



## ORIGINAL RESEARCH PAPER

## Medical Science

### A SINGLE BLINDED CROSS-SECTIONAL SURVEY ON EATING DISORDERS AMONG THE DIFFERENT AGE GROUPS IN INDIA

**KEY WORDS:** Diet habits; dietary habits; eating behaviour; eating habits; surveys.

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#### ABSTRACT

**Background:** Eating disorders are considered to be a mental disorder involving abnormal eating habits affecting the normal life of individuals due to frequent comments on their weight and shape. Very few studies have attempted to establish the eating disorders among different age groups in India.

**Aim:** To compare the eating disorders among different age groups, namely school going children, college going students and adults.

**Materials and methods:** The cross-sectional survey consists of 150 healthy subjects including both male and female between 12-40 years of age. They were selected through the stratified random sampling method and allocated into 3 groups. Group A consisted of the school children (12-17 years), Group B consisted of the college students (18-25 years) and Group C consisted of adults (26-40 years). The groups were given with two questionnaires namely Eating Attitude Test -26 (EAT-26) and Eating Disorder Examination Questionnaire (EDEQ).

**Results:** The mean scores of EAT-26 and EDE-Q among group B is higher when compared to A and Group C. There is statistically significant difference,  $p < 0.05$  exists among them.

**Conclusion:** The eating disorder is common among the college going students when compared to school going children and adults.

#### INTRODUCTION

Eating disorders (EDS) are considered to be a mental disorder and are characterized by abnormal eating habits. It has a strong negative impact on physical and mental health. According to Diagnostic and statistical manual of mental disorders (DSM), EDS can be classified into Anorexia nervosa, Bulimia nervosa and Binge eating disorders and other specified eating disorders.<sup>[1]</sup>

EDS occurs in all around the world and it depends on the environmental conditions like weather, climatic conditions etc. Worldwide around 70 million individuals are suffering from eating EDS.<sup>[2]</sup> In India EDS are at alarming rate and it has been raised 5 to 10 times than the past decade where almost 26% of female were the sufferers.<sup>[3]</sup> Although the exact cause is not known but may be due to any external pressures, the negative comments and the critics that could emotionally let down the individuals or due to perfectionism.<sup>[4,5]</sup>

Most of the individuals are exposed to frequent comments about their body weight and shape that indirectly contribute many problems. The individual may experience any of the eating disorder, but may also exhibit the characteristics of other disorders. Hence if it is not treated, the complications involves both the physical and mental health that could become serious and cause severe psychological problems like stress, anxiety and depression.<sup>[4,5]</sup> It is necessarily important to analyse the eating attitudes of individuals in areas of work, schools or relationships and there by this study was an attempt to analyse the prevalence of eating disorders in various age groups and to find the age group in which the eating disorder was more prevalent.<sup>[6,7]</sup> Here, we aimed to establish the status of eating disorders among the three different age groups namely, school going children, college going students and adults.

#### METHODS AND MATERIALS

##### Recruitment

The university research and ethics committee (ACS/2017/58) approved the study protocol. Total 150 subjects of healthy male and female in the age group between, 12 and 40 years were recruited for the cross-sectional survey through stratified random

sampling (strata according to three age groups, 12-17 years, 18-15 years, and 26-10 years). The study was performed between May, 2017 and May, 2018 and done in accordance with ethical guidelines for biomedical research on human subjects, Indian Council for Medical Research (ICMR), 2006 and also in accordance with the guidelines of Helsinki declaration, revised 2013.<sup>[8]</sup> Subjects with any recent illness, pregnant women, subjects with psychological problems and other systemic diseases were excluded from the study. The recruited subjects were selected randomly allocated into three groups, each group consisting of 50 subjects. Group A comprising of school going children in the age group of 12-17 years, group B of college going students in the age group between 18 and 25 years and group C of the adults from general population with age ranged, between 26- 40 years. The detailed purpose, procedure and benefits of the study was explained to them after obtaining signed consent form before data collection and assured confidentiality of the collected data. Anthropometrics were measured according to the recommendations of the International Standards for Anthropometric Assessment (ISAK).

#### DATA COLLECTION

Disorders of eating were identified among the groups with the help of validated and standardized questionnaire. Two questionnaires were used in this study, Eating Attitudes Test-26 (EAT-26)<sup>[9]</sup> and Eating disorder examination questionnaire (EDE-Q).<sup>[10]</sup> The EAT-26 is the most widely used screening measure and tool for assessing the eating disorder risk. All self-report measures require open and honest responses in order to provide accurate information. The EDE-Q is also a self-reported version that provides data on behavioural features and subscale scores that indicates the symptoms of eating disorders. Both the questionnaires were performed on the recruited subjects by the trained professionals, who have sufficient training to use both the questionnaires. The questionnaire was circulated among the groups and collected in-person from the subjects to eliminate the non-return of forms and incomplete forms. No incentive was provided for filling the questionnaires. The collected forms were analysed by the person who was not involved in data collection and the identity of the groups were masked in the form. Thus, the assessor bias was eliminated.

DATA ANALYSIS

The collected demographic and outcome measures were assessed for their normality using Kolmogorov-Smirnov test as the total sample size is greater than 50 (n>50). Normality analysis revealed that the data follow normal distribution, all the descriptive were expressed in mean  $\pm$  standard deviation. ANOVA was adopted to find out the differences between Group- A, group-B and group-C. The data was analysed using statistical software, statistical package for social science (SPSS), IBM SPSS version 20.0 (Armonk, NY: IBM Corp.). The p-value  $\leq 0.05$  was considered to be statistically significant.

RESULTS

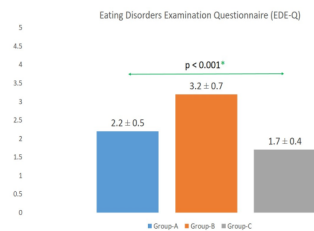
Total n= 150 subjects were included in the study between the age group 12 to 40 years. Among them 75 were male and 75 were female. The demographic characteristic of the participants recruited in the three groups is displayed in Table 1. The mean scores of EAT-26 and EDE-Q among the group A, group B and group C is portrayed in graph1 and graph 2 respectively. There exists significance difference (p < 0.05) between the three groups.

Table 1: Demographic characteristics among different group recruited

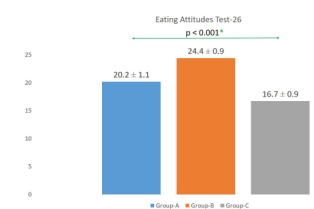
Demographic characteristic	Group A	Group B	Group C	p- value
Age (Years)	12.1 $\pm$ 3.9	22.9 $\pm$ 3.1	34.8 $\pm$ 5.3	0.02
Height (cm)	166.5 $\pm$ 3.7	173.1 $\pm$ 4.1	170.5 $\pm$ 8.1	0.04
Weight (kg)	54.5 $\pm$ 6.1	72.9 $\pm$ 7.2	77.5 $\pm$ 3.2	0.005
BMI (kg/m2)	19.2 $\pm$ 2.8	23.9 $\pm$ 3.6	24.6 $\pm$ 2.5	0.03

**Abbreviations:** cm – centimeter; kg – kilogram; BMI – Body mass index.

Graph 1 EDE-Q Mean Eating disorder examination questionnaire (EDE-Q) score among the school going children, college going children and adults.



Graph 2 EAT-26 Mean Eating attitudes test-26 (EAT-26) score among the school going children, college going children and adults.



DISCUSSION

Eating disorders, characterised by abnormal eating habits possibly occurs in all age groups. The exact cause is unknown, but it could be due to any external pressure among peer groups. Eating disorders in the college students are significantly high when compared to the other age groups as college campuses pave way to many changes in the behavioural pattern of the individuals.[11] Alcoholism and drug addiction are common in the college students between 18-25 years.[12] Even though the awareness of drug and alcohol abuse are increasing among college students, it is less acknowledged and very few attempt are made to control their weight in symptoms associated with bulimia nervosa.. Usually most females diet for reducing their weight.

The other causes could be the challenges faced by the college students which are academic pressure which results in their personal transition. The combination of these responsibilities may result with the feelings of stress, anxiety and depression. The pre-existing attitudes to perfectionism in academics or in behavioural patterns serve as a fodder for the development of eating disorders among the collegiate.[13] Researchers have also concluded that athletes are also at risk of reaching an imbalance between energy input and output that could result in weight but this coupled with other risks leading to an eating disorder.[13]

The present study was an attempt to find the prevalence of eating disorder in various age groups and to identify in which group this order is more prevalent which would help in early screening and prevention of various health issues in their future. Because of the severity of these conditions the early detection would help in addressing the concerns of the individuals who are facing the restoration of their health and well-being.

The present study concludes that the prevalence of eating disorder is more common among the college students when compared to Group A and Group C. Identification of this disorder at an early stage will help in the prevention of various health issues like obesity, diabetes etc., and secondary complications like cardiac diseases, stroke at later stages of life.

CONCLUSION

The eating disorder is common among the college going students when compared to school going children and adults. Conflict of interest: None of the authors have conflicting interest Funding: Nil

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