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# A cross-sectional study to estimate the prevalence of eating disorders and ascertain factors for eating disorder risk among senior college students in a metropolitan city

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## Abstract:

**BACKGROUND:** Eating disorders are more prevalent in Western countries and their prevalence is on the rise in India, mainly due to peer pressure and the influence of media. However, research on eating disorders is limited in India. The aim of this study is to estimate the prevalence of eating disorders among senior college students and to ascertain factors for eating disorder risk.

**MATERIALS AND METHODS:** A cross-sectional study was conducted among 807 students attending 2 of the arts and science colleges in a metropolitan city (Mumbai) over a period of 12 months from June 2019 to June 2020. A predesigned case record form was used to collect information on sociodemographic profiles and other factors related to eating disorder risk. Eating Attitude test (EAT-26) was used as a screening test to find the prevalence of those at risk for eating disorders. Munich-ED quest was used for the diagnosis of the eating disorder.

**RESULTS:** Data were analyzed using SPSS version 16.0. The Chi-square test was used to find the association of various factors with eating disorder risk. Our study found the overall proportion of eating disorder risk to be 42.25%. Among them, 19 (2.35%) individuals had night eating syndrome and 7 (0.86%) had binge eating syndrome as per DSM-5 criteria using Munich ED Quest. On logistic regression, we found fasting once or twice a week (OR: 2.916; 95% CI: 1.524–5.574;  $P = 0.001$ ), increase in duration of physical activities for more than 10 h a week (OR: 3.874; 95% CI: 2.200–6.821;  $P < 0.001$ ), being commented for weight by friends/relatives (OR: 1.695; 95% CI: 1.244–2.309;  $P = 0.001$ ), and thought of being overweight (OR: 1.763; 95% CI: 1.178–2.639;  $P = 0.006$ ) to be significantly associated with risk of eating disorders. The age group of 18–20 years (OR: 0.519; 95% CI: 0.345–0.782;  $P = 0.002$ ) was found to be at lower risk for eating disorders compared to the 22–24 year age group.

**CONCLUSION:** Screening of students with a simple tool like EAT-26 would prove beneficial in the early identification of those at risk of eating disorders.

## Keywords:

Binge eating, eating disorder, peer pressure, risk factors, screening

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## Introduction

Eating disorders are characterized by disturbances in behaviors, thoughts, and attitudes to food, eating, and body weight or shape that impairs health or psychosocial

functioning. According to the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM5), eating disorders are classified as anorexia nervosa, bulimia nervosa, and avoidant/restrictive food intake disorder.<sup>[1]</sup> Eating disorders are more

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prevalent in Western countries such as the U.S., Europe, and Australia.<sup>[2]</sup> Commonly found among children, adolescents, and young adults, eating disorders are the common psychological disorders that remain unnoticed and their diagnosis usually gets delayed.

The lifetime estimated prevalence of anorexia nervosa, bulimia nervosa, binge eating disorder, subthreshold binge eating disorder, and any binge eating were found to be 0.48%, 0.51%, 1.12%, 0.72%, and 2.15%, respectively, and were 3–8 times higher among women for all eating disorders.<sup>[3]</sup> Their prevalence is on the rise in Asian countries<sup>[2]</sup> including India and is seen in a larger proportion of adolescents predominantly due to peer pressure, westernization, and the influence of media. The overall prevalence of eating disorders is found to be 11.5% in a study conducted in Iran.<sup>[4]</sup>

Binge eating disorder is the most common eating disorder found among adolescents and young adults. Binge eating episodes may serve as a maladaptive strategy for coping with negative mood states.<sup>[5]</sup> There is increased concern for body size and shape which may influence acceptance by their peers. The first peak for the onset of eating disorders occurs at 14 years and the second peak at 19–24 years of age. The most common risk factors associated with eating disorders are weight-related teasing of a child at school/colleges, parental obesity, chronic dieting, obsessive-compulsive disorder, childhood obesity, and low self-esteem.<sup>[1]</sup> Women are known to be at increased risk for eating disorders due to their increased drive for thinness and to maintain an ideal body image.

Several studies have shown that eating disorders may lead to emotional distress, depression, anxiety disorder, substance abuse, tendency for suicide, and self-harm.<sup>[5]</sup> Lack of awareness among adolescents about disordered eating habits/behavior and nonperception of eating disorders as an illness results in a delay in seeking medical help and subsequently delayed diagnosis. Screening of adolescents at schools and colleges may, thus, help us to identify the population at risk and treat them so that their behavior can be modified at an early age. Hence, there is a need for early diagnosis of eating disorders and treatment, which is possible if we create awareness among adolescents. Studies on eating disorders are limited in India. Thus, this study aims to estimate the prevalence of various eating disorders among adults aged 18–24 years and identify risk factors associated with increased risk for eating disorders.

## Materials and Methods

### Study design and setting

This cross-sectional study was conducted among adults aged 18–24 years attending two of the arts and

science colleges in a metropolitan city from June 2019 to June 2020.

### Study participants and sampling

Two colleges offering undergraduate and postgraduate commerce, arts, and science courses in a metropolitan city were selected randomly from Eastern and Western Mumbai. All the male and female students of the age group 18–24 years attending these educational institutions were enrolled in this study. Substituting prevalence (P) of eating disorder as 11.5%,  $Q(1 - P)$  as 88.5%, allowable error(e) as 20% of prevalence (2.2),  $N = 20,000$  in the formula  $4PQN/e^2(N - 1) + 4PQ$ , we calculated our sample size to be 807. Systematic random sampling was used to select the students from the college register. The students were sequenced according to their roll numbers, and the first person was chosen randomly from numbers 1 to 25 and then every 25<sup>th</sup> student (sampling interval =  $20,000/807$ ) was selected for the study purpose. If the selected student was not willing to participate or was not available despite three visits being made to the educational institution, the next student was considered for the study.

### Data collection tool and technique

This study was conducted in two stages. The students were informed about the study's purpose at the beginning of the study. Their participation was voluntary and they were assured of their privacy and confidentiality. The questionnaire was administered in English to match with the medium of instruction in both colleges. In the first stage (screening), the participants were explained the difficult terms in the questionnaire and informed consent was obtained. The questionnaire with general details of the participants and EAT-26 questions was distributed to all the students selected for the study. The first stage was conducted in groups of 20 so that the students had adequate space to complete the questionnaire without discussing it with each other and to ensure privacy. Completed questionnaires were collected back personally by the investigator. Height, weight, waist, and hip circumference were measured and recorded for all the participants using a Stadiometer, digital weighing machine, and nonstretchable measuring tape, respectively, as per standard protocol. The measurements were recorded only once at the time of the interview. The instruments used were calibrated periodically.

Those who were found to be at risk for eating disorders were taken up for the second stage of the study. Individual interviews were conducted using the Munich ED quest questionnaire in the second stage of the study. The students at risk were personally contacted by the investigator through telephone calls and the interview was conducted at his/her convenient time. Only one

student was interviewed at a time to maintain privacy. Those who were found to have an eating disorder based on the Munich ED questionnaire were referred to a psychiatrist for further evaluation and management.

#### About EAT-26 scoring

Eating Attitude test (EAT-26) was used to screen for the risk of eating disorders.<sup>[6]</sup> EAT 26 is a self-administered questionnaire consisting of Part A (26 questions) and Part B (Behavioral Questions). Responses are rated on a 6-point scale (Always – 3, Usually – 2, Often – 1, other responses – 0). Only for question number 26, response is interpreted as sometimes – 1, rarely – 2, never – 3, and other responses – 0. Participants are considered to be at risk of eating disorders i. If the total score is more than or equal to 20 or ii. if they have answered yes to any of the Part B (Behavioral) questions or iii. If they are underweight. EAT 26 is copyrighted and permission to use the questionnaire in this study was obtained. For our study purpose, we did not include those with underweight when calculating the overall eating disorder risk as malnutrition/economic disparity is most prevalent in the Indian population.<sup>[7-9]</sup> EAT-26 has an internal consistency ranging from 0.86 to 0.90.<sup>[10]</sup> Test-retest reliability for EAT-26 ranged from 0.84 to 0.89.<sup>[11]</sup>

#### About Munich ED quest

The Munich ED quest is available for free use in research studies and is diagnostic for eating disorders.<sup>[12]</sup> Dr. Manfred Fichter developed this questionnaire. It comprises 65 questions on three subscales, i.e., preoccupation with figure and weight, bingeing and vomiting, and inappropriate compensatory behavior, which is based on DSM-5.

The results were coded on a five-point scale ranging from 0 (symptom/problem not present) to 4 (symptom/problem very severely/often present). It has two ratings – past and present for all the questions. The past rating will usually cover the time from prepuberty up to 3 months before answering the questionnaire. The present status covers the maximal expression of the symptom/problem area in the last 3 months before filling out the questionnaire. For our study purpose, we considered only the present status. We obtained permission from Dr. Manfred Fichter to use this questionnaire. It has a high test-retest reliability ranging from 0.95 to 0.98 and internal consistency ranging from 0.89 to 0.98.<sup>[13]</sup>

#### Data analysis

All responses were tabulated using Microsoft Excel Software and Data analysis was done by using SPSS software version 16.0. The association of various factors with eating disorder risk was ascertained using Chi-square and logistic regression analysis.

#### Ethical consideration

This study was approved by the Institutional Ethical Committee of Seth G. S. Medical College and K. E. M Hospital (EC/OA-54/2019) which is FERCAP approved.

#### Results

The mean age of the study participants was  $20.8 \pm 0.95$ . 42.1% (340) were in the age group 20–22 years, 37.1% (299) in the 18–20 year age group, and 20.8% (168) in the 22–24 year age group. In total, 36.9% (298) of study participants were males and 63.1% (509) were females. Among them, 13.5% (109) of study participants were pursuing arts and science courses, 70.4% (568) were pursuing accounts and commerce-related courses, and 16.1% (130) were pursuing technology-related courses. The majority of participants (83.3%,  $n = 672$ ) belonged to Hindu by religion, 1.9% (16) were Christians, 8.7% (70) were Muslims, and 6.1% (49) belonged to other religions. The majority of the participants (46.1%) belonged to the lower middle class as per the modified Kuppuswamy scale, 1.4% (11) were upper class, 31.9% (258) were upper middle class, and 20.6% (166) were upper lower socioeconomic class.

Three hundred forty-one (42.25%) of individuals were found to be at risk for eating disorders in our study. Part A (EAT-26 score) of the questionnaire shows 206 (25.5%) of our participants at risk for an eating disorder. When we considered Part B (Behavioral questions) along with EAT-26 score, the overall number of individuals at risk for eating disorders increased to 341 (42.25%). Of which, 142 (47.7%) males and 199 (39.1%) females were at risk. Additionally, we found 19 (2.35%) individuals had night eating syndrome, and 7 (0.86%) had binge eating syndrome as per DSM-5 criteria using Munich ED Quest and were referred to a psychiatrist for counselling and further management.

Table 1 shows the association of various factors with eating disorder risk by univariate analysis. Higher age group (22–24 years), male gender, mother's education status, being involved in physical activities such as exercise/dance for long hours ( $>10$  h a week), fasting (once or twice a week), BMI (underweight and overweight), being commented for weight by friends/relatives, and thought of being overweight were found to be associated with eating disorder risk.

Binary logistic regression was done after controlling for other significant variables [Table 2]. Gender, BMI, and mother's education status were found not to be significant. The age group of 18–20 years (OR: 0.519; 95%CI: 0.345–0.782;  $P = 0.002$ ) was found to be at lower risk for eating disorders compared to the

**Table 1: Univariate analysis showing the association of various factors for eating disorder (ED) risk among study participants**

Variables	Normal n=466 (57.75%)	ED Risk n=341 (42.25%)	Total n=807 (%)	Chi-square/P
Age group				
18–20 years	192 (64.2)	107 (35.8)	299 (37.1)	9.296/0.010*
20–22 years	189 (55.6)	151 (44.4)	340 (42.1)	
22–24 years	85 (50.6)	83 (49.4)	168 (20.8)	
Gender				
Male	156 (52.3)	142 (47.7)	297 (36.8)	5.637/0.018*
Female	310 (60.9)	199 (39.1)	509 (63.2)	
Religion				
Hindu	390 (58.0)	282 (42.0)	672 (83.3)	1.334/0.721
Christian	7 (43.7)	9 (56.3)	16 (1.9)	
Muslim	41 (58.6)	29 (41.4)	70 (8.7)	
Others	28 (57.1)	21 (42.9)	49 (6.1)	
Father's education status				
Illiterate	17 (54.8)	14 (45.2)	31 (3.8)	4.287/0.509
Primary	37 (63.8)	21 (36.2)	58 (7.2)	
Middle	29 (65.9)	15 (34.1)	44 (5.5)	
Secondary	179 (56.8)	136 (43.2)	315 (39.0)	
Diploma	103 (60.6)	67 (39.4)	170 (21.1)	
Grad/Professional	101 (53.4)	88 (46.6)	189 (23.4)	
Mother's Education Status				
Illiterate	65 (67.0)	32 (33.0)	97 (12.0)	11.128/0.049*
Primary	65 (63.1)	38 (36.9)	103 (12.8)	
Middle	20 (43.5)	26 (56.5)	46 (5.7)	
Secondary	157 (58.8)	110 (41.2)	267 (33.2)	
Diploma	69 (57.5)	51 (42.5)	120 (14.9)	
Grad/Professional	89 (51.7)	83 (48.3)	172 (21.4)	
Socioeconomic Status				
Upper	5 (45.5)	6 (54.5)	11 (1.4)	1.762/0.623
Upper middle	147 (57.0)	111 (43.0)	258 (32.0)	
Lower middle	212 (57.0)	160 (43.0)	372 (46.1)	
Upper lower	102 (61.4)	64 (38.6)	166 (20.5)	
Skips meals				
Never	247 (57.7)	181 (42.3)	428 (53.0)	3.863/0.277
Once a week	56 (50.9)	54 (49.1)	110 (13.6)	
2 to 3 times a week	100 (58.5)	71 (41.5)	171 (21.2)	
>3 times a week	63 (64.3)	35 (35.7)	98 (12.2)	
Fasting				
Never	285 (61.0)	182 (39.0)	467 (57.9)	11.762/0.008*
Occasionally	147 (57.2)	110 (42.8)	257 (31.8)	
Once or twice a month	15 (42.9)	20 (57.1)	35 (4.4)	
Once or twice a week	19 (39.6)	29 (60.4)	48 (5.9)	
No. of meals in a day				
Once	33 (50.0)	33 (50.0)	66 (8.2)	4.824/0.090
2–3 times	326 (60.4)	214 (39.6)	540 (66.9)	
>4 times	107 (53.2)	94 (46.8)	201 (24.9)	
Physical Activities – Dance/Exercise				
Nil	190 (66.4)	96 (33.6)	286 (35.4)	27.129/<0.001*
<5 h a week	200 (56.8)	152 (43.2)	352 (43.6)	
5–10 h a week	43 (55.8)	34 (44.2)	77 (9.6)	
>10 h a week	33 (35.9)	59 (64.1)	92 (11.4)	
Body Mass Index				
Underweight	115 (58.4)	82 (41.6)	197 (24.4)	7.819/0.050*
Normal	278 (60.7)	180 (39.3)	458 (56.7)	

*Contd...*



**Table 1: Contd...**

Variables	Normal <i>n</i> =466 (57.75%)	ED Risk <i>n</i> =341 (42.25%)	Total <i>n</i> =807 (%)	Chi-square/ <i>P</i>
Overweight	48 (46.6)	55 (53.4)	103 (12.8)	
Obese	25 (51.0)	24 (49.0)	49 (6.1)	
Thought of being overweight				
Yes	87 (46.8)	99 (53.2)	186 (23.0)	11.922/0.001*
No	379 (61.0)	242 (39.0)	621 (77.0)	
Commented for weight by friends/relatives				
Yes	195 (50.5)	191 (49.5)	386 (47.8)	15.836/<0.001*
No	271 (64.4)	150 (35.6)	421 (52.2)	
Habits/Lifestyle				
Smoking				
Yes	6 (40.0)	9 (60.0)	15 (1.9)	1.972/0.160
No	460 (58.1)	332 (41.9)	792 (98.1)	
Alcohol				
Yes	18 (51.4)	17 (48.6)	35 (4.3)	0.598/0.439
No	448 (58.0)	324 (42.0)	772 (95.7)	
Parental factors				
Staying with				
Parents	454 (58.0)	329 (42.0)	783 (97.0)	0.608/0.436
Relatives/Hostel	12 (50.0)	12 (50.0)	24 (3.0)	
Whether both parents living together				
Yes	441 (57.7)	323 (42.3)	764 (94.7)	0.003/0.957
No	25 (58.1)	18 (41.9)	43 (5.3)	
Spends quality time with parents				
Yes	429 (58.0)	311 (42.0)	740 (91.7)	0.190/0.663
No	37 (55.2)	30 (44.8)	67 (8.3)	
Parents drink alcohol				
Yes	98 (53.0)	87 (47.0)	185 (22.9)	2.240/0.134
No	368 (59.2)	254 (40.8)	622 (77.1)	
Any serious Issue (Illness/Death/Financial loss) in family in the last 3 months				
Yes	89 (52.0)	82 (48.0)	171 (21.2)	2.887/0.089
No	377 (59.3)	259 (40.7)	636 (78.8)	

\**P*<0.05

22–24 years age group. Fasting once or twice a week (OR: 2.916;95%CI: 1.524–5.574; *P* = 0.001) and fasting once or twice a month (OR: 2.113;95%CI: 1.015–4.395; *P* = 0.045) had a higher risk for eating disorder. Those who had thought of being overweight (OR: 1.763;95% CI: 1.178–2.639; *P* = 0.006) and those who were being commented for weight by friends/relatives (OR: 1.695; 95% CI: 1.244–2.309; *P* = 0.001) had a higher risk for eating disorder. Those who were involved in physical activities such as exercise > 10 h a week (OR: 3.874; 95% CI: 2.200–6.821; *P* < 0.001) and those who did exercise for 5–10 h a week (OR: 1.575;95% C. I: 1.111–2.234; *P* = 0.001) had a higher risk for developing eating disorder.

## Discussion

The prevalence of eating disorder risk was found to be 341 (42.25%) in our study. The prevalence of eating disorder risk as per a study conducted in Gujarat was 20.5% with EAT-26 questionnaire.<sup>[14]</sup> The study in Gujarat was done in a wider age group (17–35 years), whereas our study included participants between 18 and 24 years.

Few of the other studies also reported lesser prevalence than our study, which could be because they considered only Part A of the questionnaire.<sup>[15,16]</sup>

The risk of eating disorder risk is found to increase with the increase in age among our study subjects. It was more common in the age group of 22–24 years compared to 18–20 years.<sup>[17]</sup> This could be attributed to peer pressure or desire to be thin looking at their friends or social media usage, increased body image concerns, fear of rejection, and poor self-esteem. It also shows that the thought of ideal body image could be instilled when they join college and students may resort to dieting and other weight control mechanisms which puts them at increased risk for eating disorders. This could be addressed by educating college students about disordered eating behaviors and seeking help, when required.

Our study found males (47.7%) to be at higher risk for eating disorder in contrast with other studies which show females to be at higher risk.<sup>[16,18]</sup> Increased prevalence

**Table 2: Binary logistic regression showing the effects of various determinants on eating disorder risk**

Variables	Categories	Adjusted odd's ratio aOR (95% CI)	P
Age group	18–20 years	0.519 (0.345,0.782)	0.002
	20–22 years	0.791 (0.534,1.173)	0.244
	22–24 years	Reference	
Gender	Male	1.218 (0.858,1.729)	0.269
	Female	Reference	
Mother's education	Illiterate	0.622 (0.354,1.093)	0.099
	Primary	0.787 (0.456,1.357)	0.389
	Middle	1.826 (0.899,3.710)	0.096
	Secondary	0.833 (0.578,1.349)	0.883
	Diploma	0.939 (0.566,1.558)	0.939
	Grad/Professional	Reference	
Fasting	Once or twice a week	2.916 (1.525,5.574)	0.001
	Once or twice a month	2.113 (1.015,4.395)	0.045
	Occasionally	1.361 (0.971,1.908)	0.074
	Never	Reference	
Commented for weight by friends/relatives	Yes	1.695 (1.244,2.309)	
	No	Reference	0.001
Thought of being overweight	Yes	1.763 (1.178,2.639)	
	No	Reference	0.006
Physical Activities – Dance/Exercise	>10 h a week	3.874 (2.200, 6.821)	<0.001
	5–10 h a week	1.575 (1.111,2.234)	0.001
	<5 h a week	1.551 (0.871, 2.762)	0.136
	Never	Reference	
Body Mass Index	Underweight	1.472 (0.713,3.041)	0.296
	Normal	1.155 (0.594,2.244)	0.671
	Overweight	1.571 (0.755,3.269)	0.227
	Obese	Reference	

of eating disorder risk in males seen in our study could be due to unequal representation of males and females. Literature also suggests that eating disorders are on the rise in males and are often underreported.<sup>[19,20]</sup> Screening and awareness programs should be targeted at both males and females.

Parent's education status has been found to have an influence on eating disorders in children. A study in Australia conducted by Allen *et al.*<sup>[21]</sup> found low maternal education to be associated with eating disorders, whereas a study in Sweden by Goodman *et al.*<sup>[22]</sup> found higher education levels among both father and mother to be an independent risk factor for eating disorders. Our study found only maternal education to be associated with the risk of eating disorders.

Eating disorders were believed to be a disease of the rich. A systematic review by Huryk *et al.*<sup>[23]</sup> points out that there is no evidence to prove it and suggests it is widely present across all socioeconomic groups. Also, a study in Australia finds symptoms of eating disorders to be equally distributed among socioeconomic groups.<sup>[24]</sup> Our study also found the risk to be spread across all the socioeconomic groups and did not find any significant association between socioeconomic class and eating disorder risk.

A systematic review of studies conducted in the USA and Canada by Akrawi *et al.*<sup>[25]</sup> found that strong religious beliefs coupled with spirituality are associated with lower levels of disordered eating and body image concerns. India is culturally varied and certain population groups in India observe fasting for different religious reasons. Also, fasting during Ramadan has been reported to be a trigger factor for eating disorders.<sup>[26]</sup> Western literature has also reported an association of fasting with future risk of eating disorders.<sup>[27]</sup> A study in the USA by Ganson *et al.*<sup>[28]</sup> found fasting in the past 4 weeks to be associated with a higher risk of mental health issues including eating disorders. Though our study did not explore religious beliefs/spirituality, we found fasting to be associated with an increased risk of eating disorders. The risk increased with an increase in the frequency of fasting. We did not find any significant relationship between religion and the risk of eating disorders.

Our study also explored the association between the frequency of skipping meals and the number of meals consumed in a day with eating disorder risk. A study in Turkey by Kabakuş Aykut *et al.*<sup>[29]</sup> found a significant association between skipping meals and the risk of eating disorders. They also found the reasons for skipping meals and found those skipping meals with an intention

to not gain weight to be significant factors among other factors such as lack of time and getting up late. Our study did not find any association between skipping meals/number of meals consumed in a day and risk of eating disorder and we also did not find the reasons for skipping meals.

Doing intense physical activities (dance/gym/exercise) more than 10 h a week is found to be at increased risk for eating disorders. The risk increased with an increase in the duration of exercise. This is similar to a study done in a medical college in South India where daily rigorous exercise was found to be a significant factor for increased risk of eating disorders.<sup>[16]</sup>

A study done in Nigeria among undergraduate students by Fadipe *et al.*<sup>[17]</sup> found BMI to be a significant factor associated with disordered eating. A study from Gujarat, India also found underweight and obesity to have increased eating disorder risk.<sup>[14]</sup> Our study found overweight (53.4%), obese (49.0%), and underweight (41.6%) individuals at higher risk of eating disorders. The lifetime risk of anorexia nervosa and binge eating disorder is found to be significantly associated with current underweight and obesity, respectively.<sup>[30]</sup>

Bullying and peer pressure were found to be associated with increased risk for eating disorders in both Western and Indian studies.<sup>[16,31]</sup> Our study also found those who perceived themselves as overweight and those who were commented for their weight by friends/parents/relatives to have a higher risk of eating disorders.<sup>[1,32]</sup>

Studies reveal that weight control is the motivation for smoking in people with disorder eating behavior and increased prevalence of smoking is seen among those with eating disorders.<sup>[33,34]</sup> Also, people with eating disorders are found to suffer from other mental health issues such as depression, and can consume alcohol to overcome them.<sup>[35-37]</sup> Our study did not find any such association between smoking/alcohol intake and eating disorder risk.

Literature suggests that isolation, parental conflicts, broken families, and parental drinking habits put the children at increased risk for eating disorders.<sup>[1]</sup> Our study did not find any significant association between parental factors such as alcohol consumption of parents, separated relationships, or spending adequate quality time with children and eating disorder risk. We also explored the possibility of any serious issue in the family such as death, financial loss, or illness in family members in the last 3 months, which was found not to be associated with risk for eating disorder.

This study suggests that eating disorders are on the rise in India and the risk factors for eating disorders

are prevalent among college students. To the best of our knowledge, this study is the first of its kind in Maharashtra which explores the various eating disorders among college students and the factors which put individuals at risk for eating disorders.

## Limitations and Recommendation

The results of this study cannot be generalized to the entire population as it is based on college students and only two colleges were covered. Follow-up of the participants could not be done after referral, due to the covid pandemic. Since it is a cross-sectional study, a causal relationship could not be established. It is recommended that further research be carried out across different age groups and various states in India to explore the risk factors and estimate the disease burden in the country.

## Conclusion

This study highlights the prevalence of eating disorders among college students in India and factors such as fasting, increase in physical activities, increased BMI, and being commented for weight by friends/relatives to be associated with increased risk of eating disorders among them. Screening of students with a simple tool like EAT-26 would prove beneficial in the early identification of those at risk of eating disorders and help target interventions for reducing the risk among them. Educating and creating awareness about eating disorders among college students would be helpful.

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## Conflicts of interest

There are no conflicts of interest.

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