Research Square

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Healthy orthorexia vs orthorexia nervosa: associations with body appreciation, functionality appreciation, intuitive eating and embodiment

Elly Anastasiades (e.loizou@nup.ac.cy)
Neapolis University https://orcid.org/0000-0002-8562-1177

Marios Argyrides
Neapolis University

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Abstract

Purpose

Current conceptualizations and measures of orthorexia nervosa may not be accurately distinguishing between the healthy and pathological pursuit of a healthy diet, leading to very high prevalence rates and risking the pathologizing and stigmatizing of healthy eating more generally. Recent research has identified healthy orthorexia as a novel construct conceptually distinct from orthorexia nervosa, which represents the non-pathological pursuit of a healthy diet. In light of the strong body of evidence supporting the role of positive body image in eating behavior, the current study aimed to examine the associations between healthy orthorexia, orthorexia nervosa, intuitive eating and indices of positive body image.

Methods

The current study employed a cross-sectional design. An online community sample (N = 835; 62% women; M_{age} = 40.2) completed self-report questionnaires including the Teruel Orthorexia Scale, as well as measures of body appreciation, functionality appreciation, intuitive eating and embodiment.

Results

Indices of positive body image were found to be significantly positively associated with healthy orthorexia and inversely associated with orthorexia nervosa. A hierarchical multiple regression analysis found that indices of body image were uniquely associated with 13.3% of the variance of healthy orthorexia above and beyond that accounted for by orthorexia nervosa. Intuitive eating moderated the relationship between healthy orthorexia and orthorexia nervosa.

Conclusion

The findings of this study provide support for intuitive eating and indices of positive body image as worthy of further exploration as important factors which distinguish between healthy orthorexia and orthorexia nervosa.

What Is Already Known On This Subject?

To date, research on the conceptualization and classification of orthorexia nervosa has primarily taken a pathology-driven approach. While such research has been vital to our understanding of orthorexia nervosa, researchers have noted that it has posed the risk of pathologizing and stigmatizing healthy eating more generally. Recent work has identified healthy orthorexia as an eating behavior that is conceptually distinct from orthorexia nervosa, which represents the non-pathological pursuit of a healthy diet. This conceptualization offers researchers a promising new avenue to explore factors that distinguish the non-pathological pursuit of a healthy diet from orthorexia nervosa, which may act as protective factors.

What This Study Adds?

This study makes a unique contribution to the literature by identifying unique associations between intuitive eating, indices of positive body image and healthy orthorexia, as compared to orthorexia nervosa. These findings provide support for intuitive eating, body appreciation, functionality appreciation and embodiment as worthy of further exploration as potentially important factors which distinguish between healthy orthorexia and orthorexia nervosa. Further exploring these relationships using appropriate measures and longitudinal designs could prove worthwhile in guiding appropriate intervention aimed at averting or attenuating the adverse impact of orthorexic eating behavior.

Introduction

Orthorexia nervosa is a term initially coined by Bratman [1] to describe the pursuit of healthy eating that intensifies and becomes an excessive, pathological preoccupation with consuming only foods that are “healthy” and avoiding those that

are “unhealthy.” Since, there has been much debate surrounding the conceptualization of orthorexia nervosa, and there remains no official consensus definition or diagnostic criteria to date [2–6]. Recent work has raised concerns about the over-diagnosis of orthorexia nervosa, risking the pathologizing and stigmatizing of followers of healthy diets, regardless of the presence of pathology [7–9]. For instance, as an eating disorder, orthorexia nervosa would be expected to have prevalence rates similar to other eating disorders, which are no higher than 2% [10]. However, the literature has documented prevalence estimates for orthorexia nervosa ranging up to 88.7% in non-clinical populations [3]. Additionally individuals who are vegan, vegetarian, or simply attempt to avoid processed foods are often being labeled as having orthorexia nervosa [7, 8, 11–13]. This is concerning considering the extensive body of evidence supporting that a healthy diet can enhance physical and psychological wellbeing (see e.g., [14–17]).

The pathology-driven approach to the study of orthorexia nervosa has left unstudied the normal, flexible, health promoting pursuit of a diet with a preference for healthy foods over unhealthy foods. Commonly used measures of orthorexia nervosa may not be accurately distinguishing between the pursuit of a healthy diet which is pathological and that which is not pathological [7, 13, 18, 19]. Although various measures have been developed, [13, 19], the Teruel Orthorexia Scale (TOS) [20] is perhaps the only measure which makes the distinction between the pursuit of a healthy diet which is beneficial (healthy orthorexia) and that which is pathological (orthorexia nervosa). Based on the TOS, both healthy orthorexia and orthorexia nervosa both reflect eating behaviors in which an individual dichotomizes foods into “healthy” and “unhealthy” categories. Healthy orthorexia, however, is thought to reflect the pursuit of healthy foods in a way which is health enhancing and non-pathological, which is in line with Bratman’s [7] argument that healthy diets can indeed be followed in the absence of pathology.

Studies using the TOS have found significant positive associations between the two constructs, and there is preliminary evidence to suggest that they have some conceptual overlap [20–22]. There is also increasing evidence supporting the two as conceptually distinct eating styles. Healthy orthorexia has been found to be positively associated with indices of wellbeing and inversely associated with negative affect, and orthorexia nervosa has been found to be inversely associated with indices of wellbeing and positively associated with indices of negative affect [20, 21, 23, 24]. Additionally, it has been proposed that the motives that drive healthy orthorexia and orthorexia nervosa may differ with the former being driven by health-concerns, and the latter by weight control [23]. Recent work using the TOS to examine the typology of individuals based on orthorexic eating behaviors provides further support that healthy orthorexia diverges from orthorexia nervosa, with individuals with high healthy orthorexia and low orthorexia nervosa scoring higher on measures of self-esteem and intuitive eating, and those with low healthy orthorexia and high orthorexia nervosa scoring significantly higher on measures of anxiety, and depressive symptoms [22].

The surge in research on orthorexia nervosa has been paralleled by an increased interest in adaptive eating behaviors [25]. Perhaps the most researched is intuitive eating, which refers to a set of flexible eating behaviors that are regulated by internal physiological cues rather than external emotional and situational cues [26, 27]. Individuals who eat intuitively trust and rely on their internal hunger and satiety cues to guide their eating behaviour, avoid labelling foods as forbidden, eat for physical reasons rather than as a way of coping with emotional distress, and make food choices which support or enhance their body’s functioning [28]. Intuitive eating has been found to be associated with lower levels of binge eating, drive for thinness, situational eating, emotional eating, food anxieties, food preoccupation and rigid dietary constraint [29–37]. Furthermore, there is a strong body of evidence to support that indices of positive body image, namely, body appreciation, functionality appreciation and embodiment, are psychological resources that enhance intuitive eating by promoting the awareness of, and appreciation for the functions of the body [38–46]. Intervention programs aimed at the treatment and prevention of a wide variety of eating disorders are increasingly focusing on the enhancement of intuitive eating and positive body image resources, with encouraging results [36, 40, 44, 47].

Given the significant body of work supporting strong links between constructs of positive body image and eating behaviors, it is unsurprising that researchers are beginning to show interest in the relationships between these constructs and orthorexia nervosa. However, these studies are few, and have had mixed findings, providing evidence for both positive [48]

and negative associations [49, 50] between orthorexia nervosa and indices of positive body image. In addition, most of these studies used questionnaires that may have classed both the pathological and non-pathological pursuit of a healthy diet as orthorexia nervosa [9]. To the best of our knowledge, only one study has used the TOS to examine the links between healthy orthorexia and intuitive eating which found that individuals with higher healthy orthorexia and lower orthorexia nervosa are more likely to eat intuitively than those with lower healthy orthorexia and higher orthorexia nervosa [22].

The Present Study

In light of the commentary above, the conceptualization of healthy orthorexia offered by Barrada and Roncero [20] offers researchers a promising new avenue for exploring the pursuit of a healthy diet which is not pathological, and for differentiating this way of eating from orthorexia nervosa. Furthermore, intuitive eating, body appreciation, functionality appreciation and embodiment are constructs which seem to play an important role in promoting eating behaviors that are adaptive and health enhancing, and reducing those which are pathological [36, 40, 44, 47]. Exploring the associations between these constructs in relation to healthy orthorexia and orthorexia nervosa could therefore ascertain whether healthy orthorexia uniquely is associated with more internally-driven, adaptive eating behaviors in comparison to orthorexia nervosa, and therefore identify whether these constructs are worthy of further exploration as possible protective factors against the non-pathological pursuit of a diet progressing into orthorexia nervosa.

With this in mind, the present study aimed to explore the associations between healthy orthorexia, orthorexia nervosa, intuitive eating and constructs of positive body image (body appreciation, functionality appreciation and embodiment). Based on previous findings [20, 21, 24], we hypothesized that healthy orthorexia would be positively associated with orthorexia nervosa, and that intuitive eating and indices of positive body image would be positively associated with healthy orthorexia, and inversely associated with orthorexia nervosa. Furthermore, since healthy orthorexia is proposed as an eating behavior which is distinct from orthorexia nervosa in that it is non-pathological and is positively associated with enhanced health and wellbeing [20, 21], we hypothesized that intuitive eating and indices of positive body image would be uniquely associated with healthy orthorexia after controlling for the contribution made by orthorexia nervosa. Finally, in light of the evidence supporting intuitive eating and indices of positive body image as promoting adaptive eating behaviors and reducing pathological eating behaviors [36, 40, 44, 47], we hypothesized that the relationship between healthy orthorexia and orthorexia nervosa would be moderated by intuitive eating and indices of positive body image.

Method

Participants

The data set included responses from an online sample of 835 participants; 518 (62%) women and 317 (38%) men, aged 18–79 years (M_{age} = 40.24, *SD* = 14.45). Participants' Body Mass Index (BMI, calculated from self-reported height and weight, ranged from 14.71–64.90 kg/m^2 (*M* = 25.83, *SD* = 5.91). Thirty-seven participants (4.4%) were in the underweight category, 401 (48.0%) were in the normal weight category, 249 (29.8%) were in the overweight category, and 148 (17.7%) were in the obese category. Participants described their ethnicity as Greek Cypriot (*n* = 317; 38.0%), British (*n* = 233; 27.9%), Greek (*n* = 109; 13.1%), British Cypriot (*n* = 71; 8.5%), and Other (*n* = 105; 12.5%). Sixty-three (7.5%) participants reported low socioeconomic status (SES), 701 (83.9%) middle SES, and 63 (7.5%) high SES.

Measures

The following measures were administered to all participants. All measures administered were in the English language.

Demographics

All participants answered a questionnaire in which they were asked to report their sex, age, ethnicity, height, weight, and socio-economic status.

Healthy Orthorexia and Orthorexia Nervosa

The Teruel Orthorexia Scale (TOS) [20] comprises 17 items and two subscales; Orthorexia Nervosa (ON) and Healthy Orthorexia (HO). Items are scored on a 4-point scale ranging from 0 = *strongly disagree* to 3 = *strongly agree*. The TOS shows good internal consistency for both subscales; ON (α = .81 – .90), and HO (α = .80 – .87), and re-test reliability over 18 months, with $r > .70$ [20]. Both subscales demonstrated good internal consistency for the present sample with alpha values of .83 for ON, and .84 for HO.

Body Appreciation

The Body Appreciation Scale-2 (BAS-2) [45] comprises 10 items that are rated on a 5-point scale ranging from 1 = *never* to 5 = *always*. The measure has favorable psychometric properties, conforming to a unidimensional structure with strong internal consistency (α = .93 – .96), and test-retest reliability over a 3-week period ($r = .90$) [45]. Cronbach's alpha for the current sample was .95, demonstrating excellent internal consistency.

Functionality Appreciation

The Functionality Appreciation Scale (FAS) [51] comprises 7 items that are rated on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Psychometric testing of the FAS using exploratory and factor analysis using a U.S. adult sample, Alleva et al. [51] have shown the measure to have adequate internal consistency (α = .86 – .91), and test-retest reliability over a 3-week period ($r = .81$ for women, and $r = .74$ for men). The FAS demonstrated excellent internal consistency for the current sample (α = .90).

Intuitive Eating

The Intuitive Eating Scale-2 (IES-2) [28] contains 23 items and four subscales: Unconditional Permission to Eat, Eating for Physical rather than Emotional Reasons, Reliance on Hunger and Satiety Cues, and Body-Food Choice Congruence. Items are rated on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The IES-2 has favorable psychometric properties, demonstrating internal consistency for women (α = .87) and men (α = .89) [28], and 3-week test-retest reliability for both women ($r = .99$) and men ($r = .82$). For the current sample, the scale was found to be internally consistent; α = .87.

Embodiment

The Experience of Embodiment Scale (EES) [52] comprises six subscales: Positive Body Connection and Comfort, Body Unencumbered Adjustment, Agency and Functionality, Experience and Expression of Sexual Desire, Attuned Self-Care, and Resisting Objectification. Items are rated on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The EES has demonstrated favorable internal consistency, in samples of adult women, both for the total scale (α = .94) and for each of the subscales (α = .71–.90) [52], and test-retest reliability over a 3-month period ($r = .93$). The EES demonstrated excellent internal consistency for the current sample (α = .93).

Procedure

After receiving ethical approval, an online questionnaire was generated using Qualtrics XM (www.qualtrics.com). Participants were recruited via advertisements placed on social media websites, supplemented through the use of a snowball sampling method. The study was advertised as a study about "eating behaviors and body image", and all participants were provided with further information regarding the study requirements. Participants were limited to those over 18 years of age. Participation was voluntary and without remuneration. All participants were asked to provide digital informed consent before completing the online questionnaire with the measures listed above, presented in a pre-randomized order (automatically generated by Qualtrics) to control for order effects, and attention checks were placed at two points in the questionnaire. Qualtrics was set up to only record complete responses.

Data Analysis

Prior to the analysis, a multilayer screening method was employed to ensure data quality based recommendations for using online samples for eating disorder research [53, 54]. Internet Protocol (IP) addresses were checked to ensure that no participant answered the questionnaire more than once, response times were checked to identify any responses that were completed in under seven minutes, age, height and weight responses were checked improbable/nonsensical values, and any failed attention checks were identified. These checks identified two participants who entered nonsensical height/weight values, and six participants who failed attention checks; these were subsequently removed from the initial sample of N = 850, reducing the sample to N = 842.

The data analysis was carried out using SPSS version 28 (IBM SPSS Inc., Chicago, Illinois, USA). Missing data were managed using listwise deletion. Data were first examined for normality, linearity and homoscedasticity. A moderate positive skew was uncovered for BMI; no other substantial violations were identified. A log transformation was carried out on BMI, which resulted in it being normally distributed (skewness = .64 and kurtosis = .92). Next, seven outliers were identified and removed using Mahalanobi's distance leaving a final sample of N = 835.

A Pearson's product moment correlation analysis was used to examine the intercorrelations of the study variables, with r values of ≤ .10 being considered to have a small effect, ~ .30, a moderate effect, and ~ .50, a strong effect (based on Cohen, 1992). Following this, a hierarchical multiple linear regression analysis was conducted to assess whether (a) intuitive eating and positive body image indices were associated with a unique variance of healthy orthorexia after controlling for orthorexia nervosa (b) whether intuitive eating and indices of positive body image moderated the association between healthy orthorexia and orthorexia nervosa. A four-step analysis was performed, with healthy orthorexia as the criterion variable; age, BMI and sex were entered at step 1 as control variables, orthorexia nervosa was entered at step 2, intuitive eating and the indices of positive body image (body appreciation, functionality appreciation and embodiment) were entered at step 3, and interaction terms between orthorexia nervosa and intuitive eating and the positive body indices were entered at step 4. A statistically significant increment in R^2 at step 3 would indicate unique associations of intuitive eating and indices of positive body image over and above orthorexia nervosa, and statistically significant increment in R^2 at step 4 would indicate the unique contribution of interaction effects. The p value was set at .01 in order to control for Type I error. All variables were centered at the mean, with the exception of sex, which was coded as 0 = *male* and 1 = *female*. The interaction terms were calculated from the centered variables. Hayes' PROCESS macro was used to examine any significant interactions, and simple slopes (at one SD above and one SD below the mean) were generated.

Results

Intercorrelations

As can be seen in Table 1, Pearson correlation coefficients indicate a significant positive association between healthy orthorexia and orthorexia nervosa, with a moderate effect size. In addition, intuitive eating and all indices of positive body image were significantly positively associated with healthy orthorexia, with small effect sizes. Conversely, intuitive eating and all indices of positive body image were inversely associated with orthorexia nervosa, and had small to moderate effect sizes.

Associations between study variables

As can be seen in Table 2, the final model for the hierarchical multiple regression analysis was significant. Results of step 2 showed that orthorexia nervosa was associated with 23% of the variance of healthy orthorexia, $F(4, 830) = 67.78$, $p < .001$, $R^2_{adj} = .24$, $\Delta R^2 = .23$, after controlling for sex, age and BMI ($f^2 = 0.30$). Adding intuitive eating and the indices of positive body image at step 3 accounted for an additional 13% of the variance of healthy orthorexia, $F(8, 830) = 63.32$, $p < .001$, $R^2_{adj} = .39$, $\Delta R^2 = .13$, $f^2 = 0.15$. The interaction terms added at step 4 were associated with an additional 2% of the variance of healthy orthorexia, $F(12, 830) = 45.65$, $p < .001$, $R^2_{adj} = .39$, $\Delta R^2 = .02$, $f^2 = 0.02$. In the final model, orthorexia nervosa,

functionality appreciation and intuitive eating were independently and uniquely associated with healthy orthorexia, with intuitive eating having the second strongest association (after orthorexia nervosa). A significant interaction effect was observed for orthorexia nervosa and intuitive eating, but not for any of the other interaction terms.

Moderation effects

As can be seen in Fig. 1, a moderation model was computed to better examine how intuitive eating moderates the relationship between orthorexia nervosa and healthy orthorexia. The input variable was orthorexia nervosa, the outcome variable was healthy orthorexia, and the moderator was intuitive eating. Sex, age and BMI, as well as the other variables not tested in the moderation model were entered as covariates. The conditional effect was significant for those with high (B = 0.83, t = 18.32, p = .000), medium (B = 0.68, t = 19.87, p = .000), and low (B = 0.52, t = 11.54, p = .000) levels of intuitive eating.

Discussion

Recent work has identified healthy orthorexia as a construct distinct from orthorexia nervosa, which represents the non-pathological pursuit of a healthy diet [20]. To our knowledge, no study has explored the relationships between intuitive eating, indices of positive body image, healthy orthorexia and orthorexia nervosa using the TOS. To address this gap in the literature, the current study aimed to examine the associations between healthy orthorexia, orthorexia nervosa, intuitive eating, body appreciation, functionality appreciation and embodiment. Overall our results provide new insight into indices of positive body image that might be important to consider in future research on orthorexic eating behavior.

Consistent with previous research [20–22], healthy orthorexia and orthorexia nervosa were significantly positively correlated. In addition, orthorexia nervosa was associated with 23% of the variance of healthy orthorexia. These results were expected given that both constructs reflect the pursuit of “healthy” foods and the avoidance of “unhealthy” foods [20]. Further to this, and also as expected, the finding that intuitive eating, body appreciation, body functionality and embodiment were all positively associated with healthy orthorexia and negatively associated with orthorexia nervosa is consistent with those of a handful of other studies that have examined similar associations of healthy orthorexia and orthorexia nervosa with other indices of wellbeing [20, 21, 23, 24].

It is important to note that our findings stand in contrast to those of He et al. [48], who found positive associations between indices of positive body image and orthorexia nervosa. One way of explaining this discrepancy is by considering that the instrument used in He et al.’s study may have identified healthy orthorexia behaviors and not orthorexia nervosa. Our findings are in line with other work using the TOS, which identified higher levels of intuitive eating in individuals with high levels of healthy orthorexia and low levels of orthorexia nervosa [18]. The measurement of orthorexia nervosa remains fraught with difficulties, and the development of psychometrically sound measures is critical to conducting quality research.

Intuitive eating and indices of positive body image were found to be uniquely associated with healthy orthorexia after the association with orthorexia nervosa was accounted for. This finding suggests that healthy orthorexia is more than just the absence of the pathological aspects of orthorexia nervosa, in that it is uniquely associated with factors that are closely related to enhanced wellbeing and adaptive eating behaviors. This finding is in line with previous work which supports healthy orthorexia as distinct from orthorexia nervosa [21, 22]. More specifically, functionality appreciation and intuitive eating were uniquely associated with healthy orthorexia, whereas body appreciation and embodiment were not. Functionality appreciation and intuitive eating share a common emphasis on the functions of the body; trusting and attending to the body’s cues as a sign of what it requires [44]. Therefore our findings suggest individuals who pay more attention to their bodily functions have higher levels of healthy orthorexia. These findings are in line with Depa et al.’s [23] argument that healthy orthorexia is motivated by the drive for health and wellbeing, in that a focus on enhancing health and wellbeing inevitably involves a closer attention to bodily functioning. An individual who follows a healthy diet due to health and weight concerns, however, is more likely to focus on their appearance and therefore also more likely to ignore to ignore the body’s cues in favor of changing/maintaining this. Based on these findings it seems worthwhile to further explore the relationships

between different constructs of body image and orthorexic eating behaviors. Such research may provide further insights into the motives that underlie these behaviors.

Intuitive eating was the only factor found to have a significant moderation effect on the relationship between healthy orthorexia and orthorexia nervosa. Closer examination of this interaction revealed that higher levels of intuitive eating are associated with higher levels of healthy orthorexia in relation to orthorexia nervosa. Based on these findings seems that maintaining flexibility when it comes to following food rules is important in maintaining a healthy relationship with diet. Even though the effect size of the interaction was small ($\Delta R^2 = .02$), these findings suggest that intuitive eating could be an important factor worthy of further exploration in this context. Given the substantial body of evidence supporting body appreciation, functionality appreciation and embodiment as playing an important role in protecting against the development of eating disorders, [36, 40, 44, 47], it is surprising that these did not emerge as significant moderators. These findings might be explained by considering the acceptance model of intuitive eating [56], which identified body appreciation and functionality appreciation as constructs which promote intuitive eating. Similarly, positive embodiment is thought to promote adaptive eating behaviors including responsiveness to hunger cues and eating for physical reasons, which are important components of intuitive eating. [57]. Based on these findings, it is possible that body appreciation, functionality appreciation and embodiment may play a role in healthy eating behaviors indirectly, through their effect on intuitive eating.

Strength & Limits

This study benefitted from several strengths. To the best of our knowledge, it was the first study to explore these indices of positive body image using the TOS [20]. In addition, the sample size was large, and all of the measures used in the study were psychometrically robust. However, our findings should be considered in light of various limitations. The use of an online convenience sample makes it inaccurate to claim that the sample is representative of the broader population. In addition, the correlational nature of the study is also somewhat limiting and does not allow for causal conclusions to be drawn. For instance, the relationships between the variables used in this study may be bi-directional and complex. In addition, this study did not provide insight into associations with latent factors of intuitive eating and embodiment. Similarly, although the variables used in this study were chosen based on a comprehensive literature review, there may be other constructs which play an important role in orthorexic eating behaviors which were not included here.

Finally, it is important to note that although overall our findings provide support for healthy orthorexia as distinct from orthorexia nervosa, they provide no insight into how orthorexia nervosa develops over time; i.e., is healthy orthorexia the non-pathological precursor to orthorexia nervosa as described by Bratman [7] in his conceptualization? Likewise, our findings do not provide insight into the role of positive body image and intuitive eating in the development of orthorexia nervosa. Prospective studies are needed to better understand the trajectory of orthorexia nervosa, as well as the role that positive body image and intuitive eating plays in this.

Declarations

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Competing Interests

The authors have no relevant financial or non-financial interests to disclose.

Author Contributions

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Elly Anastasiades and Marios Argyrides. The first draft of the manuscript was written by Elly Anastasiades and

Marios Argyrides and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics Approval

This study was performed in line with the principles of the Declaration of Helsinki. Ethical approval for the study was granted by the Cyprus National Bioethics Committee (ΕΕΒΚ ΕΠ 2021.01.69).

Consent to Participate

Informed consent was obtained from all individual participants included in the study.

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Tables

Table 1 *Means, standard deviations and intercorrelations for study variables*

	M	*SD*	1	2	3	4	5	6	7	8
1. Healthy Orthorexia	14.57	4.78	–							
2. Orthorexia Nervosa	7.06	4.25	.46*	–						
3. Body Appreciation	36.26	8.72	.19*	−.17*	–					
4. Functionality Appreciation	28.72	4.50	.22*	−.15*	.65*	–				
5. Intuitive Eating	13.76	2.00	.14*	−.36*	.54*	.45*	–			
6. Embodiment	128.46	21.50	.12*	−.37*	.80*	.63*	.62*	–		
7. Age	40.27	14.43	.03	−.08	−.12*	−.12*	.00	.05	–	
8. BMI	25.79	5.75	−.12*	.02	−.29*	−.18*	−.30*	−.19*	.28*	–

Note. $N = 835$. *$p < .01$

Table 2 *Hierarchical multiple linear regression models for healthy orthorexia*

	Step 1			Step 2			Step 3			Step 4		
Variable	*B* (SE)	β	*t*(833)	*B* (SE)	β	*t*(833)	*B* (SE)	β	*t*(833)	*B* (SE)	β	*t*(833)
Gender	.73 (.35)	.07	2.07	.31 (.31)	.03	1.01	.99 (.29)	.10	3.42*	1.13 (.29)	.11	3.91*
Age	.02 (.01)	.07	1.90	.04 (.01)	.11	3.52*	.03 (.01)	.10	3.28*	.03 (.01)	.09	3.08*
BMI	– 2.66 (.88)	−.11	– 3.20*	– 3.48 (.77)	−.15	– 4.49*	−.23(.77)	– 0.1	−0.30	−.52 (.76)	−.02	−.69
Orthorexia Nervosa				.54 (.03)	.48	15.71*	.70 (.04)	.62	19.99*	.70 (.04)	.62	20.25*
Body Appreciation							−.00 (.03)	.00	−0.05	−.01 (.03)	−.02	−0.40
Functionality Appreciation							.16 (.04)	.15	3.93*	.16 (.04)	.15	3.86*
Intuitive Eating							.53 (.09)	.22	5.85*	.53 (.09)	.22	6.02*
Experience of Embodiment							.03 (.01)	.13	2.35	.03 (.01)	.13	2.43
ON x BA										.01 (.01)	.09	1.83
ON x FA										−.01 (.01)	−.04	−1.11
ON x IE										.06 (.02)	.11	3.06*
ON x EE										.00 (.00)	−.01	−0.25

Note. $N = 835$. *$p < .01$.

Abbreviations: BMI = body mass index, ON = orthorexia nervosa, BA = body appreciation, FA = functionality appreciation, IE = intuitive eating, EES = experience of embodiment.

Figures

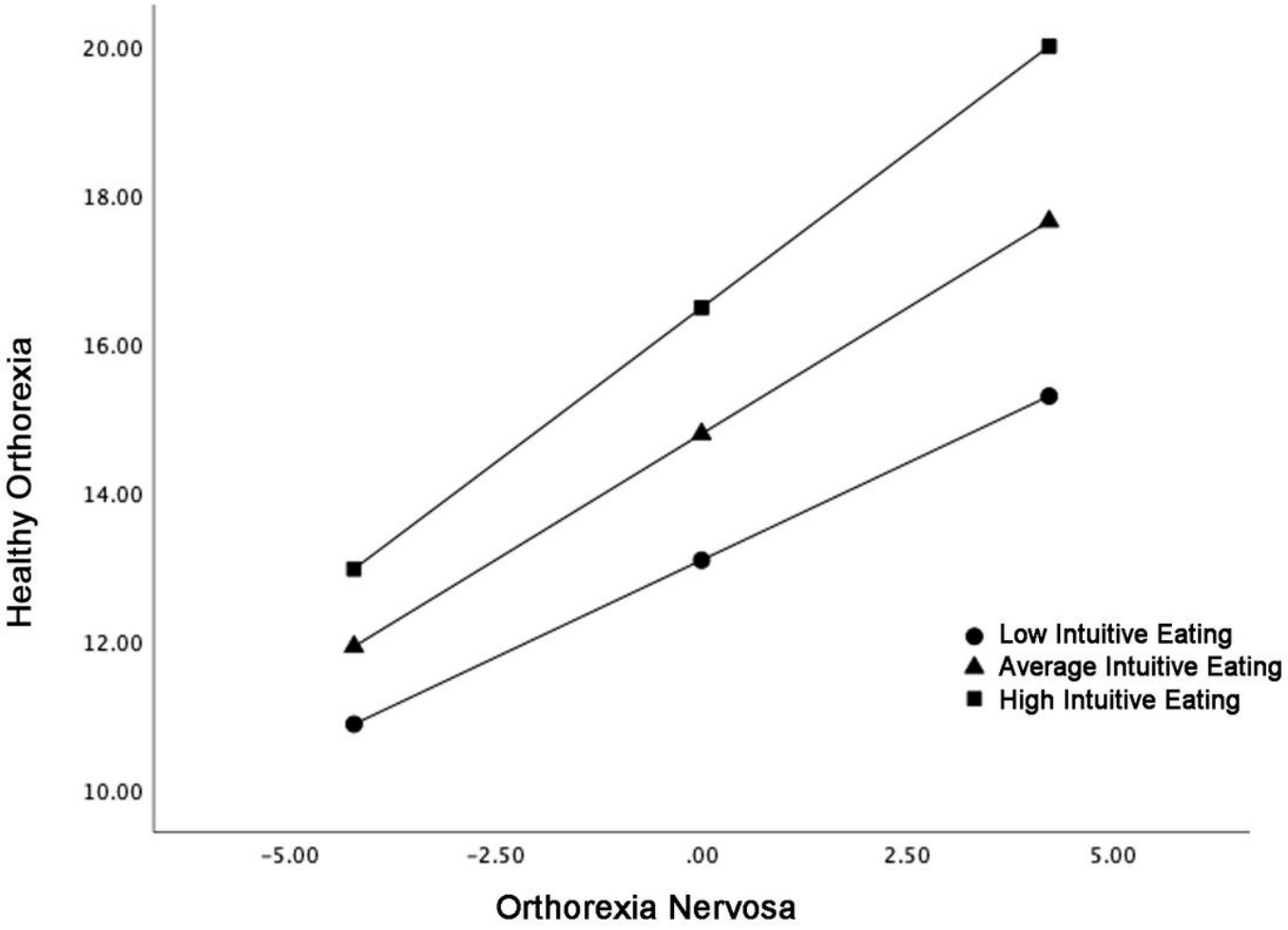

Figure 1

Moderation effect of intuitive eating (IE) on healthy orthorexia and orthorexia nervosa