

EATING DISORDERS – THE DESPERATE DEVOUR (OR) DEPRIVATION

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ABSTRACT

Background: Psychological illness characterised by aberrant eating habits either by paltry or exorbitant intake to the detriment of an individual's physical and mental health is called as "EATING DISORDER". Though some evince shows that eating disorders have genetic vulnerability, they are predominantly influenced by psychological and socio – cultural impacts. We anticipate that integration of several factors may easily lead to Eating disorders and inflate its prevalence equivalent to any other illness.

Materials and Methods: This study was performed as a cross sectional study during December 2014 and February 2015 with the objectives of assessing the prevalence of the Eating Disorder among adolescent population. Schools and colleges were randomly selected in Chennai and the institutional authorities were approached for getting the assent. On a specific day, data collection was done using the preformed predetermined questionnaire by direct interview method. The data was entered in MS excel sheet and analysis was done using SPSS software version 3.5, 2008.

Result: Totally 1026 partakers were interrogated of which 80.1% were females. Mean age of the study population was 16.75 years. Among the total study participants 7.6% (78) were vegetarians. 88.6% belonged to nuclear family and 44.1% of them belonged to class I socio-economic status. About 37.1% (381) of people were suffering from eating disorder. Eating Disorder was significantly associated with the age group of 16 – 19 years ($p=0.042$), female gender ($p=0.00$), professionals ($p=0.000$), socio-economic class I ($p=0.000$), vegetarian ($p=0.00$), Family history of eating disorder ($p=0.005$).

Conclusion: The prevalence of Eating disorder among Adolescent population in our study was moderately high and hence interventions should be made to create cognizance among the general population about the risk factors and consequences in consuming large amount of fast foods.

Keywords: Eating Disorder, Deprivation, Abnormal eating patterns

Research Question: Are you agonized with eating disorder?

INTRODUCTION

Psychological illness characterised by aberrant eating habit either by paltry or exorbitant intake to the detriment of an individual's physical and mental health is called as "EATING DISORDER". An individual with a turmoil may have begun recently consuming little or bigger measures of sustenance, however eventually, the urge to consume less or more spiraled crazy. Serious pain or worry about body weight or shape describes eating disorder. Dietary issues oftentimes show up amid the teenager years or after adolescence. Anorexia nervosa, Bulimia nervosa and Binge eating are the most common eating disorders.

Anorexia Nervosa

Numerous individuals with anorexia nervosa see themselves as overweight, actually when they are obviously underweight. Consuming food and weight control get to be their obsession. Individuals with anorexia nervosa ordinarily measure themselves more than once, partition nourishment deliberately, and consume little amounts of just certain nourishments. Individuals with anorexia nervosa, they regularly dread putting on weight, need frantically to get more fit, and are strongly miserable with their body size and shape. Individuals with anorexia nervosa are 18

times more probable to die early compared with people of similar age group in the general population⁽¹⁾ and hence these conditions are life threatening when undiagnosed.

Bulimia Nervosa

Individuals with bulimia nervosa might likewise participate in consuming food gluttonously took after by compelling eating less, exorbitant activity, impelled toward oneself regurgitating, and/or abuse of purgatives, diuretics, then again douches. Bulimic conduct is carried out subtly on the grounds that it is regularly joined by sentiments of disturb or disgrace. The consuming food excessively and purging cycle happens anyplace from a few times each week to frequently.

Binge Eating

An individual with Binge Eating Disorder won't utilize compensatory practices, for example, incited toward oneself regurgitating or over-practicing after voracious eating within short intervals. Individuals with binge-eating disorder who are obese are at higher danger for developing cardiovascular ailment and hypertension⁽²⁾.

Aims and Objectives:

1. To assess the prevalence of eating disorders among the teen age population in Chennai
2. To assess the different socio demographic variables of eating disorders
3. To find out the risk factors associated with the eating disorders.

MATERIALS AND METHODS

This study was performed as a cross sectional study among adolescent population during December 10th -2014 and February 21st – 2015. The people who were between 10 – 19 years of age group were selected as our study participants. Schools and Colleges in Chennai around Poonamallee area were selected by simple random sampling method. The investigator of the study approached the institutional authorities personally and they were elucidated about the objectives of our study. Out of 15 schools and 7 colleges, 5 schools and 3 colleges sanctioned us with assent to conduct this study in their institutions after perusal of the questionnaire. The investigator visited them on a specified day which was comfortable for both the management and the students. After a brief introduction about the study to the students, the participants of 20 each were made to sit in a classroom. We affirmed that strict confidentiality will be maintained throughout our study and we also promised them that their identity will not be disclosed to any of the institutional personnel or to their parents at any point of circumstance. After getting the informed consent, the questionnaire was dispensed to all the partakers in the class room and they were asked to fill up the questionnaire without any interference. The queries related to the questionnaire were clarified instantly by the scrutineer. Those who were not interested to partake were excluded from the study. During the administration of the questionnaire even the teachers were not allowed in the classroom to ensure the confidentiality of the partakers. Wholly the Institutions, personnel and partakers amalgamated for the data collection throughout the period. The data was entered in MS Excel sheet and analyzed with Epi-info software Version 3.5.1(2008) and Chi-square test was used as the test of significance.

Inclusion Criteria

1. Adolescents aged between 10 – 19 years

Exclusion Criteria

Those who were not interested to partake were excluded from the study.

RESULTS**Socio - Demographic Profile**

Around 1026 adolescents were studied using the scoff questionnaire of which 80% were females, 97% were resident of urban area and 79% were from

16 to 19 years age group. The mean age of the study population was 16.75 years and majority of the study participants 63.5% (652) were higher secondary students and 44% (452) of the study participants belonged to class I socio- economic status whereas 88.6% (909) were from nuclear family. (Table -1)

Eating Patterns

Approximately 14% of the study population eat food more than 3 times a day and 2.6% eat more than an hour per session, 55% of them like food always, 21% eat food even if they do not like that food. Around 28% of them follow strict dietary restrictions by themselves, 11% of them were under professional guidance for dieting, 61% feel that television plays major role in dietary habits, only 9% of them involve them in regular physical activity. Surprisingly 20% of adolescents feel that they are eating too much than others and 22% of them starve a day because they ate too much the last night. (Table – 2)

Psychological effects of eating habits

A considerable amount of adolescents that is, 44% had fear on becoming fat because of their eating habits, 28% of them underwent feeling of guilty whenever eat more than one of the food that they try to cut from their diet, 29% believe that not eating a day can make them to lose weight, 7.5% skip social or professional function because they would over eat, 41% undergo fasting habits because of religious custom. Around 17% of them go for defecation immediately after eating, 19% ate some pills for decreasing appetite, 37% of them eat secretly, 30% of them eat frequently with small quantity of food and 13.5% had overeaten and vomited voluntarily. (Table – 3)

Scoff Questionnaire

Eating disorders are one of the most threatening disorders found commonly in the adolescent girls. The pubescent age deals with enormous confusions both physically and emotionally. There are so many factors responsible for one to turn out with eating disorder. It is not that easy assignment to diagnose this condition. John F Morgan et al designed a “**SCOFF QUESTIONNAIRE**”⁽³⁾ in 1999 that comprises of 5 questions which are termed as “**SCOFF QUESTIONS**”

1. Do you make yourself Sick because you feel uncomfortably full?
2. Do you worry you have lost Control over how much you eat?
3. Have you recently lost weight upto 6.35kgs in a 3 month period?
4. Do you believe yourself to be Fat when others say you are too thin?

5. Would you say that Food dominates your life?

Outcome of Scoff Questionnaire

If the answer is “YES” then 1 point is given. Hence, the maximum score will be 5 points. A score of 2 or more will be indicating a likely case of Eating Disorder.

S. No	Scoff Questions	Yes	No
1.	Do you make yourself Sick because you feel uncomfortably full?	23.1% (237)	76.9% (789)
2.	Do you worry you have lost Control over how much you eat?	22.2% (228)	77.8% (798)
3.	Have you recently lost weight upto 6.35kgs in a 3 month period?	18.5% (190)	81.5% (836)
4.	Do you believe yourself to be Fat when others say you are too thin?	46.0% (472)	54.0% (554)
5.	Would you say that Food dominates your life?	20.8% (213)	79.2% (813)

In our Study, the prevalence of eating disorder among the adolescent population was 37% which seems to be moderately high. (Figure – 1)

Tables 1: Eating disorders, Socio demographic profile of the study participants

Variable	Frequency (n=1026)	Percentage
Age Group		
11. to 15. yrs	215	21.0%
16. to 19 yrs	811	79.0%
Gender		
Female	822	80.1%
Male	204	19.9%
Education Class		
Diploma	14	1.4%
High school	48	4.7%
Higher secondary	652	63.5%
Professional and degree	312	30.4%
Type of Family		
Joint family	117	11.4%
Nuclear family	909	88.6%
Socio Economic Status		
Class I	452	44.1%
Class II	159	15.5%
Class III	68	6.6%
Class IV	223	21.7%
Class V	124	12.1%
BMI Class		
Normal	442	43.1%
Obesity I	20	1.9%
Obesity II	3	0.3%
Obesity III	2	0.2%
Overweight	110	10.7%
Underweight	449	43.8%
Vegetarian/ Non Vegetarian		
Non – Vegetarian	948	92.4%
Vegetarian	78	7.6%
Rural / Urban		
Rural	31	3.0%
Urban	995	97.0%
Family History of Eating Disorder		
Yes	23	2.2%
No	1003	97.8%

Table 2: Eating Habits and Behaviors

How often do you eat in a day		
3 times a day	736	71.7%
4 times a day	130	12.7%
Less than 2 time a day	148	14.4%
Less than 3 times a day	2	0.2%
more than 5 times a day	10	1.0%
How much time will you spend during eating		
Less than 15min	358	34.9%
Less than 20min	440	42.9%
Less than 30 min	10	1.0%
More than 30 min	191	18.6%
More than 1hr	27	2.6%
Do you like food and eat often		
Yes	568	55.4%
No	458	44.6%
If you don't like food will you eat		
Yes	211	20.6%
No	815	79.4%
Will you give preference to food taste?		
Yes	856	83.4%
No	170	16.6%
Will you give preference to hunger more than taste of food		
Yes	665	64.8%
No	361	35.2%
Do you make restrictions in your regular diet		
Yes	285	27.8%
No	741	72.2%
How do you feel yourself to be		
Average	672	65.5%
Obesity	42	4.1%
Over weight	137	13.4%
Under weight	173	16.9%
Very under weight	2	0.2%
Have you ever consulted someone in a professional capacity for advice on dieting /eating		
Yes	114	11.1%
No	912	88.9%
Does television plays a major role in your food habit?		
Yes	621	60.5%
No	405	39.5%
Do you ever exercise a day for 60min because you eaten too much last time		
Yes	91	8.9%
No	935	91.1%
Do you ever feel that you eat too much than others		
Yes	203	19.8%
No	823	80.2%
Do you ever starve a day because you eaten too much last night		
Yes	229	22.3%
No	797	77.7%

Table 3: Psychological effects and feelings due to eating habits

Do you have intense fear on becoming fat		
Yes	447	43.6%
No	579	56.4%
Do you feel guilty whenever you eat more than one of the food that you try to cut from your diet		
Yes	290	28.3%
No	736	71.7%
Do you believe that not eating a day or eating liquid diet can make you lose weight		
Yes	302	29.4%
No	724	70.6%

Did you ever skip social or professional function because you will over eat		
Yes	77	7.5%
No	949	92.5%
Do you reduce the amount of food intake when eating out with friends		
Yes	180	17.5%
No	846	82.5%
Did you ever fast eating because of your religious custom pattern		
Yes	422	41.1%
No	604	58.9%
Did you ever alternate the food habit because of your religious custom pattern		
Yes	430	41.9%
No	596	58.1%
Do you ever go to bathroom after eating		
Yes	178	17.3%
No	848	82.7%
Do you eat pills or take self-medication or beverages to decrease appetite		
Yes	195	19.0%
No	831	81.0%
Do you ever eat in secret		
Yes	381	37.1%
No	645	62.9%
Do you eat frequently with small quantity of food intake		
Yes	310	30.2%
No	716	69.8%
Do you ever over eaten and vomited voluntarily		
Yes	138	13.5%
No	888	86.5%

Table 4: Scoff Questions

1)Do You Make Yourself Sick Because You Eaten Too Much of Food		
No	789	76.9%
Yes	237	23.1%
2)Do You Worry You Have Lost Control Over How Much You Eat		
No	798	77.8%
Yes	228	22.2%
3)Have You Recently Lost Weight In Recent 3 Month Up To 6.35kg		
No	836	81.5%
Yes	190	18.5%
4) Do You Believe Yourself Fat When Others Say You Are Thin		
No	554	54.0%
Yes	472	46.0%
5)Would You Say Food Dominates Your Life		
No	813	79.2%
Yes	213	20.8%

Tables 5: Variables Versus Eating Disorders

Variable	Eating Disorder Present	Eating Disorder Absent	Chi Square Value	P Value
Age Group				
11. to 15. yrs	67	148	4.15	0.042
16. to 20 yrs	314	497		
Gender				
Female	276	546	22.42	0.001
Male	105	99		
Education Class				
Diploma	3	11	99.36	0.001
High school	25	23		
Higher secondary	171	481		
Professional and degree	182	130		
Type of Family				
Joint family	41	76	0.25	0.62
Nuclear family	340	569		
Socio Economic Status				
CLASS I	198	254		

CLASS II	61	98		
CLASS III	30	38		
CLASS IV	62	161		
CLASS V	30	94	27.35	0.001
BMI Class				
Normal	163	279		
Obesity I	1	2		
Obesity II	9	11		
Obesity III	2	0		
Overweight	47	63		
Underweight	159	290	5.99	0.31
Vegetarian/ Non Vegetarian				
Vegetarian	324	624		
Non vegetarian	57	21	46.71	0.001
Rural / Urban				
Rural	16	15		
Urban	365	630	2.87	0.09
Family History of Eating Disorder				
Yes	366	637		
No	15	8	7.95	0.005
Do you like eating food often				
Yes	253	315		
No	128	330	29.91	0.001
If you don't like food will you eat				
Yes	97	114		
No	284	531	8.87	0.003
How do you feel yourself to be				
Average	254	418		
Obesity	18	24		
Over weight	63	47		
Under weight	45	128		
Very under weight	1	1	14.62	0.001
Do you have regular periods				
Yes	218	456		
No	58	90		
Not applicable	105	99	24.85	0.001
Have you ever consulted someone in a professional capacity for advice on dieting /eating				
Yes	61	53		
No	320	592	14.73	0.001
Do you ever exercise a day for 60min because you eaten too much last time				
Yes	60	31		
No	321	614	35.48	0.001
Do you ever feel that you eat too much than others				
Yes	116	87		
No	265	558	43.39	0.001
Do you ever starve a day because you eaten too much last time				
Yes	120	109		
No	261	536	29.43	0.001
Do you have intense fear on becoming fat				
Yes	212	235		
No	169	410	35.95	0.001
Do you feel guilty whenever you eat more than one of the food that you try to cut from your diet				
Yes	154	145		
No	236	500	28.66	0.001
Do you believe that not eating a day or eating liquid diet can make you lose weight				

Yes	177	125		
No	204	520	84.88	0.001
Did you ever skip social or professional function because you will over eat				
Yes	45	32		
No	336	613	16.19	0.0001
Do you reduce the amount of food intake when eating out with friends				
Yes	90	90		
No	291	555	15.48	0.0001
Do you ever go to bathroom after eating				
Yes	124	54		
No	257	591	97.61	0.00001
Do you eat pills or take self medication or beverages to decrease appetite				
Yes	97	98		
No	284	547	16.39	0.0001
Do you ever eat in secret				
Yes	190	191		
No	191	454	42.09	0.001
Do you eat frequently with small quantity of food intake				
Yes	189	121		
No	192	524	108.09	0.00001
Do you ever over eaten and vomited voluntarily				
Yes	98	40		
No	283	605	78.39	0.0001

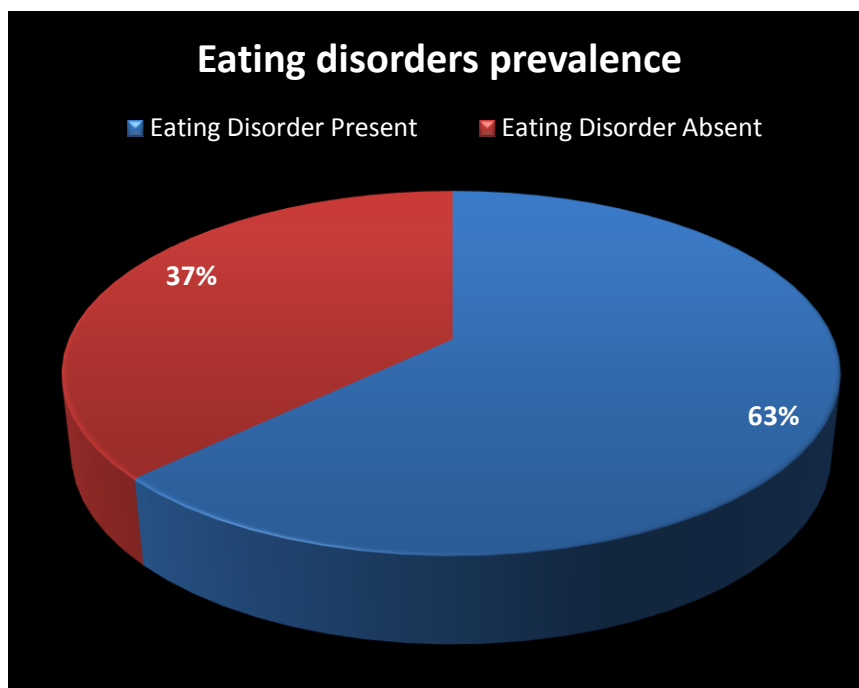


Figure 1: Showing the Eating Disorders Prevalence

ANALYSIS

Chi square test was done to find out the statistical association among variables and eating disorders.

There are some significant factors associated with eating disorder, the factors are:

- Female gender (p=0.000)

- Professionals (p=0.000)
- Socio-economic status (p=0.000)
- Non – vegetarian (p=0.000)
- Frequency of eating/day (p=0.004) – (Table – 5)

DISCUSSION

Eating disorders are the most common psychiatric disorder among young adolescent population and it frequently appears during teenage or young adulthood but may also develop during childhood or later in life^{4, 5}. Early diagnosis and treatment improves the prognosis and often the diagnosis with physical symptoms becomes very difficult and ability to diagnose in primary care settings becomes more tough.⁶ In this perspective, the eating disorder study was conducted among adolescents in Chennai population revealed the prevalence of eating disorder was 37% which was moderately higher when compared with the Israel study done by Maor NR et al showed 20.8% and was 14.5% among Philipines high school students done by Lorenzo CR et al and was more among females. Similarly our study also showed that females are more associated with eating disorders than males which statistically significant.^{7, 8} The studies conducted in India at various times using different screening questionnaires showed varied prevalence in different times. The prevalence of eating disorders among adolescents conducted recently showed 26.67% Amit A Upadhyah et al⁹ among females with significant associations seen dieting behaviour, external pressures, mood susceptibility and perfectionism. Similarly Vellore study¹⁰ in India and Tamil Nadu showed that the psychogenic vomiting and anorexia nervosa was 85.4% and 14.6% respectively among adolescent population and also associated with comorbidities like depression, dissociative disorder and intellectual disability. A Finnish¹¹ school study among adolescent students showed that the scoff questionnaire identified the 81% self-reported eating disorders symptoms in which there was no other screening tests were done to assess the eating disorders. Compared with this our study showed little less self-reported symptoms on eating disorders. Surprisingly inspite of extensive literature review there was no such large scale studies done among adolescents to assess the eating disorders symptoms using scoff questionnaire in spite of its simplicity and less time consumption when compared to other questionnaires. This attempt was made in this research article and this study also explored psychological aspects like, intense fear of becoming fat, feeling guilty after overeating, skipping social function due to over eating, eating secretly and eating vomiting voluntarily. Catherine Chamay-Weber, M.D et al¹² reviewed the eating disorders among adolescents and showed that the affected adolescents often suffer from physical and psychological problems owing to co-morbidity or as a consequence of their eating patterns: chronic constipation, dyspeptic symptoms, nausea, abdominal pain, fatigue, headaches, hypotension, menstrual dysfunction as well as dysthymia, depressive and anxiety disorders, or substance misuse and abuse. Similarly Talia I.

Zaider¹³ had shown that the eating disorders were strongly associated with dysthymia and personality disorders. Catherine M. Shisslak et al¹⁴ demonstrated the usefulness of the intervention program at the high school will prevent the eating disorders emergence and its effects. Such programs should be initiated in developing countries like India utilizing the services of teachers and health care professionals to reduce the prevalence of eating disorders among adolescents which will enhance the good eating habits among the school going children. As it was thought the prevalence of eating disorders are more in western countries than in our country this scenario is gradually changing and the prevalence seems to be similar to western countries and the psychological comorbidities. So it becomes mandatory that the primary health care physicians should be sensitized to use the rapid screening tools in predicting the eating disorders early to initiate the treatment as soon as possible.

CONCLUSION

Our Study was conducted with an intention to uncover certainty of the exigency of intervention to deflate the prevalence of this disorder among the adolescent population. The study revealed that, about 37.1% (380) of the partakers were agonized with symptoms of eating disorders which area threatening indication for taking necessary actions to create cognizance among the general population, school children and their parents about the risk factors and harmful effects.

REFERENCES

1. Steinhilber HC. Outcomes of eating disorders. *Child and Adolescent Psychiatric Clinics of North America*, 2008; 18:225–242.
2. National Institutes of Health National Heart Lung and Blood Institute. Why obesity is a health problem. <http://www.nhlbi.nih.gov/health/public/heart/obesity/wecan/healthy-weight-basics/obesity.htm>. Accessed on May 3, 2010.
3. John F Morgan, Fiona Reid, J Hubert Lacey., The SCOFF questionnaire: Assessment of a new screening tool for eating disorders., **BMJ** VOLUME 319 4 DECEMBER 1999.
4. Becker AE, Grinspoon SK, Klibanski A, Herzog DB. Eating disorders. *New England Journal of Medicine*, 1999; 340(14):1092–1098.
5. Steiner H, Lock J. Anorexia nervosa and bulimia nervosa in children and adolescents: a review of the past ten years. *Journal of the American Academy of Child and Adolescent Psychiatry*, 1998; 37:352–359.
6. King MB. Eating disorders in a general practice population. Prevalence, characteristics and follow-up at 12 to 18 months. *Psychol Med Monogr Suppl* 1989; 16: 191-4
7. Maor NR, Sayag S, Dahan R, Hermoni D. Eating attitudes among adolescents. *Isr Med Assoc J*. 2006 Sep;8(9):627-9.
8. Lorenzo CR1, Lavori PW, Lock JD. Eating attitudes in high school students in the Philippines: a preliminary study. *Eat Weight Disord*. 2002 Sep;7(3):202-9.

9. Amit A Upadhyah, Rajesh Misra, Deepak N Parchwani, Pankaj B Maheria. Prevalence and risk factors for eating disorders in Indian adolescent female. *Natl J Physiol Pharm Pharmacol.* 2014; 4(2): 153-157.
10. P. Mammen, S. Russell and P.S. Russell. - Prevalence of Eating Disorders and Psychiatric Co-morbidity among Children and Adolescents - *Indian Pediatrics* 2007; 44:357-359.
11. Lea Hautalaa, b, c, JouniJunnilad, Jouni Aline, Matti Grönroosf, Aija-Mari Maunulac, Max Karukivia, g, Pirjo-Riitta Liuksilac, Hannele Räihäh, Maritta Välimäkii, b, Simo Saarijärvia, b. Uncovering hidden eating disorders using the SCOFF questionnaire: Cross-sectional survey of adolescents and comparison with nurse assessments. *International Journal of Nursing Studies.* Volume 46, Issue 11, November 2009, Pages 1439–1447.
12. Catherine Chamay-Weber, M.D.a, Françoise Narring, M.D., M.Sc.b, Pierre-André Michaud, M.D. Partial eating disorders among adolescents: A review. *Journal of Adolescent Health* Volume 37, Issue 5, November 2005, Pages 416–426
13. Talia I. Zaider^{1,*}, Jeffrey G. Johnson^{1,2} and Sarah J. Cockell³ Psychiatric comorbidity associated with eating disorder symptomatology among adolescents in the community. *International Journal of Eating Disorders.* Volume 28, Issue 1, pages 58–67, July 2000
14. Catherine M. Shisslak, Marjorie Crago, and Mary E. Neal (1990) Prevention of Eating Disorders Among Adolescents. *American Journal of Health Promotion:* November/December 1990, Vol. 5, No. 2, pp. 100-106.