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## A Study To Assess The Knowledge Regarding Eating Disorders Among Adolescents At Selected High Schools In Bengaluru, Karnataka, India.

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### ABSTRACT

Eating Disorder is much more than just being on a diet. An Eating Disorder is an illness that permeates all aspects of sufferer's life and is caused by a variety of emotional factors and influences profound effects on the people suffering and their loved ones. The present study was undertaken to assess the existing knowledge of adolescents on eating disorders and to find the association between knowledge and selected demographic variables of the respondents. The present descriptive survey design was conducted in the setting of selected High schools in Bengaluru. Fifty adolescents selected through purposive sampling technique. A self-administered structured questionnaire was used to assess knowledge on eating disorders. The data was analysed by applying descriptive and inferential statistics. There is a statistically significant association ( $P < 0.05$ ) found between knowledge level and demographic variables like age, sex and diet pattern. The results of the study indicated that adolescents need information regarding eating disorders and various measures that can be taken to prevent or treat them. Hence the researcher felt an information guide sheet will be useful for adolescents to enhance their knowledge regarding eating disorders.

**Keywords:** Eating disorders, Adolescents, Knowledge, Questionnaire, Content validity, Reliability,

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## INTRODUCTION

Many kids particularly teens are concerned about how they look and can feel self-conscious about their bodies. This can be especially true when they undergo dramatic physical changes during puberty and face new social pressures. Unfortunately, for a growing proportion of kids and teens, that concern can grow into an obsession which may become an eating disorder. Eating disorders such as anorexia nervosa or bulimia nervosa cause dramatic weight fluctuations which interfere with normal daily life, and damage vital body functions (1-3).

Eating disorders are a group of conditions characterized by abnormal eating habits that may involve either insufficient or excessive food intake to the detriment of an individual's physical and emotional health. It is not known with certainty what causes eating disorders. It can be due to a combination of biological, psychological or environmental causes. Socioeconomic-cultural changes and westernization could result in the culture-change syndrome of eating disorders in India today (4-6). Generally, eating disorders involve self-critical negative thoughts, feelings about body weight and food, and eating habits that disrupt normal body functions and daily activities (7-9). Being more common among girls, eating disorders can affect boys, too. They are so common in the U.S. that 1 or 2 out of every 100 kids will struggle with one, most commonly anorexia or bulimia. Unfortunately, many kids and teens successfully hide eating disorders from their families for months or even years (9).

People with anorexia have an extreme fear of weight gain and a distorted view of their body size and shape. As a result, they strive to maintain a very low body weight. Some restrict their food intake by dieting, fasting, or excessive exercise. They hardly eat at all and often try to eat as few calories as possible, frequently obsessing over food intake. The small amount of food they do eat becomes an obsession (12-14). Bulimia is characterized by habitual binge eating and purging. Someone with bulimia may undergo weight fluctuations, but rarely experiences the low weight associated with anorexia. Both disorders can involve compulsive exercise or other forms of purging food they have eaten, such as by self-induced vomiting or laxative use (12). Although anorexia and bulimia are very similar, people with anorexia are usually very thin and underweight but those with bulimia may be a normal weight or even overweight. Binge eating disorders, food phobia, and body image disorders are also becoming increasingly common in adolescence (15,16).

Obesity has reached epidemic proportions globally. Increased consumption of more energy-dense, nutrient-poor foods with high levels of sugar and saturated fats, combined with reduced physical activity, have led to obesity rates that have risen three-fold or more since 1980. The rising epidemic reflects the profound changes in society and in behavioural patterns of communities over recent decades. While genes are important in determining a person's susceptibility to weight gain, energy balance is determined by calorie intake and physical activity. Thus, societal changes and worldwide nutrition transition are driving the obesity epidemic. Economic growth, modernization, urbanization and globalization of food markets are just some of the forces thought to underlie the epidemic (17,18). Adolescents can help themselves from not developing eating disorders by nurturing their self-esteem, and encouraging healthy attitudes about nutrition and appearance. It is important to remember that eating disorders can easily get out of hand and are difficult habits to break. Eating disorders are serious clinical problems that require professional treatment by doctors, therapists, and nutritionists. Therefore, the purpose of the present study is to find the association between the knowledge of adolescents regarding eating disorders with selected demographic variables.

## MATERIALS AND METHODS

The present study is a non-experimental descriptive survey with a sample of 50 subjects conducted after the ethical clearance and informed consent. This study was conducted at selected high schools in Bengaluru. Target population for the present study was adolescents studying at selected high schools in Bengaluru. The participants for the present study were 50 adolescents studying at selected high schools in Bengaluru. Purposive sampling technique was adopted in the present study.

The adolescent students who are studying in 10th standard in High school, who are willing to participate in the study, who are present at the time of Data Collection and adolescent students who know to read English are included whereas, adolescent students who are not willing to participate in study are excluded.

The structured knowledge questionnaire consists of 2 Sections.

Section I: Consists of Questions on Demographic Data like age, sex, religion, diet pattern, meal frequency/day, hobbies, pocket money/month, type of family, residential area, father's educational status, mother's educational status, father's occupation, mother's occupation, monthly income of family and source of information regarding eating disorders which are 15 in number.

Section II: Consists of 32 questions on Knowledge of Eating disorders which are divided into 5 parts

- A) Part A: General: 3 question
- B) Part B: Meaning of eating disorders: 7 question
- C) Part C: Incidence and causes of eating disorders: 7 question
- D) Part D: Signs and symptoms of eating disorders: 11 question
- E) Part E: Prevention and treatment of eating disorders: 4 question

### Testing of the Instrument

**(a) Content validity of the tool:** Validity of the tool was established after consultation with subject experts from the field of Pediatric nursing, Pediatrician, Psychiatrist and clinical psychologist. Minor modifications were made on the basis of recommendations and suggestions of experts. After consulting guide, co-guide and statistician, final tool was reframed. Later the tool was edited by English expert.

**(b) Reliability of the tool:** The tool after validation was subjected to test for its reliability. The Structured Questionnaire administered to 5 participants. The reliability of the tool is computed using Split Half Karl Pearson's correlation formula (Raw Score Method). The reliability co-efficient of Structured Questionnaire is 0.9930 and validity co-efficient worked to be 0.9965 revealing the tool is feasible for administration for the main study. Since the Knowledge reliability co-efficient for the scale  $r > 0.70$ . The tool was found to be reliable and feasible.

The data was collected upon permission from the concerned authorities of the school. The investigator personally visited the school and data was collected from the sample by administering structured questionnaire after obtaining consent from the participants.

### Statistical Analysis

The data was analysed on the basis of the objectives of the study using descriptive statistics by using inferential statistical Chi-square test and was represented as tables and graphs.

## RESULTS

In the present study majority of respondents were from the age group of 15 years that is 70 percent and 30 percent were from the age group of 16 years. According to their sex, females were the majority respondents with the percentage of 56 and male were 44 percent in number. Further 74 percent of respondents consumed mixed diet while 26 percent were vegetarian (Figure-1).

According to the distribution of respondents by Meal frequency/day and Hobbies, majority of respondent that is 52 percent have meals thrice a day, while 36 percent have twice and 12 percent has meals only once a day. According to the hobbies, 56 percent of respondents like to listen to music, 22 percent like to play, 14 percent like to watch television, and 8 percent of respondents like to read (Figure-2). The overall Knowledge Scores of Respondents on Eating Disorders reveals that most of the respondents have inadequate knowledge that is 54 percent followed by moderate knowledge that is 46 percent and no respondent have adequate knowledge (Figure-3).

The aspect wise classification of respondent's knowledge level on eating disorders were obtained and classified as inadequate, moderate and adequate knowledge (Table-1). In inadequate respondents' knowledge level, the highest score was found to be 82 percent for Part-B: meaning of eating disorders followed by 72 percent for Part-D: signs and symptoms of eating disorders, 68 percent for Part-C: incidence and causes of eating

disorders, 66 percent for Part-E: prevention and treatment of eating disorders, and 60 percent obtained by Part-A: General questions. However, the total percentage for inadequate knowledge score is 54 percent. In moderate respondents knowledge level the highest score was found to be 34 percent for Part-A: General questions followed by 32 percent for Part-E: prevention and treatment of eating disorders, 30 percent for Part-C: incidence and causes of eating disorders, 28 percent for Part-D: signs and symptoms of eating disorders, and 18 percent obtained by Part-B: meaning of eating disorders. However, the total percentage for moderate knowledge score is 46 percent. In adequate respondents knowledge level the highest score was found to be 6 percent for Part-A: General questions followed by 2 percent each for Part-C: incidence and causes of eating disorders and Part-E: prevention and treatment of eating disorders, 30 percent for Part-C: incidence and causes of eating disorders, and no score for Part-B: meaning of eating disorders and Part-D: signs and symptoms of eating disorders. However, the total percentage for adequate knowledge score is zero.

In the present study, there are two categories of age group 15 and 16 years. Among 15 years, 65.7 percent had inadequate knowledge and 34.3 percent had moderate knowledge. While in 16 years, 73.3 percent had moderate knowledge and 26.7 percent had inadequate knowledge. Hence it was found that there is significant association between age and knowledge level of respondent on eating disorders with  $\chi^2$  Value of 6.45 which was found to be significant at 5% level (table-2).

The study reveals that 63.6 percent male had moderate knowledge and 36.4 percent had inadequate knowledge while compared with females had 67.9 percent of inadequate knowledge and 32.1 percent of moderate knowledge. Hence it was found that there is significant association between sex and knowledge level of respondent on eating disorders with  $\chi^2$  Value of 4.92 which was found to be significant at 5% level (table-3).

The respondents who are vegetarian had 76.9 percent of moderate knowledge and 23.1 percent of inadequate knowledge while compared with respondents who have mixed diet had 64.9 percent of inadequate knowledge and 35.1 percent of moderate knowledge. Hence it was found that there is significant association between Diet pattern and knowledge level of respondent on eating disorders with  $\chi^2$  Value of 6.76 which was found to be significant at 5% level (table-4). The respondents having meals once a day had 83.3 percent of inadequate knowledge and 16.7 percent of moderate knowledge. The respondent having meals twice a day had 61.1 percent of moderate knowledge and 38.9 percent of inadequate knowledge. The respondent having meals thrice a day had 57.7 percent of inadequate knowledge and 42.6 percent of moderate knowledge. Hence it was found that there is no significant association between Meals frequency/day and knowledge level of respondent on eating disorders with  $\chi^2$  Value of 3.88 which was found to be not significant at 5% level (table-5).

**Table-1: Aspect wise classification of respondent’s knowledge level on eating disorders, N=50**

No.	Knowledge Aspects	Knowledge level							
		Inadequate		Moderate		Adequate		Total	
		N	%	N	%	N	%	N	%
I	Part-A: General	30	60.0	17	34.0	3	6.0	50	100.0
II	Part-B: Meaning of eating disorders	41	82.0	9	18.0	0	0.0	50	100.0
III	Part-C: Incidence and causes of eating disorders	34	68.0	15	30.0	1	2.0	50	100.0
IV	Part-D: Signs and symptoms of eating disorders	36	72.0	14	28.0	0	0.0	50	100.0
V	Part-E: Prevention and treatment of eating disorders	33	66.0	16	32.0	1	2.0	50	100.0
	Combined	27	54.0	23	46.0	0	0.0	50	100.0

**Table-2: Association between Age and mean knowledge scores of respondents on eating disorders, N=50.**

Demographic Variables	Category	Sample	Respondents Knowledge				$\chi^2$ Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Age Group	15 years	35	23	65.7	12	34.3	6.45*	P<0.05
	16 years	15	4	26.7	11	73.3		
Total		50	27	100	23	100		

\* Significant at 5% Level,  $\chi^2$  (0.05,1df) = 3.84, NS: Non-significant

**Table-3: Association between Sex and mean knowledge scores of respondents on eating disorders, N=50.**

Demographic Variables	Category	Sample	Respondents Knowledge				$\chi^2$ Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Sex	Male	22	8	36.4	14	63.6	4.92*	P<0.05
	Female	28	19	67.9	9	32.1		
Total		50	27	100	23	100		

\* Significant at 5% Level,  $\chi^2$  (0.05,1df) = 3.84, NS: Non-significant

**Table-4: Association between diet pattern and mean knowledge scores of respondents on eating disorders, N=50.**

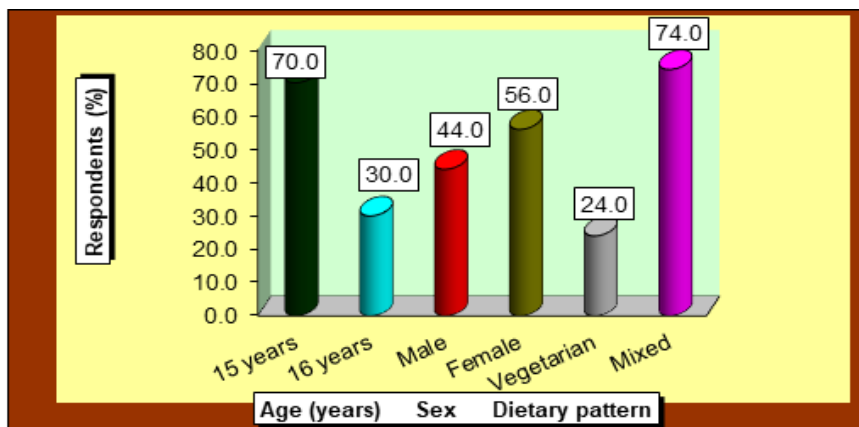
Demographic Variables	Category	Sample	Respondents Knowledge				$\chi^2$ Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Diet Pattern	Vegetarian	13	3	23.1	10	76.9	6.76*	P<0.05
	Mixed	37	24	64.9	13	35.1		

\* Significant at 5% Level,  $\chi^2$  (0.05,1df) = 3.84, NS: Non-significant

**Table-5: Association between Meal frequency/day and mean knowledge scores of respondents on eating disorders, N=50.**

Demographic Variables	Category	Sample	Respondents Knowledge				$\chi^2$ Value	P Value
			Inadequate		Moderate			
			N	%	N	%		
Meal frequency/day	Once	6	5	83.3	1	16.7	3.88 NS	P>0.05
	Twice	18	7	38.9	11	61.1		
	Thrice	26	15	57.7	11	42.6		

\* Significant at 5% Level,  $\chi^2$  (0.05,2df) = 5.99, NS: Non-significant



**Figure-1: Classification of Respondents by Age, Sex and Dietary pattern, N=50**

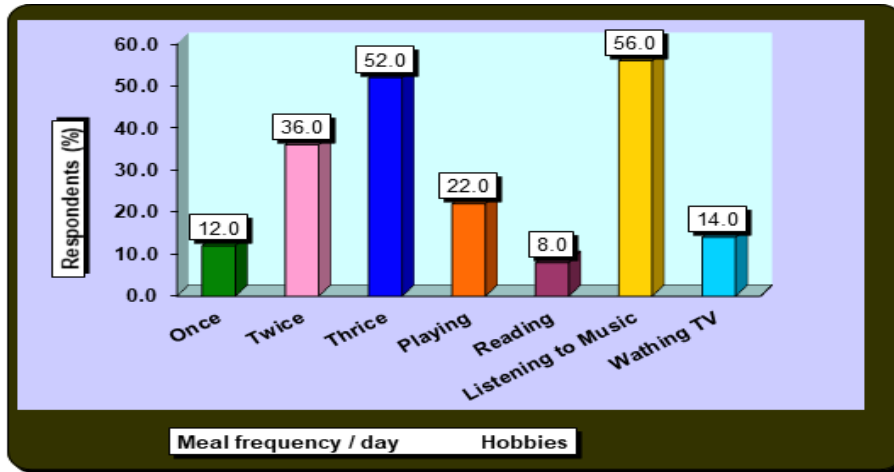


Figure.2: Classification of Respondents by Meal frequency and Hobbies, N=50

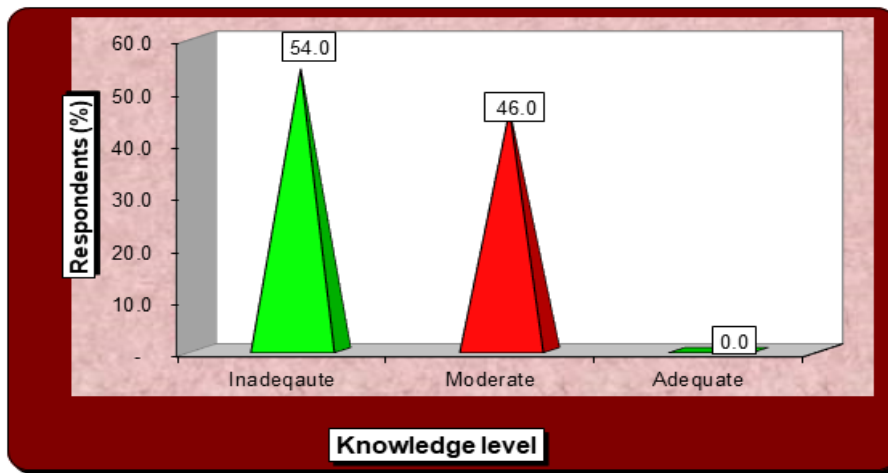


Figure-3: Classification of Respondents knowledge level on Eating Disorders, N=50

### DISCUSSION

The adolescence is the period of rapid growth and development. During this period, they are more concerned regarding their physical appearance. If they are not assessed and informed properly especially regarding their food habits and eating pattern it may result in malnutrition due to eating disorders. Therefore, the present study is intended to assess the knowledge of adolescents regarding eating disorders with a view to develop an information guide sheet.

In order to achieve the objectives in this study, descriptive survey approach was adopted to assess the knowledge of respondents on eating disorders. Data collected from 50 respondents were tabulated, analysed and interpreted by using descriptive and inferential statistics based on the formulated objectives of the study. For better clarity and thorough understanding, the findings were discussed under the following sections;

**Demographic characteristics of respondents:** Distribution of the respondents according to age revealed that majority that is 70 percent of the respondents were found in the age group of 15 years and 30 per cent in 16 years. According to sex, 56 percent were females and 44 percent were male. And majority of respondents were having mixed diet that is 74 percent and 26 percent were vegetarian. Findings of this study is consistent with a study conducted by Neumark-Sztainer D, Wall M, Larson NI, Eisenberg ME, Loth K. in July 2011 where the majority of subjects were from the age group from 15- 16 years (19) and the study conducted by Shroff H, Thompson JK in March 2004 showed that majority of samples were females (20). Majority of respondents that is 52 percent had meals thrice a day, with 36 percent twice a day and 12 percent once a day. 64 percent



respondents belonged to nuclear family and 36 percent belonged to joint family. Further majority of respondents that is 62 percent resided in urban areas followed by 20 percent in rural areas and 18 percent in semi urban areas. The monthly family income of the respondents was found as 48 percent between Rs 5,001-10,000, 30 percent below Rs 5,000 and 22 percent above 10,000. The study done by Silveira JA, Taddei JA, Guerra PH, Nobre MR in September 2011 showed the importance of meal frequency and balanced diet to prevent eating disorders (21). Further the study done by Singhal N, Misra A, Shah P, Gulati S in April 2010 showed that life style influences the pattern of eating (22).

#### **Aspect wise and overall knowledge level of respondents:**

The overall mean knowledge of respondents was 39.9 per cent with SD as 13.9 per cent. However, the highest mean knowledge score 45.5 percent was noticed in the aspect of prevention and treatment of eating disorders. 54 per cent of respondents found with inadequate knowledge level compared to 46 per cent noticed with moderate knowledge on eating disorders. Similar findings were supported by a study conducted by Rousseau A, Callahan S, Chabrol H in March 2011 where most of the adolescents had inadequate knowledge regarding eating disorders (23). Hence the results make it clear that the knowledge regarding eating disorders among adolescents was not adequate enough in order to prevent or tackle the condition.

#### **Association between knowledge levels with demographic variables:**

The results of the study revealed that there is significant association between knowledge level and selected demographic variables like age ( $\chi^2= 6.45^*$  at  $P<0.05$  level), sex ( $\chi^2= 4.92^*$  at  $P<0.05$  level), Diet pattern ( $\chi^2= 6.76^*$  at  $P<0.05$  level). Similar findings were found in study conducted by Bully P, Elosua P in May 2011 where age and sex was significantly associated with body dissatisfaction in eating disorders (24). Berge JM, Loth K, Hanson C, Croll-Lampert J, Neumark-Sztainer D conducted a study in July 2011 where results indicated that transitional events in the family life cycle followed by a lack of needed support during these transitions may precipitate the onset of eating disorders (25). However, there is no significant association between demographic variables such as Meal frequency/day ( $\chi^2= 3.88^*$  at  $P<0.05$  level), No study was found to support the findings of non-significance.

### **CONCLUSION**

Eating disorders are a group of serious conditions in which the person is so preoccupied with food and weight that he often focuses on little else. A person with an eating disorder may focus excessively on their weight and shape, leading them to make unhealthy choices about food with damaging results to their health. In aspect wise mean knowledge scores of respondents on eating disorders was highest which is related to prevention and treatment of eating disorders.

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