Journal of Community & Public Health Nursing

Research Article Open Access

# To Assess the Prevalence of Orthorexia Nervosa Among Young Adults

**Ginimole PC[1]*, Deepa Nair[2] and Twinkle Agrawal[3]**

[1]St. John's College of Nursing, Bangalore, India
[2]HOD and Department of Community Health Nursing, SJCON, India
[3]Deptartment of Community Medicine, SJMCH, India

## Abstract

**Background:** When we place excess concern on food and health, it will lead us to eating disorders. In recent years, a new eating disorder called Orthorexia Nervosa (ON) gives a new concept about eating disorders. It is characterized by the pathological obsession for biologically pure food, which leads to important dietary restrictions1.

**Objectives:** To determine the prevalence of Orthorexia Nervosa among young adults and to determine the association of Orthorexia Nervosa with selected baseline variables.

**Methods:** This is a Cross Sectional Study conducted in five urban colleges in Bangalore. The selection of the college was on the basis of convenience of the researcher, availability of the students and characteristics of the study subjects and stream of education available. The target population for the study is young adults both boys and girls between the age group of 18-25yrs. Based on the Review of Literature the sample size selected is 288, the researcher wishes to take the sample size of 300 with 80% power and 5% level of significance and a confidence interval of 95%. The sampling technique that was used in this study was proportionate stratified random sampling technique. Young adult between the age group of 18-25 yrs. Students from all branches of education such as science, arts and commerce. The tool used for the study was the ORTO-15 questionnaire.

**Result:** Out of 300 subjects 250 (83.3%) had orthorexic characteristics. There was a statistical association of orthorexia with gender 133 (x2 6.144, p<0.013) and nutritional awareness programme55(x2 5.169, p <0.023).

**Interpretation and Conclusion:** Present study reveals the high prevalence of Orthorexia Nervosa among young adults and it more in males than females.

**Keywords:** Orthorexia nervosa; Pathological obsession; ORTO-1

## Introduction

Consuming a nutritional diet is a physiological, sociological and psychological phenomenon1. To maintain optimum health, there is a need for a well-balanced diet, healthy food selection and a healthy food schedule. Nowadays, the young generation is obsessed about their health, body image and food intake. Mass media, emerging diseases and faulty beliefs encourage them to follow some dietary restrictions. They are trying to adopt an accepted health status and body image in the society. When we place excess concern on food and health, it will lead us to eating disorders; it will lead us to eating disorders. Generally eating disorders appear during the teen years or young adulthood [1-3] it affects both genders.

The term "Orthorexia" was first introduced by Steven Bratman in 1997. The word Orthorexia was first defined in a non-scientific Yoga Journal by Bratman with joining the Greek words 'Orthos' (correct, appropriate) and 'orexia'(appetite) [4]. While Orthorexic patients and this term are included neither in DSM-V nor in ICD-10 Classification, it is the subject of growing academic research and has become an accepted diagnosis in the mental health community. It is similar to eating disorders and also has some characteristics of obsessive compulsive disorders. Steven Bratman coined the term "Orthorexia Nervosa" to describe people whose extreme diets - intended for health reasons - are in fact leading to malnutrition or impairment of daily functioning. It involves making restrictions in dietary intake by themselves who feel a desire to improve their health status by healthy eating.

Unlike in Anorexia Nervosa and Bulimia Nervosa, people with Orthorexia are preoccupied with consuming healthy and pure foods instead of the quantity of food or its physical appearance [5, 6]. Orthorexic patients exclude foods from their diet that they consider to be impure because it contains herbicides, pesticides or artificial substances. They unnecessarily worry about the techniques and materials used in the food elaboration. This obsession leads to a loss of social relationship and affective dissatisfaction, which in turn, favors obsessive concern about food.

In orthorexia, the patient initially wants to improve his/her health, treat a disease or lose weight. In the beginning they avoid a single item and gradually increase the number of items. Finally, the diet becomes the most important part of their lives [7, 8]. It also feels a sense of superiority over those who eat unhealthy food. Gradually the physical health may worsen, because entire categories of food may be avoided, causing nutritional deficiencies. The social life may worsen, as this

***Corresponding author:** Ginimole PC, St. John's College of Nursing, Bangalore, India, Tel: 9539360025; E-mail: svmpraveena@gmail.com

**Received:** 31-Jan-2022, Manuscript No. JCPHN-22-51959; **Editor assigned:** 02-Feb-2022, PreQC No. JCPHN-22-51959(PQ); **Reviewed:** 16-Feb-2022, QC No. JCPHN-22-51959; **Revised:** 21-Feb-2022, Manuscript No. JCPHN-22-51959(R); **Published:** 28-Feb-2022, DOI:10.4172/2471-9846.1000328

**Citation:** Ginimole PC, Nair D, Agrawal T (2022) To Assess the Prevalence of Orthorexia Nervosa Among Young Adults. J Comm Pub Health Nursing, 8: 328.

avoidance of food categories may influence social behavior, causing social isolation and disruption of relationships.

## Need For Study

Eating disorders are usually appearing in adolescence and early adulthood when the individual is more prone to emotional fluctuations and influences. More than 86% suffer before the age of 20 years. During this period they are more conscious about their health and body structure. They are influenced by different health tips offered by the mass media and companions and will be motivated to adopt these for their beauty. Disordered eating is prevalent mostly in college students. It is a very complex and devastating condition which gives rise to serious health issues and social relations. This will lead to life threatening conditions and it can affect a person's emotional and physical health and wellbeing [7]. While the prevalence of those showing orthorexic tendency ranged from 6.9% to 57.6% in the general population. It was reported to range between 28-30% in sportsmen, to be 45.5% in physicians, 81.8% in opera artists and 81.9% in dieticians. A Turkish study found that 43.6% of medical students were preoccupied with healthy food. An extensive Hungarian study of 810 University students showed 70% of students having orthorexic tendencies and an American study showed the prevalence of orthorexic behavior ranging from 69% to 82.8% among undergraduate students. The studies showed that many students were presenting low BMI levels [9-13].

Thus, the investigator aimed to identify prevalence and shared risk factors for disordered eating behaviors in Indian young adults that could serve as targets for integrated preventive interventions.

## Objectives of the Study

1. To determine the prevalence of Orthorexia Nervosa among young adults.

2. To determine the association of Orthorexia Nervosa with selected baseline variables.

## Hypothesis

The entire hypothesis was tested at a 0.05 level of significance. H1: There will be a significant association between Orthorexia Nervosa and selected baseline variables of young adults.

## Assumptions

- Orthorexia Nervosa may be prevalent among young adults.
- Orthorexia Nervosa may have an influence on the BMI.
- Leaflet may be useful to create awareness among the participants.

## Limitations

Studies conducted on Orthorexia Nervosa are very less, especially in India and research study regarding Orthorexia is nil. A larger number of studies are required to understand the possible differences in the prevalence rates.

Present study is focused only among young adults between 18-25 years of age in Bangalore. Hence generalization of results is not possible.

Self-reported questionnaire was used for the study and there is a chance for bias (Figure 1).

## Research Methodology

**Research approach:** In view of the problem selected for the study and objectives to be accomplished, a Quantitative Approach was considered appropriate for this study.

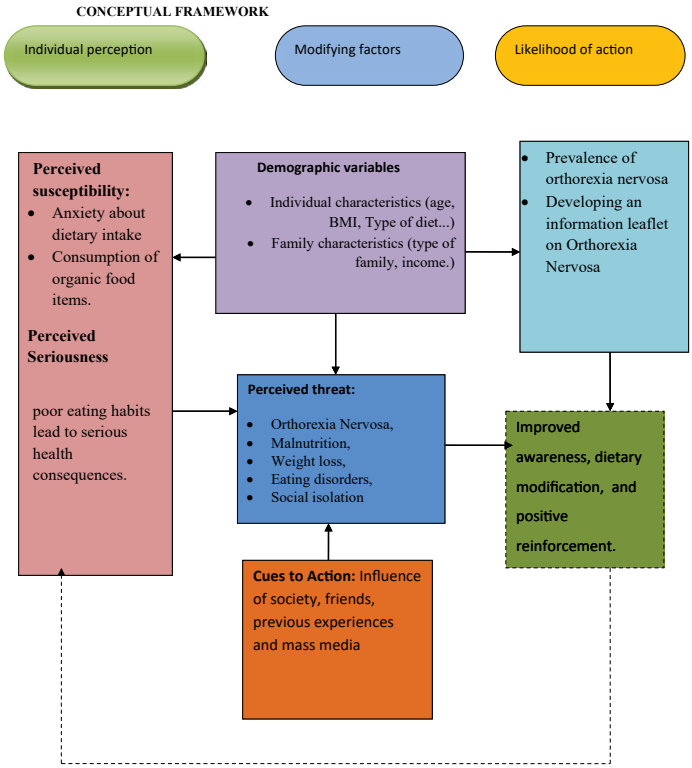


**Figure 1:** Conceptual Frame work of Rosenstoch's and Maiman's Health Belief Model.

**Research design:** The research design chosen for this study was Cross Sectional Study.

**Setting of the study:** The setting of the study is five urban colleges in Bangalore. The selection of the college was on the basis of convenience of the researcher, availability of the students and characteristics of the study subjects and stream of education available. Appropriate permission obtained from the college authority to conduct study.

**Population**

The target population for the study is young adults both boys and girls between the age group of 18-25 yrs from selected urban colleges of Bangalore.

**Sample and sampling size sample:** Sample consists of a subset of population selected to participate in the research study. In this study the sample consists of young adults between the age group of 18-25 years taken from 5 colleges by proportionate random sampling technique.

**Sample size:** Based on the Review of Literature the sample size selected is 288, the researcher wishes to take the sample size of 300 with 80% power and 5% level of significance and a confidence interval of 95%.

**Sampling technique**: The sampling technique that was used in this study was proportionate stratified random sampling technique.

**Sampling criteria inclusion criteria**

- Young adult between the age group of 18 – 25 yrs.
- Students from all branches of education such as science, arts and commerce.

**Exclusion criteria:** Students, who are on a special diet due to some illness.

## Description of the Tool

Tools are the instruments used by the researcher to collect data. The tool was selected based on the review of literature on related studies, opinion from the experts and discussion with the health personnel.

**Section: Proforma to elicit the baseline variables**

It consists of 14 items including age, gender, height, weight, stream of education, monthly income of the family, type of family, type of residence, type of diet, source of knowledge regarding nutrition, attendance in any session on nutritional awareness, family history of obesity, and past history of overweight and any history of consulting doctors for anxiety, tension or fear.

**Section: ORTO-15 questionnaire**

The ORTO-15 questionnaire is a tool consisting of 15 items describing the intensification of the orthorexic behavior. A 15-question likert type scale developed by Donini et al. based on the questionnaire prepared by the first researchers Bratman & Knight. The question of scale investigates the obsessive behavior of individuals in selecting, purchasing, preparing and consuming food that they perceive as healthy. At least 15 points and a maximum of 60 points can be taken from the scale. ORTO-15 scale score ≤40 orthorexia risk, >40 points were considered normal.

1, 5, 6,11,12,14 –Cognitive rational

3, 7, 8,9,15 - Clinical area

2, 4, 10, 13 –Emotional area

## Reliability of the tool

Standardized tool was used in the present study and to establish the reliability of ORTO- 15, split-half method was used (Cronbach's Alpha). Reliability score obtained was found to be 0.73, thus the tool is reliable.

## Results

In order to find a meaningful answer to the research questions the collected data must be processed, analyzed in some orderly coherent fashion, so that patterns and relationships can be discussed.

Analysis is the categorizing, ordering, manipulating and summarizing of data to obtain answers to the research questions. The interpretations of tabulated data can bring light to the real meaning and effectiveness of the findings [14-16].

In this study, quantitative approach was adopted to assess the prevalence of Orthorexia Nervosa among young adults. Data collected from 300 subjects were tabulated, analyzed and interpreted by using descriptive and inferential statistics based on the formulated objectives of the study. These are:

1. To determine the prevalence of Orthorexia Nervosa among young adults.

To determine the association of Orthorexia Nervosa with selected baseline variables (Figure 2 and Table 1)

2. There is significant association with prevalence of Orthorexia Nervosa gender and nutritional awareness of the subjects. Other baseline variable are not showing any significant relations with ON.

## Discussions

### Major findings of the study

In the present study, the sample size was 300 young adults. The sampling technique used for the study was proportionate Stratified random sampling. Hence the subjects were distributed equally among 300 students, each stream included 100 students. Among 300 subjects 150(50%) were boys and 150(50%) girls. Out of this majority 204(68%) were <20 years of age and remaining 96(32%) students were ≥20 years. Among 300 students 179(59.7) students belonged to the normal BMI range. Whereas 76(25.3%) were underweight and 45(15%) were overweight/obese [17,18].

Out of 300 subjects 232 (77.3%) students consumed both vegetarian and non-vegetarian food items. But 68 (22.7%) were vegetarians. Among 300 subjects 225 (75%) were staying in their home, 28(9.3%)

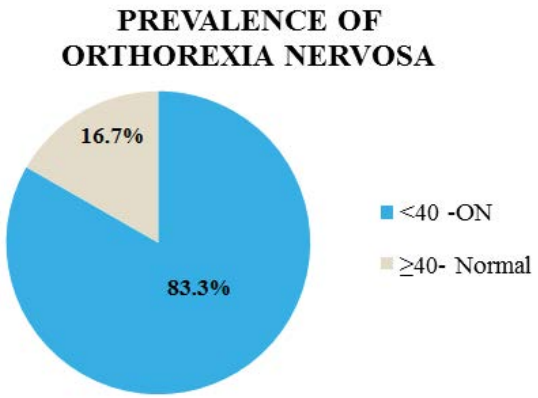


**Figure 2:** Prevalence of Orthorexia Nervosa.

**Table 1:** Association of orthorexia nervosa with baseline variables.

| SL No | Variables | <40 | ≥40 | 2 | P'value | Significance |
|---|---|---|---|---|---|---|
| 1 | Age | 172 | 32 | 0.441 | 0.507 | Not significant |
| | <20 | 78 | 18 | | | |
| | >20 | | | | | |
| 2 | Gender | 133 | 17 | 6.144 | 0.013 | Significant |
| | Male | 117 | 33 | | | |
| | Female | | | | | |
| 3 | BMI | 63 | 13 | 1.199 | 0.549 | Not significant |
| | <18.5 | 147 | 32 | | | |
| | 18.5-24.9 | 40 | 5 | | | |
| | >25 | | | | | |
| 4 | Stream of education | 80 | 21 | 1.913 | 0.384 | Not significant |
| | Arts | 86 | 14 | | | |
| | Commerce | 84 | 15 | | | |
| | Science | | | | | |
| 5 | Type of food | 59 | 41 | 0.745 | 0.388 | Not significant |
| | Vegetarian | 191 | 9 | | | |
| | Non vegetarian | | | | | |
| 6 | Type of residence | 183 | 42 | 2.592 | 0.274 | Not significant |
| | Home | 25 | 3 | | | |
| | Hostel | 42 | 5 | | | |
| | Paying guest | | | | | |
| 7 | Nutritional awareness | 55 | 4 | 5.169 | 0.023 | Significant |
| | Yes | 195 | 46 | | | |
| | No | | | | | |
| 8 | Source of Knowledge | | | 3.158 | 0.076 | Not Significant |
| 9 | Childhood Obesity | 34 | 4 | 1.181 | 0.277 | Not Significant |
| | yes | 216 | 46 | | | |
| | No | | | | | |
| 10 | History of mental illness | 17 | 4 | 0.092 | 0.761 | Not Significant |
| | Yes | 233 | 46 | | | |
| | No | | | | | |
| 11 | Type of Family | 188 | 33 | 1.818 | 0.178 | Not Significant |
| | Nuclear | 62 | 17 | | | |
| | Joint | | | | | |
| 12 | Family h/o obesity | 40 | 7 | 0.126 | 0.722 | Not Significant |
| | Yes | 210 | 43 | | | |
| | No | | | | | |
| 13 | Monthly income | | | 8.38 | 0.212 | Not Significant |

were in hostel and 47(15.7%) were paying guest. 241(80.3%) students did not attend any sessions on nutritional awareness, whereas 59 (19.7%) students attended nutritional awareness sessions. Among 300 samples 57(19%) were using books, 223(74.3%) were using internet, 45(15%) were using TV, 7(2.3%) were using radio and 21(7%) were using newspaper as a source of knowledge regarding nutrition. Out of 300 samples 38(12.7%) students have history of obesity in childhood and 21(%) students had history of mental illness in childhood.

Among the total subjects 221(73.7%) belonged to the nuclear family and the remaining 79(26.3%) belonged to the joint family. The study results regarding monthly income of the family showed that 68(22.3%) had an income between Rs.39, 033-78,062. and among 300 subjects 47 (15.7%) have a family history of obesity.

## Findings related to prevalence of orthorexia nervosa

In the present study, among 300 subjects 250 (83.3%) have Orthorexic Tendencies (ORTO-15 score <40) and 50 (16.7%) were in the normal range (ORTO-15 score ≥40). In a comparative study was conducted in Sweden with an objective to compare health status, physical activity, and frequency of orthorexia nervosa between university students enrolled in an exercise science program (n = 118) and a business program (n = 89). The study result showed that, out of 188 subjects, 144(76.6%) had Orthorexic tendencies with a higher proportion in exercise science students compared to business students (84.5% vs. 65.4%; p = 0.002). The results are probably high due to the media influence on students regarding the right type of food and awareness that food can affect their health and thereby choose food that have nutritive value. Findings related to association between Orthorexia Nervosa and selected baseline variables the present study shows statistically significant association in the gender. Among 150 male students 133 (53.2%) have orthorexic tendencies, whereas out of 150 female students 117(46.7%) shows characteristics of orthorexia. A cross-sectional study conducted in Turkey included 878 medical students, among them 464 (52.8%) were males and 359 (40.9%) were females. The study result shows that in the male students, there was statistical significance with higher tendency for orthorexia nervosa. The reason being males are prone to go for more body building strategies and other exercising patterns for prevention of various non-communicable diseases and also to be within the young adult group who go by the new trend of maintaining their body. In contrast other

studies have noted a greater prevalence among women, whereas, some other studies found no relationship. All these results have led to the understanding that Orthorexia Nervosa does not distinguish between genders.

In the present study there is no association between the BMI of the subjects and orthorexia nervosa. A comparative study conducted in Spain to assess the prevalence of Orthorexia among university students reveals that the Body Mass Index (BMI) had no influence on the tendency of Orthorexia Nervosa. However some other authors found a relationship between Orthorexia Nervosa and BMI.

In the present study 77.3% of subjects consumed both mixed diets, only 22.7% were vegetarians. Study findings show that this type of diet had no significant association with Orthorexia Nervosa. A study result published in Pubmed to assess the relationship of vegetarian diet with orthorexia nervosa showed that there was no relation between orthorexia and vegetarian diet. Present study showed no significant relation between orthorexia nervosa and stream of education. A comparative study was conducted in Sweden to compare health status, physical activity, and frequency of orthorexia nervosa between university students enrolled in an exercise science program (n = 118) and a business program (n = 89). Out of 188 students, 144 (76.6%) had an ORTO-15 score indicating orthorexia nervosa, with a higher proportion in exercise science students than in business students (84.5% vs. 65.4%; p = 0.002)12.

## Summary

The observations of the present study show that out of 300 subjects 250 have Orthorexia nervosa. The study findings show association between Orthorexia Nervosa, gender and attendance in nutritional awareness programs. Present study emphasizes to give importance to the prevention of incidence of Orthorexia Nervosa in the general population especially in the young adults. The process of study was a benefitting experience to the researcher. It was helpful to understand the emergence of orthorexia nervosa in young adults. The study also helped the investigator to build self confidence in taking up further research studies. The constant encouragement, timely corrections, directions and suggestions from the guide and co-guide, co-operation of the urban degree college authorities, students and support from the administrative management helped in the successful completion of the study.

## Conclusion

Prevalence of orthorexia is very high among young adults. There is significant association between orthorexia nervosa and gender and nutritional awareness. There is no significant relation with age, BMI, stream of education, type of residence, type of food, history of obesity type of family, family income, history of mental illness, source of knowledge.

### References

1. Grinko NV, Sumariuk BM (2018) Psychological features of persons with Orthorexia Nervosa. World science 17-19.
2. Ewa BZ, Lidia W, Dariusz T (2013) Eating disorders: problems contemporary civilization. Nutritional research 133-146.
3. Chacki B, Pal S, Bandyopadyay A (2013) Exploring scientific legitimacy of Orthorexia Nervosa: a newly emerging eating disorder. J hum sport 1045-1053.
4. Fernandez MLP (2018) Prevalence of Orthorexia Nervosa in university students and its relationship with psychopathological aspects of eating behaviour disorders. BMC Psychiatry 18-364.
5. Avsar O (2017) Orthorexia Nervosa - As an eating disorder. Edelweiss Psyi Open Access 103.
6. Dittefeld A, Gwizdek K, Jagielski P, Brzek A, Ziora K et al (2017) A study on the relationship between Orthorexia and vegetarianism using the Bratman test for Orthorexia. Psychiatr Pol 1133-1144.
7. Zamora CML, Bonaechea BB, Sanchez FG, Rial BR (2005) Orthorexia, a new eating behaviour disorder. Actas Esp Psiquiatr 66-68.
8. Valente M, Syurina EV, Donini LM (2019) Shedding light upon various tools to assess Orthorexia Nervosa: a critical literature review with a systematic search. Eat Weight Disord 671-682.
9. Ermumcu MSK, Tek NA (2018) Healthy eating concern (Orthorexia Nervosa) and related factors in women. COJ Nurse Healthcare 1-3.
10. Erkin O, Gol I (2019) Determination of health status perception and orthorexia nervosa tendencies of Turkish yoga practitioners: a cross-sectional descriptive study. Progress in Nutrition 105-112.
11. Shashank KJ, Gouda P, Chethan TK (2020) A cross sectional study to assess the eating disorder among female medical colleges of Karnataka State. Ntl J Community Med 2229- 6816.
12. Metera BA (2021) Vegetarian diet and Orthorexia Nervosa: a review of the literature. Eat Weight Disord 1-11.
13. Barthels F, Barrada JR, Roncero M (2019) Orthorexia and healthy Orthorexia as new eating styles. PLoS One 1-16.
14. Mettera AB (2019) Does Emotional Eating Mediate The Relationship Between Body Image Related Distress And Orthorexic Behaviours In Overweight/Obese Women. Uniwersytet SWPS 1-15.
15. Heddad C, Obeid S, Akel M, Honein K, Akkiki M et al (2019) Correlates of Orthorexia Nervosa among a representative sample of the Lebanese population. Eat Weight Disord 481-493.
16. Polit D F, Beck C T (2012) Nursing research generating and evidence for nursing practice. Nursing Research 1-58.
17. Kumar S, Singh AK, Kaur M, Sharma A (2006) The prevalence of eating disorder among young girls and boys by using an eating attitude test. IJPES 378-381.
18. Matera AB (2012) Orthorexia Nervosa- an eating disorder, obsessive – compulsive disorder or disturbed eating habit?. Arch Psychiatry Psychother 55-60.