

Psychological Correlates of Orthorexia Nervosa among Adolescents

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ABSTRACT

The present study aims to explore the relationship between Orthorexia Nervosa, Self-Esteem, and Cognitive Flexibility. Based on the premise that adolescents who indulge in obsessive “healthy eating” tend to develop superior self-esteem and stringency in getting things done in their own way. It is hypothesized that there is a direct relationship between Orthorexia Nervosa and Self-Esteem on one hand, and Orthorexia Nervosa and Cognitive Flexibility, on the other. The sample constitutes female adolescents belonging to the age group of 17-19 years. It is to be noted that higher scores on the ORTO-R scales are indicative of lower ON tendencies/symptoms. Results showed a significant positive correlation between scores on the ORTO-R scale and the Self-esteem scale, as well as on the ORTO-R scale and the Cognitive Flexibility Inventory. In addition, we found a negative correlation between scores on ORTO-R & Weight. Implications and findings are discussed.

Keywords: *Orthorexia Nervosa, Self-Esteem, Cognitive Flexibility*

According to the National Eating Disorders Association, Orthorexia is defined as an obsessive “healthy eating” behavior and being fixated on it to damage one’s own well-being. Orthorexia has still not been clinically recognized and if someone visits the doctor with the symptoms, they would not be officially diagnosed with it but rather be just a point of discussion of their illness. Orthorexia shares its branches with anorexia and obsessive-compulsive disorder to cope with negative feelings and thoughts, or to feel in control (Beat, 2023).

According to Morris Rosenberg (1965), self-esteem is a “favorable or unfavorable attitude towards the self.” Self-esteem can be improved by working on self-acceptance by providing a secure and healthy positive relationship with the self. (Courtney & Nash, 2018). Research has proven that self-esteem has major effects on “human cognition, motivation, emotion, and behavior. Self-esteem has two components of intrinsic and extrinsic interactions with depression, loneliness, and, suicide ideation. Low self-esteem is found to have a detrimental effect on a person’s well-being, thus internalizing problems (Baumeister, 1993; Creemers, et al., 2013).

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Cognitive Flexibility is defined as the ability to align mental processes with appropriate behavioral responses. Cognitive flexibility emerges from the combined work of specific nodes in the frontal and parietal cortices (Dajani & Uddin, 2015). The terms cognitive flexibility and behavioral flexibility are used interchangeably in neuroscience literature as the mental ability to switch thinking is proportionately related to the change in behavior in response to environmental stimulus.

An orthorexic person is found to have a superiority complex because of their “healthy” eating behavior and their ability to control cognitive distress which in turn, again, increases their self-esteem. While disordered eating arises from low self-esteem, ON behavior has been observed by the desire to develop one’s potential which drifts away from completing the circle of disordered emotions and to increase rather than decrease self-esteem (Matera, et al., 2022).

Orthorexia and Cognitive Flexibility are related in terms of the person having Orthorexic tendencies or symptoms to be inflexible with their thoughts and behaviors specific to healthy eating (Hayatbini & Oberle, 2019). People who have Orthorexic tendencies develop a mindset of “food purity” and have strict dietary restrictions for themselves, thus developing moral superiority about food habits. They have a mentality of all or none policy and experience a high level of frustration when their daily food-related practices are thwarted leading to guilt, self-loathing, self-punishment in the form of cleansing fasts, and self-isolation (Koven & Abry, 2022).

Hypotheses:

H1: There is a negative correlation between orthorexic tendencies and self-esteem.

H2: There is a negative correlation between orthorexic tendencies and cognitive flexibility.

METHODOLOGY

Sample

Female adolescents falling in the age range of 17 to 19 were the sample of this study. The convenience sampling method was used to obtain the data from the sample. The intended sample size was 100, and the obtained sample size is 153.

Tools/Measures

ORTO-R Scale by Radosław Rogoza and Lorenzo M. Donini measures the presence of orthorexic tendencies in the individual. The questions are Likert-type. There are a total of 6 items on this scale.

Rosenberg’s Self-esteem Scale measures the global self-worth of the participants. The questions follow a Likert pattern. There are a total of 10 items on the scale.

Cognitive Flexibility Inventory, given by John P. Dennis and Jillon S. Vander Wal, measures two aspects of cognitive flexibility -

1. Alternatives- the adaptive ability of the person to perceive multiple solutions for difficult situations.
2. Control- the tendency to perceive all citations as controllable, ie, having an internal locus of control.

There are a total of 20 items in this inventory.

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Ethical Concern

Informed consent, confidentiality, and freedom to withdraw were followed.

Procedure

Female adolescent students from a college in Bangalore were asked to provide their responses on the three scales. Their demographic details were also collected. The responses were scored and then statistically analyzed to understand the relationship between the variables - orthorexic tendency, self-esteem, and cognitive flexibility. Additionally, the relationship between self-esteem and cognitive flexibility was also found.

Data Analysis

The researchers converted the responses into score points and SPSS was used to determine the relationship between the variables. Correlation was used to find out the relationships due to the prevalence of a non-parametric variable. Two of the responses were taken out of the study due to a lack of completion of the questionnaires.

RESULTS AND DISCUSSION

The aim of this research study was to understand if the presence of orthorexic tendencies among female adolescents of ages 17 to 19 was positively correlated with their self-esteem levels as well as their cognitive flexibility.

Table 1: Descriptive Statistics of 153 subjects.

	N	Minimum	Maximum	Mean	Std. Deviation
Orthorexia	153	8	21	14.61	2.798
Self-Esteem	153	14	38	25.33	5.450
Cognitive Flexibility	153	49	128	93.30	13.346

Table 1 represents the Descriptive Statistics done on the 153 subjects. Three different scales have been used to assess orthorexia, self-esteem, and cognitive flexibility among female adolescents aged 17-19 years. These scales are the ORTO-R Scale by Radosław Rogoza and Lorenzo M.

Donini, Rosenberg's Self-esteem scale, and the Cognitive Flexibility Inventory given by John P. Dennis and Jillon S. Vander Wal.

On Orthorexia, the sample has obtained a mean score of 14.61, with a minimum score of 8 and a maximum of 21, and a standard deviation of 2.798. On Self-Esteem, the sample has obtained a mean score of 25.33, with a minimum score of 14 and a maximum of 38, and a standard deviation of 5.450. On Cognitive Flexibility, the sample has obtained a mean score of 93.30, with a minimum score of 49 and a maximum of 128, and a standard deviation of 13.346.

Table 2: Normality test using the Shapiro-Wilk for Orthorexia, Self-Esteem, and Cognitive Flexibility

Variables	Statistic	df	Sig.
Orthorexia	.973	153	.004
Self-Esteem	.984	153	.074
Cognitive Flexibility	.992	153	.593

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The data were subjected to tests of normality, as shown in Table 2. For Orthorexia, the Shapiro-Wilk statistic was found to be .973 which is significant at .004. Since the significance value was less than 0.05, it is understood that the data is not normally distributed. Hence, non-parametric statistics were used.

However, for self-esteem and cognitive flexibility, the Shapiro-Wilk statistic was found to be .984 and .992 which is significant at .074 and .593 respectively. Since the significance value was more than 0.05, it is understood that the data is normally distributed. Hence, parametric statistics were used.

Table 3: Correlation between Orthorexia, Self-Esteem, and Cognitive Flexibility

		Orthorexia	Self-Esteem	Cognitive Flexibility
Orthorexia	Correlation Coefficient	1.000	1.76	.188
	Sig. (2 - tailed)		.029	.020
	N	153	153	153
Self - Esteem	Correlation Coefficient	.176	1.000	.312**
	Sig. (2 - tailed)	.029		.000
	N	153	153	153
Cognitive Flexibility	Correlation Coefficient	.188	.312**	1.000
	Sig. (2 - tailed)	0.20	.000	
	N	153	153	153

*- 0.05 level of significance

** - 0.01 level of significance

The correlation coefficient for orthorexia and self-esteem was found to be 1.76. The significance value was .029 indicating that there exists a significant weak positive relationship between these two variables. Similarly, the correlation coefficient for orthorexia and cognitive flexibility was found to be .188. The significance value was .020 indicating, again, that there is a significant weak positive relationship between these two variables. Moreover, the correlation coefficient for self-esteem and cognitive flexibility was found to be .312 and the significance value was .000 indicating that there exists a significant weak relationship between these two variables.

The current study found a significant negative correlation between orthorexic symptoms and self-esteem, thus accepting the hypothesis (H1). These findings align with a previous study in which higher self-esteem scores equated with lower orthorexic tendencies (Yilmax & Dundar, 2022). This suggests that individuals with orthorexic tendencies have a sense of food purity which when compromised leads to intense frustration and a worry to achieve complete food control. This in turn results in low self-esteem and impaired stress reactivity.

In line with the second hypothesis (H2), our findings reflect a significant negative correlational difference between Orthorexic symptoms and Cognitive Flexibility. Hyatbini & Oberle, 2019 revealed that orthorexic symptoms are associated with inflexible thoughts and specific “healthy eating” behaviors. This stems from the fact that Orthorexia being an obsessive-compulsive disorder regarding eating shifts the mind to focus on cognitive rigidity towards food specifically. This is where the restriction of certain food items steps in and individuals end up labeling foods as “good” or “bad.”

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Our research contributes to the missing elements of existing research on the upcoming eating disorder Orthorexia Nervosa in terms of studying its effects on a person's Self-Esteem and Cognitive Flexibility. It also suggests future interventions on finding the exact mediating variable between high Orthorexic tendencies and high self-esteem & Cognitive rigidity. Additionally, our study found a significant positive relationship between self-esteem and cognitive flexibility, thereby adding to our research through exploration. But there is a dearth of research to prove the direct relationship between these two variables which again opens the way for later findings. Lastly, our study shows a negative correlation between weight and orthorexic tendencies. This lies in contradiction with research in the past that showed orthorexia not to be related to weight/shape concerns but to higher weight-related restraint eating behaviors (Stutts, 2020).

Note: Higher scores on the Ortho-R scale indicate reduced Orthorexic tendencies/symptoms.

CONCLUSION

It is evident that scores on ORTO-R have a direct and positive relationship between both Self-esteem and Cognitive flexibility. This means that females who were found to score higher in ORTO-R had lesser orthorexic symptoms and as a result higher self-esteem and higher cognitive flexibility. We also found additional findings of a positive correlation between Self-esteem and Cognitive flexibility and a negative correlation between ORTO-R and weight which calls for future research implications and interventions. An application of our study is that it adds to the research on understanding orthorexia nervosa as an eating disorder with clinical implications. There is a dearth of research in the field of orthorexia, considering that it as an emerging topic. Implications of our study mainly focused on female adolescent children which narrows its applications to other genders and ages.

REFERENCES

- Ackerman, C.E., MA. (2023). What is Self-Esteem? A Psychologist Explains. *PositivePsychology.com*. <https://positivepsychology.com/self-esteem/>
- Brytek-Matera, A., Pardini, S., Szubert, J., & Novara, C. (2022). Orthorexia Nervosa and Disordered Eating Attitudes, Self-Esteem and Physical Activity among Young Adults. *Nutrients*, 14(6), 1289. <https://doi.org/10.3390/nu14061289>
- Chace, S., & Kluck, A. S. (2022). Validation of the Teruel Orthorexia Scale and relationship to health anxiety in a U.S. sample. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 27(4), 1437–1447. <https://doi.org/10.1007/s40519-021-01272-8>
- Dajani, D. R., & Uddin, L. Q. (2015). Demystifying cognitive flexibility: Implications for clinical and developmental neuroscience. *Trends in Neurosciences*, 38(9), 571–578. <https://doi.org/10.1016/j.tins.2015.07.003>
- Dunn, T. M., & Bratman, S. (2016). On orthorexia nervosa: A review of the literature and proposed diagnostic criteria. *Eating Behaviors*, 21, 11–17. <https://doi.org/10.1016/j.eatbeh.2015.12.006>
- Hamid, M. K. A., Azman, N. N., Said, N., & Rahman, A. H. A. (2018). Orthorexia Nervosa and the Quality of Life among Health Sciences Students in Universiti Teknologi MARA, Selangor. *Environment-behaviour Proceedings Journal*, 3(7), 121. <https://doi.org/10.21834/e-bpj.v3i7.1264>
- Koven, N. S., & Abry, A. (2015). The clinical basis of orthorexia nervosa: emerging & perspectives. *Neuropsychiatric Disease and Treatment*, 385. <https://doi.org/10.2147/ndt.s61665>

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- National Eating Disorders Association. (2019, December 13). *Orthorexia*. <https://www.nationaleatingdisorders.org/learn/by-eating-disorder/other/orthorexia>
- Stutts, L. A. (2020). It's complicated: The relationship between orthorexia and weight/shape concerns, eating behaviors, and mood. *Eating Behaviors*, 39, 101444. <https://doi.org/10.1016/j.eatbeh.2020.101444>
- Uddin, L. Q. (2021). Cognitive and behavioural flexibility: neural mechanisms and clinical considerations. *Nature Reviews Neuroscience*, 22(3), 167–179. <https://doi.org/10.1038/s41583-021-00428-w>
- Yilmaz, M., & Dündar, C. (2022). The relationship between orthorexia nervosa, anxiety, and self-esteem: a cross-sectional study in Turkish faculty members. *BMC Psychology*, 10(1). <https://doi.org/10.1186/s40359-022-00796-7>
- Zbiciak, A., & Markiewicz, T. (2023). A new extraordinary means of appeal in the Polish criminal procedure: the basic principles of a fair trial and a complaint against a cassatory judgment. *Access to Justice in Eastern Europe*, 6(2), 1–18. <https://doi.org/10.33327/ajee-18-6.2-a000209>

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Conflict of Interest

The author(s) declared no conflict of interest.

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