

A Study to Assess the Knowledge and Attitude of Adolescents Regarding Eating Disorders in Kolkata

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ABSTRACT

Background: Today, adolescents are prone to concerns about their weight, shape, size and body image, and as a result, diet to lose weight. This increases the risk of eating disorders. **Aim:** This study was designed to identify the knowledge and attitude of adolescents regarding eating disorders. **Settings and design:** A descriptive study design was adopted to assess the knowledge and attitude of the adolescents studying in a general college in Kolkata. **Methods and materials:** A structured questionnaire to assess the knowledge and an attitude scale to assess the attitude of 100 adolescents of age group 16-21 were administered. **Statistical analysis used:** Descriptive and inferential statistics were used to calculate the frequency and percentage of knowledge and attitude and correlation between knowledge and attitude. **Results:** 8% subjects had adequate knowledge and 86% had moderately adequate knowledge. 12% subjects were aware of characteristics of anorexia nervosa whereas 71% knew the characteristics of bulimia nervosa. 66% subjects were acquainted with the adverse effects of eating disorders. 46% agreed that they should not follow film models blindly. 71% strongly agreed that binge eating causes obesity. Significant correlation between knowledge and attitude was found in attitude towards healthy life style, following film models and positive parenting behavior. **Conclusion:** This study reflects the lack of knowledge and inappropriate attitude of adolescents towards the eating disorders which poses threat to this vulnerable population of the society and thus increasing the burden of eating disorder.

Keywords: Adolescents, Eating Disorder, Anorexia Nervosa, Bulimia Nervosa, Knowledge, Attitude.

Adolescence represents one of the critical transitions in the life span and is characterized by a tremendous pace in growth and change that is second only to that of infancy. WHO defines,

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“adolescence as the period in human growth and development that occurs after childhood and before adulthood from the age of 10-19”. In this vulnerable population prevalence of eating disorder has increased significantly. There exists a broad spectrum of eating and weight-related problems which range from negative body image and disordered eating behaviors to diagnosed eating disorders, such as anorexia nervosa and bulimia nervosa. Eating disorders are a major public health concern for adolescents. These disorders are rampant on high school, and college campuses. They are often referred to as the deadly diet. The reported prevalence rate for anorexia nervosa is 0.48% among 15 to 19 years old girls. Approximately 1% to 5% of adolescent girls meet the criteria for bulimia nervosa¹. According to DSM 5, anorexia nervosa is characterized by restriction of energy relative to requirements, intense fear of gaining weight or becoming fat and disturbance in the way in which one’s body weight or shape is experienced. Bulimia nervosa is characterized by frequent episodes of binge eating followed by recurrent inappropriate compensatory behavior to prevent weight gain. Adolescents are prone to concerns about their weight, shape, size and body image, and as a result, diet to lose weight. Current estimates show that approximately 15% of teenagers in high school engage in these disordered eating behaviors². Anorexia, bulimia, and other eating disorders are serious health concerns; some of the medical consequences of eating disorders include osteoporosis, infertility, renal failure, hypokalemia, and acute electrolyte disturbances³. The most distressing fact about eating disorders is that they are the most deadly of all psychopathologies; 20% of people with an eating disorder diagnosis die from their physiological sequelae⁴.

Therapeutic strategies for anorexia nervosa, focuses primarily on family therapy. The combination of nutritional supervision and family therapy with parental approval may cure and prevent this problem. Internet based intervention for prevention of eating disorders to college students and presence of specifically trained counselors at private universities may be useful in inculcating positive attitude towards perception of body image.

Adolescent girls are the future mothers. A study conducted by Arumugam Indira and Katari Kantha showed that 8(15.38%) mothers were underweight which indicated a threat to the adolescents with eating disorder⁵.

The ability of adolescents to recognize potential eating disorders depends on their knowledge of the behavioral, physical, and psychological characteristics associated with anorexia nervosa and bulimia nervosa.

Many studies were conducted on the prevalence of adolescent eating disordered behavior; to date, little research has focused exclusively on the knowledge and attitude of adolescents on eating disorder.

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In light of the scarcity of research and the seriousness of eating disorders and in an effort to fill a research gap in the area, the present study investigated the knowledge and attitude of adolescents regarding common eating disorders.

MATERIALS AND METHODS

A descriptive study design was adopted to assess the knowledge and attitude of the adolescents studying in a general college in Kolkata regarding eating disorders.

Objectives of the study

- To assess the knowledge of adolescents regarding eating disorders.
- To assess the attitude of adolescents regarding eating disorders.
- To correlate knowledge and attitude of adolescents regarding eating disorders

Participants

100 adolescent girls were selected using non-probability convenient sampling method. Inclusion criteria for the sample selection were adolescents from age group 16-21 years and who can read and write English or Bengali.

Variables

In our study, variables are knowledge and attitude of adolescence regarding eating disorder. Both are independent variables.

Instruments

A structured questionnaire to assess the knowledge and an attitude scale to assess the attitude of adolescents were prepared. Demographic characteristics were also included in the tool. It consists of general information like age, education, religion, monthly family income, eating habit and presence of any other habit. Knowledge questionnaire consisted of 24 multiple choice questions which include types of eating disorder, characteristics of anorexia nervosa and bulimia nervosa, their adverse effects, treatment and prevention of anorexia nervosa and bulimia nervosa. Each correct response was scored one mark. Attitude scale consists of 14 items which were categorized under 4 category viz. strongly agree, agree, disagree and strongly disagree. These categories were scored as 4, 3, 2 and 1 respectively. Tool was validated by subject experts of specialized fields.

Procedure

Permission was obtained from the concerned authority and informed consent was taken from the subjects. The tool was administered to the college students selected on the basis of inclusion criteria. After 1 hour it was collected back and scores were computed.

Statistical analysis

The filled questionnaires were analyzed by descriptive and inferential statistics using statistical software R. Frequency and percentage distribution is done for knowledge and

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attitude scores respectively. Spearman's rank Correlation was done to correlate the knowledge and attitude score.

RESULTS

Table 1: Distribution of study population according to socio-demographic characteristics (n-100)

Parameters	No. (%)
Age	
16-18 Years	29 (29.00%)
19-21 Years	71 (71.00%)
Education	
Above Higher Secondary	100 (100%)
Religion	
Hindu	90 (90.00%)
Muslim	5 (5.00%)
Christian	5 (5.00%)
Monthly Family Income	
Below Rs. 5,000	11 (11.00%)
Rs. 5,000-10,000	31 (31.00%)
Rs. 10,000-15,000	30 (30.00%)
Above Rs. 15,000	28 (28.00%)
Eating Habit	
Non-vegetarian	100 (100.00%)
Other Habits	
Smoking and drinking	5 (5.00%)
Binging and purging	7 (7.00%)
None of the above	88 (88.00%)

100 students of a selected college in Kolkata were administered the knowledge and attitude scale. The observed socio-demographic characteristics of the respondents are depicted in Table 1. Majority (71%) of the subjects were from age group of 19 to 21. All subjects had education above higher secondary level. 7% subjects had binging and purging habit. Scores of knowledge and attitude of subjects did not vary significantly with age of the subject (P value $0.1235 > 0.05$ and $0.3044 > 0.05$) and monthly family income (P value $0.782 > 0.05$ and $0.4857 > 0.05$).

Table 2: Assessment of Knowledge of subjects on eating disorders as per correct response

Sl. No.	Subjects	No. (%)	95% C I
Q1	Favourite Foods of Adolescence	86 (86.00%)	(79.00%, 93.00%)
Q2	Food Amount and Timing	69 (69.00%)	(60.00%, 78.00%)
Q3	Eating Disorder means	50 (50.00%)	(40.00%, 60.00%)
Q4	Whether Obesity is an Eating Disorder	65 (65.00%)	(56.00%, 74.00%)
Q5	Main type of Eating Disorders	77 (77.00%)	(69.00%, 85.00%)

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Sl. No.	Subjects	No. (%)	95% C I
Q6	Eating Disorders Occurs commonly among	71 (71.00%)	(62.00%, 80.00%)
Q7	Incidence Rate is Higher among boys or girls	35 (35.00%)	(26.00%, 44.00%)
Q8	Reason for High Incidence of Eating Disorder among Adolescence	55 (55.00%)	(45.00%, 65.00%)
Q9	Reason for Changes in Diet among Adolescence	64 (64.00%)	(55.00%, 73.00%)
Q10	Characteristics of Anorexia Nervosa	12 (12.00%)	(6.00%, 18.00%)
Q11	Characteristics of Bulimia Nervosa	71 (71.00%)	(62.00%, 80.00%)
Q12	Symptoms of Anorexia Nervosa	55 (55.00%)	(45.00%, 65.00%)
Q13	Symptoms of Bulimia Nervosa	57 (57.00%)	(47.00%, 67.00%)
Q14	Weight Changing Pattern in Bulimia Nervosa	3 (3.00%)	(0.00%, 6.00%)
Q15	Eating Disorder affects on Hair and Teeth	77 (77.00%)	(69.00%, 85.00%)
Q16	Suspect Bulimia Nervosa in Yourself when	53 (53.00%)	(43.00%, 63.00%)
Q17	Warning Signs of Eating Disorders	48 (48.00%)	(38.00%, 58.00%)
Q18	Eating Disorder can lead to Death	69 (69.00%)	(60.00%, 78.00%)
Q19	Adverse Effect of Eating Disorders	66 (66.00%)	(57.00%, 75.00%)
Q20	Home Management of Eating Disorders	78 (78.00%)	(70.00%, 86.00%)
Q21	Anorexia Nervosa is treated by	67 (67.00%)	(58.00%, 76.00%)
Q22	Bulimia Nervosa is treated by	74 (74.00%)	(65.00%, 83.00%)
Q23	Prevention of Eating Disorder can be done by	61 (61.00%)	(51.00%, 71.00%)
Q24	Role of Educational Institution in preventing Eating Disorder	83 (83.00%)	(76.00%, 90.00%)

Mean knowledge score is 14.62. Only 8% subjects had adequate knowledge and 86% had moderately adequate knowledge. Table 2 demonstrates the distribution of study population according to knowledge regarding eating disorders. 50% of subjects were aware of the meaning of eating disorder. 65% opined that obesity is an eating disorder. 55% stated that social value, influence of social media and willingness to look slim were the reasons for eating disorder. Only 12% subjects were aware of characteristics of anorexia nervosa whereas 71% knew the characteristics of bulimia nervosa. 66% subjects were acquainted with the adverse effects of eating disorders. 67% and 74 % subjects showed awareness about treatment of anorexia nervosa and bulimia nervosa respectively.

Table 3: Distribution of attitude score of adolescents on eating disorders

Sl. No	Subjects	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Adolescents should follow healthy life style	31 (31.00%)	67 (67.00%)	1 (1.00%)	1 (1.00%)
2	Adolescents should avoid junk food as much as possible	37 (37.00%)	57 (57.00%)	3 (3.00%)	3 (3.00%)
3	Adolescents should not follow the film models blindly	35 (35.00%)	46 (46.00%)	15 (15.00%)	4 (4.00%)
4	Adolescents should not watch TV or play with mobile while eating	43 (43.00%)	40 (40.00%)	10 (10.00%)	7 (7.00%)

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Sl. No	Subjects	Strongly Agree	Agree	Disagree	Strongly Disagree
5	Adolescent should eat small and frequent food	47 (47.00%)	50 (50.00%)	3 (3.00%)	0 (0.00%)
6	Adolescents should consume fruits for healthy and glowing skin	47 (47.00%)	43 (43.00%)	8 (8.00%)	2 (2.00%)
7	Adolescents should drink plenty of water to clean their body	37 (37.00%)	33 (33.00%)	27 (27.00%)	3 (3.00%)
8	Less eating damages body structure rather than making beautiful	55 (55.00%)	31 (31.00%)	11 (11.00%)	3 (3.00%)
9	Binge eating causes obesity	71 (71.00%)	14 (14.00%)	10 (10.00%)	5 (5.00%)
10	Quick obesity reduction can damage body system	65 (65.00%)	23 (23.00%)	10 (10.00%)	2 (2.00%)
11	Adolescents should follow modern life style with rational for use	61 (61.00%)	21 (21.00%)	16 (16.00%)	2 (2.00%)
12	Unhealthy habits like drinking, smoking use of drugs have adverse effect on adolescent health	56 (56.00%)	28 (28.00%)	12 (12.00%)	4 (4.00%)
13	Peer group during adolescence can positively affect health	69 (69.00%)	24 (24.00%)	7 (7.00%)	0 (0.00%)
14	Positive parenting behavior reinforces the effect of peer influence	67 (67.00%)	10 (10.00%)	20 (20.00%)	3 (3.00%)

Overall attitude score was 12.08 ± 7.36 (mean \pm sd). Table 3 showed the distribution of study population according to attitude regarding eating disorders. 46% agreed that they should not follow film models blindly. 71% strongly agreed that binge eating causes obesity. 11% did not agree that less eating damages body structure than making beautiful. 61% strongly believed that adolescents should follow modern lifestyle with rational for use.

Attitude score had significant positive correlation with knowledge assessment score in three aspect which correspond to adolescents should follow healthy life style ($r = 0.176$), adolescents should not follow the film models blindly ($r = 0.195$) and positive parenting behavior reinforces the effect of peer influence ($r = 0.320$) with P value 0.040 (< 0.05), 0.026 (< 0.05) and 0.001 (< 0.05) respectively.

DISCUSSION

This study attempted to identify the knowledge and attitude of adolescents studying in a general college in Kolkata regarding eating disorders like anorexia nervosa and bulimia nervosa. In this study it was found that more than half of the study participants were aware of the common causative factors for eating disorders. Majority of them were also aware of the consequences of eating disorders. Various studies have been done regarding eating disorders and their prevalence but very few were done on knowledge and attitude of this vulnerable population regarding eating disorders.

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Liat Korn and Racheli Magnezi (2009)⁶ conducted a KAP study on 360 Israeli women comprising two age groups viz. 45-65 and 15-25 years of age. 60.3% women had high knowledge regarding symptoms of anorexia nervosa with majority of high score in older group. Younger women perceived anorexia nervosa as a positive trait while overall 51% expressed disagreement with positive perception towards anorexia nervosa. In the current study, adolescents had poor knowledge about characteristics of anorexia nervosa but majority perceived positively towards healthy traits against anorexia nervosa. Katari Kantha et al (2016)¹ conducted a similar study where 87% adolescents had inadequate knowledge regarding eating disorders with mean knowledge score of 10.30. In the present study mean knowledge score was 14.16 where majority had moderately adequate knowledge. Both the studies reflected the need for further attention to this vulnerable group in order to reduce the incidences of eating disorders.

In a study in Japan by Takasaki Y et al (2003)⁷, female college students aged 18 to 21 years-old were given questionnaires on ideal body shape. The results revealed that young women have a tendency to misunderstand their body shape, and to regard themselves as heavier than they really were⁶. In another cross sectional study done by Som N and Mukhopadhyay S (2015)⁸ in West Bengal, many overweight girls perceived themselves as overweight and engaged in weight-reducing activities. Unhealthy eating practices to reduce weight were followed by both overweight and normal-weight girls even by a few underweight girls. This study, like the present study also reinforces the need for health education. Another study by Stigler MH et al (2011)⁹ on eighth and tenth graders (n=1818) revealed that controlling one's weight was equally important to overweight and non-overweight youth (94.2% v. 84.8%, $p < 0.001$). Our study also shows similar attitudes expressed by the adolescents.

Social and cultural factors influence this disorder. In a study done by Pierce EF and Daleng ML (1998)¹⁰, a high distortion of body image among elite female professional ballet dancers were identified. Legenbauer T et al (2008)¹¹ investigated the influence of media exposure on body image in patients with eating disorder. The results showed that media exposure triggered body-related issues. Both perceptual and attitudinal body image components changed markedly after media exposure for patients with eating disorder, compared with normal control groups. In the present study also, majority of adolescents agreed that media persons should not be followed blindly.

Jennifer S. Hunta and Alexander J. Rothmanb (2007)¹² conducted a study in Midwestern United States on college students to assess mental models of anorexia nervosa and bulimia nervosa which showed that 89.6% of participants mentioned bingeing and purging and 89.5% of participants mentioned restricted food intake as characteristics of bulimia nervosa and anorexia nervosa respectively. In present study 57% and 5% adolescents respectively reported the same characteristics. In the same study 26% participant opined excessive concern about weight gain and appearance as one psychological feature of anorexia nervosa

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but in present study 9% considered it as only feature of anorexia nervosa. Therefore, similar to other studies, this study also emphasizes the need for creating more awareness in this issue. Very few studies were found on attitude of adolescents regarding eating disorders and association of knowledge and attitude. Amit Upadhyah et al(2014)¹³ has conducted a study on 120 adolescents females (age: 13-17years) who filled out questionnaires on eating attitudes and behaviors at one independent school and disturbed eating attitudes and behaviors were present in 26.67 % of adolescents girls. Our study showed similar results. This study has significant correlation between knowledge and attitude regarding eating disorders three major aspects. It was supported by a study conducted by Kamila Czepczor, Katarzyna Kościcka and Anna Brytek-Matera (2016)¹⁴ which revealed no significant correlation between knowledge about eating disorder psychopathology, attitude and behaviour related with eating disorders. Lack of significant correlation between certain knowledge aspects and attitude may be due to the tendency to respond on the basis of assumptions rather than facts. This may be one of the potential limitations of the study. Moreover this study is not a multi-centric study with considerably less sample size.

Despite these limitations study has important implications for research and practice. Knowledge about eating disorders is likely to be an important predictor of lay referrals, in which lay people encourage others to seek professional care for potential health problems. This study reinforces the need for further education for the adolescents who are the future leaders of our society.

CONCLUSION

Eating disorders are dangerous mental illnesses that occur in both female and male population especially adolescents. Adolescents have a greater concern of their social status among their peer group and are more influenced by social and cultural factors than adults. Anorexia nervosa is perceived by adolescents as an easy way to gain social benefits in order to become popular and successful in their life. These adolescents, especially girls perceive eating disorder as a positive tool for success and therefore become more vulnerable. The results of this study should be greeted with an alarm and preventive interventions must be developed. Since weight and shape concern are considered to be integral to the psychopathology of eating disorders, it is definitely worth paying attention to the prevention of high risk eating related attitude and behaviour as well as health promotion initiatives addressing weight and appearance related issues in this vulnerable population. More research needs to be devoted to eating disorder. Parents, educators, community leaders and counselors need to take an active role in encouraging adolescents in maintaining healthy eating habits in order to reduce the burden of this mental illness.

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Conflict of Interest

The authors declares no conflict of interest

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