

Orthorexia Nervosa in Nutrition Students: Exploratory Cross-sectional Study on Associated Psychological Factors

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RESUMEN

INTRODUCCIÓN: La ortorexia nerviosa (ON) es un trastorno alimentario emergente caracterizado por una preocupación obsesiva por la alimentación saludable. Los estudiantes de Nutrición podrían estar en mayor riesgo debido a influencias psicológicas, educativas, sociales y familiares.

OBJETIVO: Explorar la asociación entre el riesgo de ON y variables relacionadas con trastornos del ánimo, factores educativos, familiares y sociales, con el fin de ampliar la comprensión de esta condición.

MATERIALES Y MÉTODOS: Se realizó un estudio descriptivo de corte transversal en estudiantes de Nutrición y Dietética, quienes reportaron nivel educacional, edad, sexo, peso, talla, establecimiento educacional de origen, frecuencia de actividad física semanal, y el número de personas con quienes conviven. Además, se aplicaron los cuestionarios ORTO-11-ES, DASS-21 y FAD-FG.

RESULTADOS: Se reclutaron 99 participantes, de los cuales un 24,2% presentó riesgo de ON. No se encontró asociación con actividad extracurricular ni con disfuncionalidad familiar. Se observaron asociaciones leves con sexo femenino, presencia de depresión y ansiedad, mientras que el estrés fue la única variable cercana a significancia.

CONCLUSIONES: En esta muestra, el riesgo de ON no se asoció significativamente con síntomas de depresión, ansiedad, estrés ni con disfunción familiar. Estos hallazgos deben interpretarse con cautela, considerando el tamaño muestral, el uso de un instrumento de tamizaje para la evaluación de ON y el diseño transversal del estudio.

PALABRAS CLAVES: Ortorexia nerviosa, depresión, ansiedad, estrés, funcionamiento familiar

ABSTRACT

INTRODUCTION: Orthorexia nervosa (ON) is an emerging eating disorder characterized by an obsessive preoccupation with healthy eating. Nutrition students may be at particular risk due to psychological, educational, social, and familial influences.

TO AIM: This study explores the association between ON risk and mood disorders, academic, family, and social variables to enhance our understanding of ON.

MATERIALS AND METHODS: A descriptive cross-sectional study was carried out on Nutrition and Dietetics students who responded to their level of education, age, sex, weight, height, educational establishment of origin, frequency of weekly physical activity, and number of people with whom they live. In addition, the ORTO-11-ES, DASS-21, and FAD-FG.

RESULTS: We were able to recruit 99 participants, presenting a 24.2% risk of orthorexia nervosa, finding a lower association with extracurricular activity and family dysfunctionality. Regarding the other categories, female sex, presence of depression, and anxiety were found to be slightly associated with the risk of ON, with stress being the only variable close to a significant association.

CONCLUSIONS: In this sample, ON risk was not significantly associated with symptoms of depression, anxiety, stress, or family dysfunction. These findings should be interpreted with caution due to the sample size, the use of a screening instrument for ON, and the cross-sectional design.

KEYWORDS: Orthorexia nervosa, depression, anxiety, stress, family functioning

INTRODUCTION

Orthorexia nervosa (ON) describes a pathological preoccupation with healthy eating, characterized by rigid dietary rules and emotional distress when these self-imposed standards are violated (1–3). Although ON has been increasingly studied, its conceptualization remains controversial, as it has been proposed as a precursor of anorexia nervosa, a variant of obsessive–compulsive disorder, or a culturally shaped behavioral pattern rather than a distinct eating disorder (4–6). In this context, previous research has suggested that ON may be influenced not only by individual psychopathology but also by environmental and contextual factors. However, much of the existing literature has approached ON primarily from an individual-level perspective, overlooking the potential role of academic, social, and educational contexts in shaping these behaviors (7). This gap is particularly relevant in populations with high exposure to nutrition-related knowledge.

Nutrition and dietetics students represent a population of special interest, as they are progressively exposed to extensive disciplinary content on healthy eating and are subject to professional and social expectations regarding dietary practices and body composition (8,9). Evidence suggests that greater interest in nutrition and health-related information may be associated with higher levels of ON traits (10), and that ON prevalence tends to be higher among nutrition students compared to students from other academic disciplines (11). Despite this, it remains unclear whether ON risk in this population is primarily associated with psychological factors commonly linked to eating disorders—such as mood disturbances—or with family functioning, or whether it reflects a context-dependent phenomenon related to academic training and nutrition knowledge. Addressing this gap is particularly relevant in Latin American settings, where evidence remains scarce.

Therefore, the present study aimed to assess the association between orthorexia nervosa risk, mood-related symptoms (depression, anxiety, and stress), and family functioning in a sample of Chilean nutrition and dietetics students, under the assumption that ON-related behaviors may be more closely linked to contextual and educational factors than to underlying psychopathology.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted on Nutrition and Dietetics students from the Universidad Mayor (UM) - Temuco, Chile. Select Statistical Services[®] determined sample size with 95% confidence and a maximum 5% error. The recruitment of volunteers was carried out face-to-face in classrooms by level during the first and second weeks of the 2022 academic year, where all students had the same opportunity to participate. It is essential to mention that the data obtained and analyzed are part of a more extensive study in which the present sample is followed up longitudinally. The subjects who agreed to participate in the research acknowledged and signed the informed consent form and then responded anonymously to an instrument that considered the following variables: level of education, age, sex, weight, height, educational establishment of origin, frequency of weekly physical activity, number of people with whom they live and use of different social networks. With the data obtained, the body mass index was calculated using the Quetelet equation according to the guidelines of the World Health Organization (16). Finally, the Orthorexia 11 Spanish version (ORTHO-11-ES), Depression Anxiety Stress Scales (DASS-21), and Subscale General Functioning Family Assessment Device (FAD-FG) instruments were used to measure the risk of orthorexia nervosa, depressive symptomatology, anxiety and stress and to classify healthy or unhealthy family functioning, respectively. **ORTO-11-ES:** The ORTHO-11-ES, validated in the South American population (17), aims to measure the risk of orthorexia nervosa. It constitutes a scale of 11 self-applied items with a minimum score of 1 and a maximum score of 4. The results achieved are classified according to the numerical value of the sum of the responses made by the research subjects, with a value equal to or greater than 25 classified as adverse ON risk. In contrast, a value of less than 25 points characterizes the subject as being at risk of suffering ON. **DASS - 21:** This instrument aims to determine symptoms of depression, anxiety, and stress and has been validated in Chilean university students (18). It is a self-administered scale with 21 items, with four response alternatives in Likert format, ranging from 0 ("does not describe anything that happened to me or that I felt during the week") to 3 ("Yes, this happened to me a lot, or almost always"), referring to the frequency of occurrence in the last week. It has three subscales (Depression, Anxiety, and Stress), including seven items each, which must be summed and classified according to specific cut-off points (19).

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FAD-GF It aims to rate healthy or unhealthy family functioning. This instrument correlates with the McMaster Family Assessment Device (FAD) (20) and was validated in a South American population (21). It consists of 12 items, with four response alternatives from "strongly agree" to "strongly disagree." Scores range from 1 (strongly agree) to 4 (strongly disagree) for the six statements reflecting healthy family functioning and vice versa for the other six statements reflecting unhealthy behaviour. The average is calculated with a mean score of 2.0 or higher, defined as unhealthy family functioning (22). **Statistical analysis** All data were transferred by the field researchers independently in a Microsoft Excel spreadsheet in a process of double typing. After comparing information from both spreadsheets to identify differences, the principal researcher worked on the organization and processing of the final database, which was then exported to GraphPad Prism v9.3.1 for Windows (San Diego, California, USA, www.graphpad.com) for statistical analysis for general background data, distributions, means, and standard deviations were calculated, for discrete quantitative variables and determination of their association with risk of orthorexia nervosa, odds ratios, and confidence intervals were calculated. Spearman's *r*, confidence interval, and significance level were calculated against the ORTO-11-ES score for continuous quantitative variables. Finally, all data were analyzed using principal component analysis (PCA). PCA was used as an exploratory multivariate technique to assess the joint contribution and clustering of orthorexia nervosa risk, psychological symptoms, and family functioning, providing an integrative view beyond bivariate associations. It is essential to mention that the work was developed under the guidelines of the Declaration of Helsinki and approved by resolution # J1-6888 of the Scientific Ethical Committee of the Universidad Mayor - Sede Temuco, Chile (Folio 0192).

RESULTS

Ninety-nine participants were recruited, representing 103% of the sample size calculated for the institution's Nutrition and Dietetics students. The majority of the volunteers were female (79.8%), from subsidized institutions (63.6%), and with a normal nutritional status (71.7%). Regarding career level, living together, extracurricular activity, and physical activity are homogeneous, except for living alone/with one person and heavy/severe activity. Concerning psychosocial variables, 44.4% of the sample presented family dysfunctionality, 39.4% depression, 48.5% anxiety, and 37.4% stress. On the other hand, the results of the ORTHO11 instrument showed that 24.2% of the respondents were at risk of ON (Table 1). Regarding the distribution by level, the most affected courses by level were second for ON risk (36.7%) and third for stress (47.7%), anxiety (66.7%), and depression (66.7%), respectively. Regarding family dysfunctionality, the second year also obtained the highest figures (57.9%), constituting, together with the third year, the most affected grades in these variables in the present sample.

When analyzing the primary variable according to academic level (Figure 1), as well as the psychological and family-related variables assessed (Figure 2), the phenomenon appears to manifest in a transversal manner. The scores indicate that it is not associated with the disciplinary knowledge corresponding to the students' academic year, nor with their current mental health status, nor with the reported family functioning. Regarding the relationship between these variables and the risk of orthorexia nervosa (Table 2), family dysfunction showed a low level of association (OR 1.08; 95% CI 0.42-2.63; $p > 0.999$). Similarly, the presence of depression (OR 1.42; 95% CI 0.55-3.51) and anxiety (OR 1.21; 95% CI 0.49-3.09) exhibited only slight and descriptive associations, with stress being the only variable approaching statistical significance (OR 2.51; 95% CI 1.00-6.63; $p = 0.057$). With respect to academic level, second-year students showed the highest proportion of ON risk (37%) (Table 3), representing one of the most affected groups in the sample. However, as with the previous measurements, this finding should be interpreted as descriptive only.

When comparing participants according to orthorexia nervosa (ON) risk, higher mean scores were observed for depression, anxiety, stress, and family dysfunction in the ON-risk group. However, none of these differences reached statistical significance (depression $p = 0.194$; anxiety $p = 0.854$; stress $p = 0.249$; family dysfunctionality $p = 0.561$) (Table 4). Consistently, no significant correlations were identified between ORTHO-11-ES scores and DASS21 dimensions when analyzed as continuous variables, either in participants with or without ON risk (Table 5). Although weak correlations were observed, their confidence intervals included null values, indicating the absence of a robust association.

To further explore the multivariate structure of the data, principal component analysis (Figure 3) showed distinct distributions of ON-related scores compared with psychological and family functioning measures. ORTHO11 variables remained directionally stable regardless of ON risk status, whereas DASS21 and FFG measures exhibited overlapping patterns. This multivariate approach supports the lack of a strong association between ON risk and mood-related symptoms or family functioning observed in the bivariate analyses, and should be interpreted as exploratory..

DISCUSSION

ON corresponds to a phenomenon first described by Steve Bratman at the end of the 20th century (1), with limited work published in the first twenty years since it was first defined. However, in the last five years, the number of publications on the subject has quadrupled. Numerous studies on its prevalence (23), diagnostic criteria (2), measurement instruments (24), and risk factors (25) have helped to understand the condition better. However, studies are still needed to clarify its nature. Along these lines, the present work arises, which derives from a previous pilot study that reported interesting descriptive associations (26) and which we sought to corroborate as a research group. In turn, and to ratify or rectify whether the present phenomenon derives from other disorders, the DASS21 and FFG instruments have been applied to assess the relationship between ON and depression, anxiety, stress, and family dysfunctionality.

Regarding our baseline results on the phenomenon's prevalence, the present study yielded an ON risk prevalence of 24.2%, similar to the previous report of 23.3% (26). This indicates that, even though the previous measurement was taken during social confinement due to the COVID-19 pandemic, the ORTHO11-ES instrument is reliable across contexts (online versus face-to-face). The high prevalence observed supports the need for early screening strategies within nutrition programs, positioning universities as key settings for the prevention and early identification of maladaptive eating behaviors. As for the figures obtained, international evidence is quite mixed: nutrition students in Germany (24.1%)(27), Brazil (72%)(28), Poland (26.6%)(29), and Jordan (31.8%)(30). This could stem from differential impacts of nutrition knowledge on nutrition students across countries, socio-demographic realities, or even the variety of instruments used. Regarding the reality of Spanish-speaking university students who do not study nutrition, the figures are lower and closer to our results (17.1% for Spaniards and 18.8% for Peruvians) (17,31). On the other hand, about Chilean university students, our initiatives are the only studies published at the national level. So, it is necessary to continue adding inputs to enable a more comprehensive analysis of how this phenomenon unfolds at the population level in Chile.

When analyzing the variables associated with the risk of ON, again the second year presents higher levels of risk of ON compared to the other courses (36.8%), replicating the results of our previous study (34.8%), thus reinforcing the idea that the theoretical topics presented at this level could be influencing the orthorexia behavior of their students as reported by King & Wengreen in 2021 in the US population, reporting that interest in nutrition content is associated with orthorexia behavior. This highlights the need to integrate educational strategies focused on promoting a balanced, flexible, and evidence-based approach to healthy eating within undergraduate curricula.

However, when the knowledge is acquired, this relationship is inversely proportional, which could explain the decreased risk of ON in courses above the second year. It is essential to mention that in the second year, the disciplinary contents of nutrition and dietetics begin to be integrated, since, in the first year, only subjects related to basic sciences are taken (32,33). As for other variables, the factors of coexistence, extracurricular activity, and establishment of origin do not show any association, and none of their categories show a notably higher percentage of risk of ON. In a discordant way, on this occasion, people with obesity did present a higher rate of risk of ON, as stated in a publication on the Italian population (34), which could be mediated by the social pressure faced by this population group, confirmed by the high levels of body dissatisfaction reported (50%)(9).

Regarding physical activity, the heavy category again yields higher ON risk levels, as with the previous publication. This aligns with what several publications postulate regarding the personal goals of high-performance athletes (35), with endurance athletes being more concerned about their diet than other athletes and the general population, due to competitive goals and the need for short-term results modulation. This does not necessarily suggest that attention should not be paid. On the contrary, it should be monitored to better characterize dietary restrictions for this purpose, separating them from the compulsive obsession that could lead to a more severe eating disorder, understanding that ON is found in a higher percentage of athletes who already have a diagnosis of this type compared to controls (36).

The main variables assessed (DASS21 and FFG), our study failed to establish a clear link to ON risk, either through comparisons of means, ORs for associations, or correlations using continuous quantitative values. This is demonstrated by the various results presented and further confirmed by the dimensions to which each result is pointed. This is at variance with international evidence in Lebanese adults, where depression and anxiety were positively correlated with ON (36), and in university students in Turkey, where reports indicated low self-esteem scores. Anxiety scores were high in participants who tended towards Orthorexia ($p < 0.001$) (37). This would allow us to propose that the risk of ON described in the present sample corresponds to a condition not necessarily associated with mood disturbances and family-level problems. Furthermore, the nutritional knowledge of our specific sample may constitute a more influential factor in this condition. Given that nutritional knowledge may act as a modulating factor in ON risk, these findings underscore the importance of training future nutritionists not only in dietary science, but also in fostering healthy, flexible, and non-obsessive relationships with food.

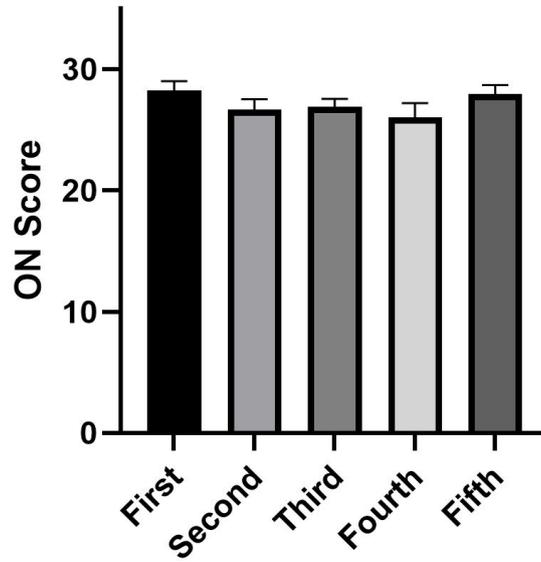


Figure 1. ORTHO-11 scores according to students' academic level. Data are presented as mean ± SEM. No significant differences were observed across academic levels.

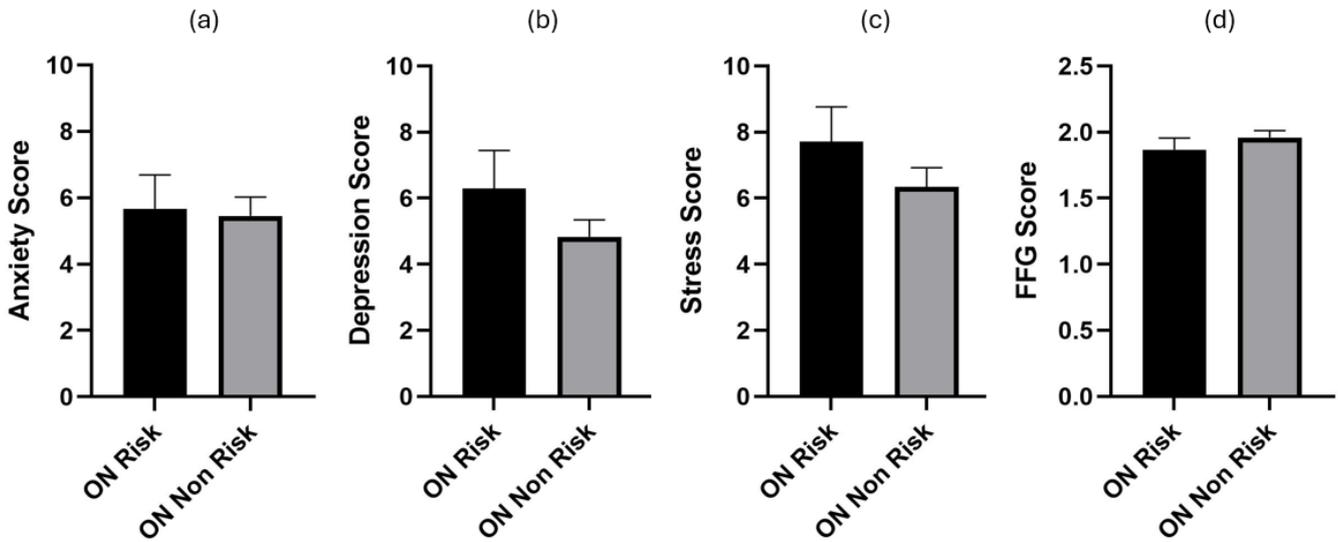


Figure 2. Comparison of psychological and familial factors between students at risk of orthorexia nervosa and those not at risk. (a) Anxiety scores, (b) Depression scores, (c) Stress scores, and (d) Family Functioning Global (FFG) scores. Data are presented as mean ± SEM.

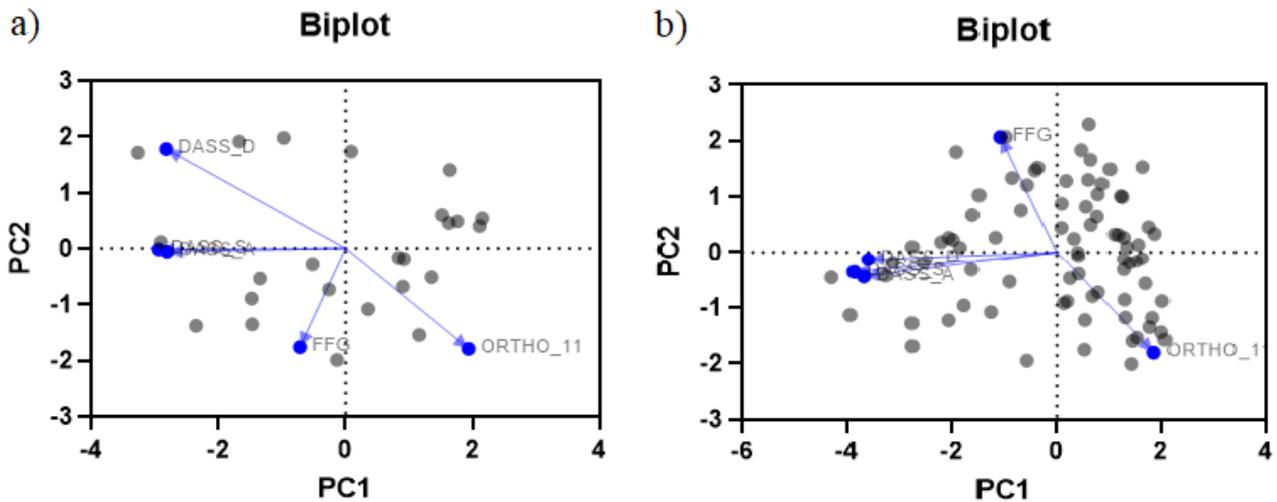


Figure 3 – Principal component analysis of DASS21, FFG, and ORTHO11 by Orthorexia Nervosa risk. In this figure, we proceeded to qualitatively analyze the applied instruments according to the risk of orthorexia nervosa presented by our research subjects. This allows us to identify the dimensions to which each assessed condition is oriented. This analysis establishes the spatial closeness or remoteness between stress, depression, anxiety, family functioning, and risk of Orthorexia. The grey boxes indicate the spatial location assigned to each input item, and the blue arrows indicate the direction and dimension identified for each instrument. (a) Orthorexia Nervosa Risk and (b) Orthorexia Nervosa Non-Risk.

Finally, concerning the limitations of this study, the sample and the data collection process do not present factors that need to be considered; on the contrary, they were remedied for the previous pilot publication. In the first instance, the goal was to reach the representative sample size for the population studied. Only the nutritional status variable was not measured directly, but through the personal report of each volunteer. However, our results may be consistent globally for only one nutrition school in the country, or at least for those receiving students with similar socioeconomic and demographic realities. Considering the social and educational inequalities in Chile, our data may not represent the reality of all nutrition students in the country, so it is necessary to replicate this type of initiative in a larger number of institutions of diverse geographic and economic origins. Results could show worse metrics, as has already been demonstrated in numerous publications that reflect how socioeconomic status affects health and mental health (38–40). Along these lines, it would be necessary to consider conducting prospective studies to confirm the relationship between the variables studied and the risk of generating ON. This is a significant effort, but as a research group, we are working to meet these requirements to understand this phenomenon better. From an institutional perspective, these findings provide empirical support for the development of mental health promotion and eating behavior surveillance programs within nutrition schools.

CONCLUSION

In this sample, ON risk was not significantly associated with symptoms of depression, anxiety, stress, or family dysfunction. These findings should be interpreted with caution due to the sample size, the use of a screening instrument for ON, and the cross-sectional design. Rather than indicating a definitive independence from psychosocial factors, the results suggest that ON-related behaviors in this context may be more closely linked to nutritional knowledge and health-oriented beliefs. Further studies using longitudinal designs and validated diagnostic approaches are needed to clarify these relationships

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AUTHORS CONTRIBUTION

Manuel Villa Valdés: Conceptualization, Methodology.
 Esteban Navarro Palma: Investigation, Data curation.
 Ignacio Restelli Jiménez: Investigation, Data curation.
 Danitza Vargas Díaz: Investigation, Data curation.
 Pablo Vergara-Barra: Validation, Visualization, Writing – original draft, Writing – review & editing.
 Marcell Leonario-Rodríguez: Supervision, Formal analysis, Writing – original draft, Writing – review & editing.

Table 1 – Sample characteristics. Values are expressed as mean (SD) for each category and a 95% confidence interval (CI 95%). Group comparisons were performed using Student's t-test and were considered statistically significant when $p < 0.05$. Differences were observed according to type of supplement consumed ($p = 0.009$) and meal preparation modality ($p = 0.001$). No other comparisons reached significance ($p > 0.05$).

Sex	First	Second	Third	Fourth	Fifth	Total
<i>Male</i>	5 (21.7)	5 (26.3)	5 (23.8)	0 (0)	5 (20.8)	20 (20.2)
<i>Female</i>	18 (78.3)	14 (73.7)	16 (76.2)	12 (100)	19 (79.2)	79 (79.8)
High school origin						
<i>Public School</i>	5 (21.7)	1 (5.3)	1 (4.8)	2 (16.7)	4 (16.7)	13 (13.1)
<i>Charter School</i>	17 (73.9)	15 (78.9)	13 (61.9)	7 (58.3)	11 (45.8)	63 (63.6)
<i>Private School</i>	1 (4.4)	3 (15.8)	7 (36.8)	3 (25)	9 (37.5)	23 (23.3)
Home cohabitation						
<i>Alone</i>	2 (8.7)	2 (10.5)	3 (14.3)	3 (25)	3 (12.5)	13 (13.1)
<i>One person</i>	4 (17.4)	4 (21.1)	3 (14.3)	0 (0)	4 (16.7)	15 (15.2)
<i>Two people</i>	5 (21.7)	5 (26.3)	6 (28.6)	4 (33.3)	3 (12.5)	23 (23.2)
<i>Three people</i>	4 (17.4)	4 (21.1)	6 (28.6)	3 (25)	7 (29.2)	24 (24.2)
<i>Four or more people</i>	8 (34.8)	4 (21.1)	3 (14.3)	2 (16.7)	7 (29.2)	24 (24.2)
Extracurricular activity						
<i>Yes</i>	13 (56.5)	12 (63.2)	13 (61.9)	3 (25)	10 (41.7)	51 (51.5)
<i>No</i>	10 (43.5)	7 (36.8)	8 (38.1)	9 (75)	14 (58.3)	48 (48.5)
Nutritional status						
<i>Underweight</i>	0 (0)	0 (0)	1 (4.8)	0 (0)	0 (0)	1 (1)
<i>Normal</i>	18 (72.3)	13 (68.4)	18 (85.7)	7 (58.3)	15 (62.5)	71 (71.7)
<i>Overweight</i>	5 (21.7)	5 (26.3)	1 (4.8)	3 (25)	8 (33.3)	22 (22.2)
<i>Obesity</i>	0 (0)	1 (5.3)	1 (4.8)	2 (16.7)	1 (4.2)	5 (5.1)
Physical activity						
<i>Sedentary</i>	4 (17.4)	1 (5.3)	8 (38.1)	5 (41.7)	8 (33.3)	26 (26.3)
<i>Light</i>	9 (39.1)	8 (42.2)	6 (28.6)	7 (58.3)	7 (29.2)	37 (37.4)
<i>Moderate</i>	8 (34.8)	8 (42.2)	5 (23.8)	0 (0)	8 (33.3)	29 (29.3)
<i>Heavy</i>	2 (8.7)	1 (5.3)	1 (4.8)	0 (0)	1 (4.2)	5 (5.1)
<i>Severe</i>	0 (0)	1 (5.3)	1 (4.8)	0 (0)	0 (0)	2 (2)

ORTHO-11-ES						
<i>ON Risk</i>	4 (17.4)	7 (36.8)	5 (23.8)	4 (33.3)	4 (16.7)	24 (24.2)
<i>ON Non-Risk</i>	19 (82.6)	12 (63.2)	16 (76.2)	8 (66.7)	20 (83.3)	75 (75.8)
FFG-12						
<i>Dysfunctionality</i>	12 (52.2)	11 (57.9)	10 (47.6)	2 (16.7)	9 (37.5)	44 (44.4)
<i>Non Dysfunctionality</i>	11 (47.8)	8 (42.1)	11 (52.4)	10 (83.3)	15 (62.5)	55 (55.6)
DASS-21						
<i>Depression</i>	7 (30.4)	9 (47.4)	12 (57.1)	6 (50)	5 (20.8)	39 (39.4)
<i>Non Depression</i>	16 (69.6)	10 (52.6)	9 (42.9)	6 (50)	19 (79.2)	60 (60.6)
<i>Anxiety</i>	11 (47.8)	10 (52.6)	14 (66.7)	7 (58.3)	8 (33.3)	48 (48.5)
<i>Non Anxiety</i>	12 (52.2)	9 (47.4)	7 (33.3)	5 (41.7)	16 (66.7)	51 (51.5)
<i>Stress</i>	5 (21.7)	9 (47.4)	10 (47.6)	5 (41.7)	8 (33.3)	37 (37.4)
<i>Non Stress</i>	18 (78.3)	10 (52.6)	11 (52.4)	7 (58.3)	16 (66.7)	62 (62.6)

Table 2 – Association between Orthorexia Nervosa Risk and dichotomous variables

	ON risk n (%)	ON non-risk n (%)	OR	CI95%	p-value
FFG-12					
<i>Dysfunctionality</i>	11 (25.0)	33 (75.0)	1.08	0,42 - 2,63	>0,999
<i>Non Dysfunctionality</i>	13 (23.6)	42 (76.4)	0.92	0,38 - 2,37	
DASS-21					
<i>Depression</i>	11 (28.2)	28 (71.8)	1.42	0,55 - 3,51	0.48
<i>Non Depression</i>	13 (21.7)	47 (78.3)	0.7	0,28 - 1,82	
<i>Anxiety</i>	13 (26.0)	37 (74.0)	1.21	0,49 - 3,09	0.815
<i>Non Anxiety</i>	11 (22.4)	38 (77.6)	0.82	0,32 - 2,00	
<i>Stress</i>	13 (35.1)	24 (64.9)	2.51	1,00 - 6,63	0.057
<i>Non Stress</i>	11 (17.7)	51 (82.3)	0.39	0,15 - 0,99	

Table 3 – Association between Orthorexia Nervosa Risk and non-dichotomous variables.

	ON risk n(%)	ON non-risk n(%)	x2	df	p value
Grade					
First	4 (17.4)	19 (82.6)	3,52	4	0.47
Second	7(36.8)	12 (63.2)			
Thirty	5(23.8)	16 (76.2)			
Fourth	4(33.3)	8(66.7)			
Fifth	4 (16.7)	20 (83.3)			
Nutritional status					
Underweight	0(0.0)	1(100.0)	4.29	3	0.23
Normal	15(21.1)	56(78.9)			
Overweight	6(27.3)	16(72.7)			
Obesity	3(60.0)	2(40.0)			
Physical activity					
Sedentary	7(26.9)	19(73.1)	1.56	4	0.82
Light	8(21.6)	29(78.4)			
Moderate	7(24.1)	22(75.9)			
Heavy	2(40.0)	3(60.0)			
Severe	0(0.0)	2(100.0)			

Table 4 - Distribution of means of DASS21 and FFG scores according to risk of Orthorexia Nervosa

	ON NON RISK Mean (SD)	ON RISK Mean (SD)	p-value
DASS_D	4.83 ± 4.5	6.29 ± 5.6	0.194
DASS_A	5.45 ± 4.9	5.67 ± 5.0	0.854
DASS_S	6.35 ± 5.0	7.71 ± 5.1	0.249
FFG	1.92 ± 0.4	1.98 ± 0.4	0.561

Table 5 - Correlation between DASS21/FFG scores and ORTHO11 results according to ON risk.

	DASS_D	DASS_A	DASS_S	FFG
ON RISK				
r	-0.20	-0.07	-0.06	0.30
95% CI	-0,56 to 0,23	-0,47 to 0,35	-0,46 to 0,35	-0,13 to 0,63
ON NON RISK				
r	-0.01	-0.09	-0.11	-0.20
95% CI	-0,24 to 0,22	-0,32 to 0,14	-0,33 to 0,12	-0,41 to 0,03

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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DATA AVAILABILITY STATEMENT

The datasets generated for this study are in Figshare® (<https://doi.org/10.6084/m9.figshare.21753875.v1>)

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