normal dietary pattern and follow disturbed eating behaviours (Mishra and Mukhopadhyay, 2010). The cultural context in India has changed in the past few years (Srinivasan *et al.,* 1998). A shift towards the concept of thin body image is occurring among girls of urban areas through mass media. (Mishra and Mukhopadhyay, 2010) found Sikkimese adolescent girls often opted for skipping of meals to control their body weight. Adolescents eating behaviour was associated with emotional state, particularly emotional distress. (Neumark-Sztainer *et al.,* 1999) in their study found out that adolescents eating behaviour was influenced by their mood. Eating Out During adolescence, teens spend less time with family and more time with friends. One-third of all teen eating occasions occur outside the home (Channel One Network, 1998). Increase in the prevalence of eating disorders, body image dissatisfaction, low self-esteem and unhealthy weight control behaviors have been reported among adolescents worldwide, and are a public health concern with physical and psychological consequences and found that the BMI was positively associated with self-esteem in the study conducted by him (Gitau, 2014).

Recommendation

Nutrition education should be provided to the college girls in order to know the importance of dietary practices for their well-being. Consequences of skipping the breakfast need to be explained. Support from parents and school has to be provided to improve the self-esteem of the girls. Improving the self-esteem among girls will lead to good dietary practices.

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