

The Power of Parenting: Is there a Relationship between the Occurrence of Orthorexia Nervosa and Parenting Style?

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Abstract

Eating disorders are a serious public health concern, affecting millions each year in the United States, especially adolescents and young adults. National surveys estimate that 20 million women and 10 million men will suffer from some type of eating disorder during their lifetime¹³. More specifically, a national survey of college-aged students revealed that 20% had suspected they had suffered from an eating disorder at some point in their lives⁶. Moreover, there is a link between parenting and eating disorders. Parenting styles influence how children view and interact with the world, and how they also will perceive themselves. Certain styles of parenting can give rise to perfectionism, striving to meet expectations, and ultimately eating disorders, so it's vital to emphasize the ability of parents to cause these situations, as well as intervene to help¹⁵. However, it is unknown if there is a relation between orthorexia and parenting. Orthorexia nervosa is a subclinical level of an eating disorder marked by obsession with the quantity and quality of food eaten, and feeling badly if one fails to adhere to certain eating habits⁹. Despite the fact that those with orthorexia aim to eat well, the unhealthy obsession often leads to nutritional deficiencies, health complications, and poor quality of life¹⁰. The purpose of this study is to examine the relation between orthorexia and parenting. Data was collected via an online survey. It was administered to undergraduate students at a mid-sized Midwestern school. While a relationship between the occurrence of orthorexia nervosa and exposure to more controlling, less supportive types of parenting styles in the past was expected, results indicated no strong correlation between the two variables. Implications of the study emphasize that further research needs to be done on this condition in order to be able to measure such relationships more clearly in the future.

Keywords: Orthorexia Nervosa, parenting styles, authoritarian

1. Introduction

Current research indicates that eating disorders have the highest mortality rates out of all the mental health concerns⁵. They are complex, life-threatening issues that need to be understood in order to get people the help that they deserve. Eating disorders have existed since at least the first century, with origins in ancient Rome and ancient Egypt. In the early 1900s, people first viewed issues such as anorexia and bulimia as physical diseases and endocrine disorders⁶. It wasn't until the 1930s that doctors started to understand the emotional and psychological implications of these concerns. Despite the fact that these problems have been occurring across cultures for hundreds of years, it wasn't until the past 30 years or so that these became serious in the eyes of many. They finally became less stigmatized and diagnosable, and during the early 2000s, treatment centers developed⁷. A lot of literature exists explaining anorexia nervosa and bulimia, but the more recent disorder termed orthorexia nervosa has been explored very little.

The literal definition of orthorexia nervosa signifies "proper appetite"¹⁰. The term was first coined in the late 1990s by Dr. Steven Bratman and David Knight. Whereas there is no formal diagnostic criteria as it is not recognized in the

Diagnostic and Statistical Manual at the moment, awareness is on the rise as more and more people relate to this issue. Basically, orthorexia is an obsession with proper, healthy ways of eating. It has been described as a “disease disguised as a virtue”, because while being conscious of healthful eating is not an issue in and of itself, those with this disorder take it to extreme levels¹⁰. They become so fixated on nutritional quality and food purity that other aspects of their life and well-being are damaged as a result¹³.

Those with orthorexia nervosa are obsessed with proper nutrition and optimization of health. They show this by practicing a restrictive diet, engaging in excessive amounts of meal preparation, and having ritualistic eating patterns. These individuals scrutinize over the quality of food in a desire to maximize nutrition and well-being. They spend excessive amounts of time finding foods that meet their criteria of being “healthy”, cutting out foods they deem as unhealthy, planning out future meals, and worrying about food in general¹⁰. They adhere to their style of eating, and are plagued with feelings of guilt and doubting their self-control should they stray from usual habits. They have a hard time enjoying food in abnormal settings (such as at a wedding or at a conference where food is provided for them), and are constantly plagued with these feelings¹⁰.

There are several negative consequences for those that have these tendencies indicative of orthorexia. Such a preoccupation with diet and food can lead to nutritional deficiencies as one could omit entire food groups, which has extreme negative health consequences (anemia, metabolic acidosis, etc.). It also leads to poor quality of life and negative mental health concerns, as one is preoccupied with feelings of guilt and shame should one stray from set eating patterns. Above all, it can put a strain on one’s relationships with others, as often these people desire to eat alone or not eat out with groups of individuals in the fear that they will not adhere to their diet¹⁰.

Several existing factors may contribute to the occurrence of orthorexia nervosa. To start, there is research showing that these behaviors are similar to those seen in people with anorexia nervosa and obsessive compulsive disorder (OCD). Overlap between individuals with anorexia and orthorexia shows that both share common traits of perfectionism, a desire to have control over situations which then translates to control over food, high trait anxiety, and a desire for weight loss. Between orthorexia and OCD, both individuals have intrusive thoughts about health at inappropriate times, inflated concern over food, and a need to adhere to an eating pattern¹.

In regards to the concept of parenting styles, there are four different types that are recognized: authoritative, authoritarian, neglectful, and permissive. Each one is uniquely characterized, imparting different consequences on adolescents and how they will navigate through life. Authoritarian is associated with a focus on obedience and punishment over simply discipline. This is seen with parents who always make the rules and leave little room for the opinions/feelings of their kids. Children raised in this environment tend to be rule-followers, and are at heightened risk for self-esteem issues as their voices are not valued at home. On the other hand, authoritative parents are known for creating a positive relationship with children while at the same time still enforcing the rules. Positive reinforcement is typically used, while at the same time valuing the thoughts and feelings of their kids. Children in this environment usually grow up to be responsible, happy, and successful, aware of how to evaluate risks on their own. Differently, permissive parenting is a style that is not focused on enforcing the rules. These parents will show that they care, but don’t put time into dealing with bad behaviors. Kids raised in this manner are also likely to experience self-esteem issues, and have behavioral issues as they don’t know how to deal with rules. Finally, neglectful parenting is just how it sounds: uninvolved, and providing little guidance and nurturing to kids. They don’t give their kids much attention, and aren’t very interested in their lives. These kids tend to be less happy and struggle more with the idea of self-concept¹².

Past research indicates that there is a relationship between parenting styles and emergence as well as maintenance of eating pathology in children. This link is rooted in the social expectation model of perfectionism, showing that manipulating how kids think, feel, or behave is a characteristic tied to eating disorders in particular. Perfectionism is the link between psychological control and eating disorders. It has been found that those who report their parents as having lower levels of autonomy and higher levels of control have higher levels of socially-prescribed perfectionism, subsequently putting them at a higher risk for developing an eating disorder¹⁵. This has several implications for the etiology and treatment of eating disorders, and has only been broadly explored in the past.

Additional research supports that low parental care and high parental control are linked with the occurrence of eating disorders later on in life⁸. This is indicative of an authoritarian style of parenting, leading one to believe that this style could explain the emergence of an eating disorder in a person. Interestingly enough, there was a difference between maternal and paternal perceived parenting styles in association with the occurrence of eating disorders. Low maternal care and high control was more likely to cause depression, eating disorders, and behavioral disorders in adolescents. On the other hand, there was no association with low paternal care and eating disorders. This was more likely to cause alcohol use/abuse and other phobias in adolescents. Thus, the literature supports the idea that the relationship between parenting style and mental disorders such as the occurrence of an eating disorder is very complex, and needs to be analyzed to a greater extent⁸.

With the knowledge that there is a relationship between the authoritarian style of parenting and the occurrence of certain eating disorders, the current study hypothesizes that those who were exposed to more controlling, less supportive (authoritarian) types of parenting styles in the past will be more likely to have orthorexia nervosa or engage in similar behaviors. Since orthorexia is a recently described condition, there appears to be gaps in the current literature that addresses this specific relationship. This study, as a result, aims to change that, and figure out if a relationship between parenting style and orthorexia does indeed exist.

2. Methodology

2.1 Participants

A range of students from a midsized college participated in this study. The total number of participants was 273. This campus is unique because it is not very diverse racially, as seen with the fact that an overwhelming 89% of them responded as being Caucasian. Outside of that, 5.5% of participants responded as being African American, and 4.8% responded as being Asian/Asian American. In terms of gender, 74.7% of the participants were female. Age ranged from 18 to 31 years old, with the majority being between 19 and 21 (22% and 28.6%, respectively). Additionally, the campus is unique due to its geographic demographic. It is in the Midwest and is in a college town.

2.2 Procedure

The online software service, Qualtrics, was used to design a survey for data collection. The survey asked questions addressing several health topics, such as alcohol consumption, mental health attitudes, exercise tendencies, background information, and more. Data was collected using the snowball method. An email was sent out to many students on this midsized, Midwestern campus with a link to an online survey. Students were encouraged to take the survey, answering the prompted questions and upon completion, were entered into a drawing for four \$50 gift cards.

2.3 Measures

2.3.1 *parental bonding instrument (PBI)*

One questionnaire on the survey that pertained to the current study used was the Parental Bonding Instrument (PBI), a standardized test used to assess two components of the child-parent relationship: parent¹⁴. The PBI is a retrospective measure, assessing parenting styles as perceived by children during their first 16 years of life. Answers to certain questions are categorized into two different scales to be able to measure different aspects of parenting. One category is for items related to “care”, and the other pertains to items measuring “overprotection/control”. There are 25 questions, which are then completed both for a mother and a father. Responses included “very unlike”, “moderately unlike”, “moderately like”, and “very like”. Questions were then categorized accordingly to further interpret scores¹⁴.

Based on the scale, optimal parenting is achieved by someone with high care and low protection scores. This indicates a more authoritative style of parenting. On the other hand, affectionless control would be observed with parents who have high protection and low care scores. This is more associated with authoritarian parenting. The cut-off scores for HIGH care scores are 27.0 for mothers and 24.0 for fathers. On the other hand, the cut-off scores for LOW protection scores are 13.5 for mothers and 12.5 for fathers. This means that one would want to see scores at or above the cut-offs for care and at or below the cut-offs for protection in order to show a more authoritative style of parenting¹⁴.

2.3.2 *bratman orthorexia test (BOT)*

The Bratman Orthorexia Test (BOT) was another measure used in the survey to study this particular research question⁴. The BOT is a newly-developed questionnaire containing 10 yes or no questions about eating patterns related to orthorexia. It has not been standardized yet as orthorexia is a novel term. The purpose of the test is to determine if a person is exhibiting behaviors that might be indicative of having orthorexia nervosa. According to the scale established by Dr. Steven Bratman, “yes” responses for all of the questions indicates that one likely has orthorexia

nervosa and should seek guidance and support⁴. “Yes” responses to four or five of the questions indicates a strong likelihood of one having the disorder⁴.

2.4 Statistical Approach

Upon completion of the survey and collection of the data, multiple Pearson’s correlations were run using SPSS – a software for statistical data analysis. Four bivariate correlations were run to test for relations between parenting and orthorexia. Two separate correlations were collected for both mother and father in order to get correlations for maternal and paternal care and overprotection. Mean and standard deviation were also calculated, as well as Cronbach’s alpha scores to test for internal validity of the responses.

3. Results

As seen in Table 1 below, weak positive and negative correlations were found between the Bratman Orthorexia Test and all PBI measures. At a significance level of $p=0.05$, correlations were determined based on the following scale for Pearson’s coefficients: a value of 0 indicates no correlation, a value of +1 indicates a strong positive correlation (that is, as one value increases, the other also increases) and a value of -1 indicates a strong negative correlation (as one value increases, the other value decreases). R-values between positive or negative 0 to 0.3 indicate weak correlations; between positive or negative 0.3 to 0.5 indicate moderate correlations; and greater than positive or negative 0.5 indicate strong correlations. Thus, no strong relationship between the occurrence of orthorexia and certain parenting styles was found.

However, since the mean score on Bratman was 4.23, this indicates a possibility of participants having orthorexia – since on average, participants answered yes to 4.23 of the questions. In terms of PBI measures, high maternal care was found with a mean above 27, and low maternal control was found with an overprotection mean less than 13.5. Similarly, high paternal care was found with a mean greater than 24 and low paternal control was found with a mean overprotection score less than 12.5¹⁴.

When looking at reported Cronbach’s alpha scores, one can see that all of the measures for PBI found internal validity. Specifically, PBI overprotection measures for both mother and father had scores that were good. PBI care measures for both mother and father had scores that were excellent. On the other hand, the Cronbach’s alpha score for the Bratman Orthorexia Test was the lowest, hovering right around questionable and acceptable¹⁶.

Table 1. Results of statistical analysis including mean, standard deviation, correlations (r-values) between all parenting and orthorexia measures, and Cronbach’s Alpha scores, which measures consistency. In the table, PBI stands for Parental Bonding Instrument and SD stands for standard deviation,

	Mean (SD)	Correlation ($\alpha = 0.05$, r values reported)	Cronbach’s alpha scores
PBI: Care, Mother	29.74 (5.07)	-.040	0.948
PBI: Overprotection, Mother	13.47 (7.49)	.068	0.886
PBI: Care, Father	27.50 (8.16)	.072	0.942
PBI: Overprotection, Father	10.90 (6.47)	-.008	0.853
Bratman Orthorexia Test	4.23 (2.36)	-----	0.714

4. Discussion

Results indicate no strong relationship between the occurrence of orthorexia as a result of exposure to more authoritative parenting. A mean score of 4.23 on the Bratman Test suggest only a possibility of having orthorexia, and since this is a subclinical level eating disorder, it's hard to say whether this test reveals the true presence of orthorexia in individuals as everyone is different and has unique habits. Furthermore, existing literature validates that the 10-item questionnaire is a more informal measure that should solely be used for screening purposes to identify those at risk for orthorexia. There are currently no psychometric properties like data regarding validity, reliability, cut scores, or a reference group, and it is not a scientifically sound scale. Despite this, it has still been used in several studies and given the name "Bratman Orthorexia Test"⁴.

However, the literature does mention that the questionnaire is the basis for the ORTO-15 – the measure designed to detect orthorexia in a more scientific manner. In the current study, the ORTO-15 was also used in preliminary analysis but not included in the reported data because there was even less internal validity than with the BOT. The ORTO-15 had a Cronbach's alpha score of 0.473. Since the cut off for a reliable measure is reported as a score of 0.80, the one for the current study is considered unacceptable and thus was not used for analysis of the data collected¹⁶. Literature also mentions that there are several shortcomings to this measure, too, such as the fact that there are several psychometric limitations and cultural concerns when translating the scale to countries worldwide. It's also impossible to tell if eating behaviors are "becoming clinically significant or inducing medical problems,"⁴, so thus, there are no reliable measures for the true prevalence of orthorexia.

Additionally, all mean scores reported from the PBI measures report exposure to parents with high care and low control in the past, indicating authoritative styles of parenting. Since authoritarian is more associated with the occurrence of eating disorders and was not found within this population, this could also explain why no strong correlation was found between the two variables¹⁴. If there had been data more linked to authoritarian styles of parenting, it's possible that there could have been more of a correlation between the two, but there is no way to tell for sure. Looking at the breakdown of maternal and paternal measures more specifically, previous research reveals that high maternal care is associated with lower odds of developing an eating disorder, a specific phobia, and substance abuse. High maternal control, on the other hand, was associated with greater odds of all of these⁸, and since the results showed high maternal care and low control, this could explain why no correlation was found for orthorexia.

In terms of paternal measures, high paternal care in previous literature showed reduced risk of having a social phobia or developing an alcohol dependence, while high paternal control increased ones' risk⁸. Again, high paternal care and low control was found within this particular population, which could be a possibility as to why there was no relationship found for orthorexia in the current study. Other limitations include the self-report data and homogenous sample. Another is the lower Cronbach's Alpha Score for the BOT, at 0.714. This indicates that reliability wasn't as strong and was close to questionable¹⁶.

Despite the limitations, this study reveals a need for a better measure of orthorexia before trying to come to further conclusions moving forward. Many case studies and evidence throughout the world show that orthorexia nervosa should be pursued to determine if it is a distinct condition⁴. In the future, there needs to be more valid research conducted, sound diagnostic criteria established, and a better measure for the condition in general. Dunn & Bratman proposed diagnostic criteria in their article published in 2016 and used for the current study, and this should be pursued further and in a more in depth manner as it continues to become more prevalent⁴.

Moving forward, this study could be expanded to a greater number campuses or more students in general. The small sample size and nature of the university at which it was administered could be indicative of certain patterns of parenting found, and it would be interesting to expand the sample size to more campuses in different settings. Additionally, it could be advantageous to include both questionnaires on orthorexia, or perhaps a question on overall knowledge of the disorder. Some with the disorder might not think that their behaviors are necessarily unhealthy, and spreading knowledge as to why it is an issue in the first place might be helpful for those taking the survey. Furthermore, breaking down the results by gender of the respondents and correlating that with both maternal and paternal measures could draw further conclusions between the occurrence of orthorexia and where/why the behaviors might have started in the first place – and to see if gender differences might exist for this disorder.

Due to the fact that an increasing number of PubMed articles are released with "orthorexia" in the title, one can believe that orthorexia is a growing concern that needs analyzed to a greater extent to become more legitimate². As mental health disorders become less stigmatized and as more unusual behaviors are discovered, there needs to be research done on these topics to be able to know how to properly target and help those affected. Eating disorder professionals are becoming increasingly bombarded with people pathologically preoccupied with healthy eating¹¹, so

this is not an issue that can be cast aside. Although a succinct measure for the condition is not known at this time, professionals can become more aware of the warning signs, people can be educated across the nation about this phenomenon, and more research can be done so that this does not become more of an issue than it already is at the time being.

5. Acknowledgements

The funding for this study was provided by Miami's Office of Undergraduate Research with the Undergraduate Presentation Award, the Honors Program with the Undergraduate Research Award, and the Department of Kinesiology & Health. Many special thanks to Dr. Rose Marie Ward, who made this project possible and provided mentorship throughout the entire process.

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