Relevance of orthorexic eating behavior in nutrition counseling and nutrition therapy

Results of a nationwide survey among German nutritionists

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Abstract

Orthorexic eating behavior is defined as a potentially pathological fixation on only eating food that is considered healthy according to subjective criteria. In the German population, approximately 1–7% are affected. However, it is still an open question whether these individuals make use of professional help.

Aim of the present study was to evaluate the relevance of orthorexic eating behavior in the field of nutrition counseling and nutrition therapy. For this purpose, 290 German nutritionists were surveyed regarding the number and sociodemographic characteristics of affected individuals that made use of nutrition counseling.

70% of the participants reported that individuals with orthorexic eating behavior consulted them in the past 12 months. Half of them displayed orthorexic eating behavior as a main feature. In the remaining cases, orthorexia was reported to occur in combination with other eating disorders or obsessive-compulsive disorders. For the treatment of orthorexic eating behavior, participants recommended psychotherapy and nutrition counseling.

Keywords: Orthorexia, orthorexic eating behavior, nutritionists, survey, eating disorder

Introduction

In recent years, orthorexic eating behavior has gained more attention in the general population as well as in the field of scientific research. However, this potentially new variant of disordered eating behavior is not classified in the ICD-10 nor in the DSM-5. Orthorexic eating behavior is defined as a fixation on only eating food considered healthy according to subjective criteria [1, 2]. In 1997, Steven Bratman, a US-American practitioner of alternative medicine, was the first to describe orthorexic eating behavior [3, 4]. The current state of research suggests that orthorexic eating behavior is associated with a cognitive fixation on healthy eating and rigid adherence to self-imposed nutritional rules [1, 5].

While the other eating disorders are mainly characterized by a focus on the consumed quantity of food, individuals with orthorexic eating behavior worry about the quality of their food [6]. The persistent search for the perfect and healthiest diet may lead to increasing restrictions in eating behavior because more and more food is considered unhealthy [4]. Hence, orthorexic eating behavior deviates progressively from general recommendations for healthy eating habits, for example from those published by the German Nutrition Society [7]. Recent studies suggest several similarities between anorexic and orthorexic eating behavior, which is why orthorexia is discussed as another variant of disordered eating behavior [8].

The prevalence of orthorexic eating behavior in the German general population is estimated to be between 1 and 7% [6, 9, 10]. However, the number of cases of clinical relevance is supposed to be much smaller. It is still an open

Citation
Barthels F, Lavendel S, Müller R, Pietrowsky R (2019) Relevance of orthorexic eating behavior in nutrition conseling and nutrition therapy. Results of a nationwide survey among German nutritionists. Ernahrungs Umschau 66(12): 236–241
This article is available online:
DOI: 10.4455/eu.2019.048

Peer-reviewed
Manuscript (original contribution) received: April 24, 2019
Revision accepted: June 25, 2019

	n	%
Education[a]		
apprenticeship dietitian	165	56.9
studies of dietetics	0	0
studies of nutritional science and home economics[b]	91	31.4
studies of nutritional sciences[b]	41	14.1
other[c]	24	8.3
Certificates and additional qualifications[a]		
nutrition consultant certified by VDOE	15	5.2
nutrition consultant certified by DGE	196	67.6
nutrition consultant certified by QUETHEB	26	9.0
nutrition therapist certified by QUETHEB	29	10.0
advanced training by VDD	67	23.1
nutrition consultant certified by VFED	13	4.5
other[d]	38	13.1

Tab. 1: **Education, certificates and additional qualifications of the surveyed nutritionists** (N = 290)
[a] multiple answers were allowed
[b] In Germany, *Ökotrophologie* (translated: nutritional science and home economics) and *Ernährungswissenschaft* (translated: nutritional sciences) are two different study programs.
[c] e.g. studies of nutrition medicine or health science, apprenticeship diabetes advisor
DGE = German Nutrition Society *(Deutsche Gesellschaft für Ernährung)*; QUETHEB = German Society of Certified Nutrition Therapists and Nutrition Consultants *(Deutsche Gesellschaft der qualifizierten Ernährungstherapeuten und Ernährungsberater)*; VDD = Society of Dietitians *(Verband der Diätassistenten)*; VDOE = Professional association of nutritional science and home economics *(BerufsVerband Oecotrophologie)*; VFED = Society for Nutrition and Dietetics *(Verband für Ernährung und Diätetik)*
[d] e.g. Nutritional Expert certified by the German Society of Allergy and Asthma *(Ernährungsfachkraft des Deutschen Allergie- und Asthmabund e.V. [DAAB])*, Diabetes advisor certified by the German Diebetes Society *(DiabetesberaterIn Deutsche-Diabetes-Gesellschaft [DDG])*

question of how far affected individuals search for professional help, which might serve as an indicator for the distress elicited by orthorexic eating behavior.
According to Vandereycken [11], 67% of a sample of Belgian experts for eating disorders have been consulted by individuals with orthorexic eating behavior. Moreover, 69% of these experts believe that orthorexia as a potential eating disorder deserves more attention.
Unpublished data of a survey among medical and psychological professionals suggest that 44% were consulted by individuals with orthorexic eating behavior. However, only 4% of these professionals report orthorexia as being the main feature of the described symptoms [cf. 1]. To date, there are no studies regarding the relevance of orthorexic eating behavior in the everyday professional routine of German nutritionists.

Aim of the present study was to evaluate whether German nutritionists are consulted by individuals with orthorexic eating behavior. Furthermore, it was intended to reveal sociodemographic characteristics (age, gender, weight class) and displayed symptoms of affected individuals who consult nutritionists. Using the method of surveying nutritionists regarding affected individuals, used treatments and their opinion towards orthorexia nervosa from a professional point of view should provide additional information to gain more insight into the possible disorder.

Methods

Sample

Three German nutrition organizations, namely the German Nutrition Society (*Deutsche Gesellschaft für Ernährung* [DGE]), the German Society of Certified Nutrition Therapists and Nutrition Consultants (*Deutsche Gesellschaft der qualifizierten Ernährungstherapeuten und Ernährungsberater* [QUETHEB]) and the Federation of Dietitians (*Verband der Diätassistenten* [VDD]) supported the recruitment of participants by forwarding the link to the online questionnaire to their members. Collection of the data took place from 14th February 2018 to 17th April 2018.
290 individuals participated in the study, 15 (5.2%) of them were male, 273 (94.1%) female and two (0.7%) did not report their gender. Mean age was 43.1 (standard deviation [SD] = 10.8) years. Mean years of work experience was 15.9 (SD = 10.4) years. The majority of participants were trained as a dietitian and owned an additional qualification from the DGE as a nutrition consultant (◆ Table 1). 98 (33.8%) of the participants stated to work in a clinic, 38 (13.1%) in an out-patient center, 89 (30.7%) in their own practice and 54 (18.6%) in other related facilities. Since multiple answers were not available for this question, it is presumed that some participants used this option to state that they work in multiple facilities. The remaining participants did not answer this question.
At least one individual from each German federal state participated in the study. Among them, the majority (86 individuals, 29.7%) were from North Rhine-Westphalia, Bavaria (38 individuals, 13.1%) and Baden-Wuerttemberg (37 individuals, 12.8%).

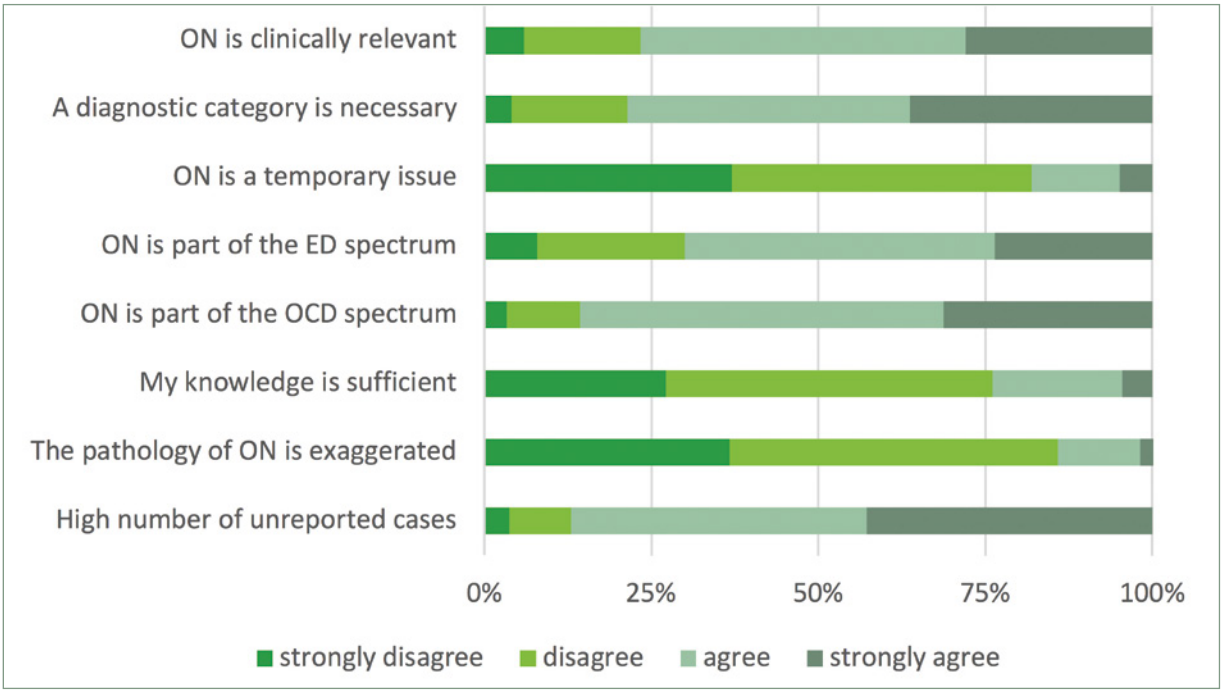

Fig. 1: **Mean percentages of the participant's agreement to eight statements regarding orthorexic eating behavior**
ED = eating disorder; OCD = obsessive-compulsive disorder; ON = Orthorexia nervosa

Material

The online questionnaire (→ www2.hhu.de/kppsycho/orthorexie, only available in German) contained general information on voluntariness and anonymity of participation and data protection. Next, questions regarding sociodemographic aspects (gender, age, years of work experience, education, additional qualifications, German federal land) followed.

Then, specific questions regarding orthorexic eating behavior were presented. Most of the questions included a set of predefined response categories to ensure a short processing time. An extensive literature search served as a basis for the preparation of these predefined response categories. Each question additionally contained text fields where participants could add their own comments.[1]

The first questions assessed level of awareness of the terms „orthorexia nervosa" and „orthorexic eating behavior". Furthermore, participants were asked to estimate the prevalence of individuals with orthorexic eating behavior in their practice and to define their sociodemographic characteristics (gender, age, weight class).

If orthorexic eating behavior was not reported to be main the feature, questions regarding combinations with other disorders followed. Next, eight statements were used to assess the participants' opinion of orthorexia from their professional point of view (◆ Figure 1) using a four-point-scale (1 = "strongly disagree", 2 = "disagree", 3 = "agree", 4 = "strongly agree"). Furthermore, participants stated which diagnostic methods and treatments they used.

Finally, participants were informed that by submitting the questionnaire, they give their consent to participate in the study. Participants could quit participation in the study without declaring any reasons for doing so and without negative consequences by not submitting the questionnaire.

Statistical analysis

IBM SPSS Statistics for Windows, version 25 was used for statistical analysis of the data. Mean (M), standard deviations (SD), absolute and relative frequencies are reported. Microsoft Excel 2016 for Windows was used to summate the total number of affected individuals and their sociodemographic data (gender, age, weight) based on the information the participants gave. Since several questions allowed multiple answers at the same time, results are reported by stating how many times a specific category was chosen and not by reporting the number of individuals that checked the specific answer.

Results

Level of awareness and participants' opinion of orthorexia

226 (77.9%) of the participants knew the terms „orthorexia nervosa" or „orthorexic eating behavior" before participating in the

[1] Due to limited word count, the analysis of these answers cannot be provided in this article. Please contact the corresponding author if you are interested in further information on this analysis.

study. Only 50 participants (17.2%) stated that they did not know these terms before participation (the remaining 4.9% did not answer this question).

Participants mainly agreed with the statements „Orthorexic eating behavior is a phenomenon of clinical relevance" (M = 2.99, SD = 0.83, n = 269) and „A unique diagnostic category is needed in order to classify orthorexic eating behavior" (M = 3.11, SD = 0.83, n = 270).

Most participants did not agree with the statement "Orthorexic eating behavior is a temporary issue, due to the recent trend regarding organic food" (M = 1.86, SD = 0.82, n = 267). Furthermore, participants agreed with the statements "Orthorexic eating behavior does belong to the other eating disorders, even though weight control and body image disturbances do not seem to be characteristic features of orthorexia" (M = 2.86, SD = 0.87, n = 267) and "Orthorexic eating behavior is part of the obsessive-compulsive spectrum" (M = 3.14, SD = 0.74, n = 266).

However, they did not agree with the statements "I consider my state of knowledge regarding orthorexia nervosa to be sufficient" (M = 2.01, SD = 0.81, n = 268) and "It is exaggerated to call orthorexic eating behavior a pathological condition" (M = 1.79, SD = 0.73, n = 267). Finally, participants mainly agreed with the statement "I believe that there is a large number of unreported cases of individuals with orthorexic eating behavior not seeking professional help" (M = 3.26, SD = 0.78, n = 269), ◆ Figure 1.

Prevalence, symptoms and comorbidities

203 (70%) of the participants stated that they have been consulted by at least one individual following a very healthy diet, resembling orthorexic eating behavior, during the last 12 months. 72 (24.8%) participants stated that this was not the case and 15 (5.2%) did not answer this question. Only participants who reported having seen an individual with orthorexic eating behavior answered the following questions.

In total, participants reported 2,215 individuals presumably displaying orthorexic eating behavior who sought help in nutrition counseling or therapy in the last 12 months. This results in a mean number of 7.6 orthorexic individuals per participant in the past 12 months. 1,744 of these affected individuals were reported to be female and 471 were reported to be male. 195 individuals were reported to be younger than 18 years old, 501 were reported to be between 18 and 25 years, 667 were reported to be between 25 and 40 years old and 466 were reported to be between 40 and 60 years old. 114 individuals were reported to be older than 60 years. 634 individuals were reported being underweight, 891 as being normal weight and 285 as being overweight (remainder: not reported).

Regarding the occurrence of psychopathological symptoms, a strict selection of food according to specific criteria was mentioned 177 times (61.0%), cognitive fixation on healthy eating was mentioned 161 times (55.5%) and rigid adherence to self-imposed nutritional rules was mentioned 155 times (53.4%). The fear of falling ill due to unhealthy eating behavior was mentioned 134 times as a symptom (46.2%). The individual's belief of his/her diet being the only right way to eat was mentioned 131 times (45.2%) as a symptom.

Participants mentioned the following symptoms less frequently: social isolation (76 times, 26.2%), intake of dietary supplements (73 times, 25.2%), dieting to promote weight loss (58 times, 20%), malnutrition (52 times, 17.9%), meal planning a few days ahead of time (48 times, 16.6%) and ritualized preparation of meals (37 times, 12.8%).

91 (47.4%) of the participants reported to have seen individuals with orthorexic eating behavior being the main symptom. 101 (52.6%) participants stated that this was not the case. Participants who reported having seen orthorexic individuals with orthorexia not being the main symptom reported that it occurred 52 times (27.0%) in combination with anorexia nervosa and 42 times (22.0%) in combination with obsessive-compulsive disorder. Eating disorders not otherwise specified were reported to be comorbid with orthorexia 36 times (19.0%). 47 participants (24.5%) stated that they did not know which disorder co-occurred with orthorexia.

Diagnostic assessment and treatment approaches

241 (83.1%) participants reported that they usually pay attention to symptoms of a fixation on healthy eating when seeing new clients. 32 (11%) participants declared that they do not pay special attention to this aspect (remainder: not reported).

156 (53.8%) of the participants stated to have treated individuals with a fixation on healthy eating. 107 (36.9%) stated to have not treated individuals with a fixation on healthy eating and 27 (9.3%) did not answer.

Regarding used methods, counseling interviews were mentioned 121 times (77.6%). Assessment of dietary history was mentioned 111 times (71.2%) and the usage of food records was reported 106 (67.9%) times. Furthermore, analysis of eating habits was mentioned 98 times (62.8%) and nutrition therapy was reported 96 times (61.5%). Coaching was mentioned 50 times (32%), preparation of nutrition plans was reported 38 times (24.4%) and weight management was mentioned 24 times (15.4%).

Discussion

Whereas most of the participants are familiar with the terms „orthorexia" and „orthorexic eating behavior", the majority did not think that their state of knowledge regarding this issue is sufficient. This result points out that the knowledge derived from recent studies does not reach nutritionists in their working life. Information material could be an option to spread scientific results among practicing nutritionists.

The results suggest that orthorexic eating behavior is a relevant phenomenon in nutrition counseling and nutrition therapy. Nearly two thirds of the participants reported that they saw at least one individual with orthorexic eating behavior in the past 12 months. Furthermore, results reveal about eight orthorexic individuals per nutritionist who sought professional help in the past 12 months. Retrospective reports from the participants on the sociodemographic characteristics of affected individuals suggest that more females than males with orthorexic eating behavior make use of nutrition counseling. These individuals are mainly younger than 40 years and are usually underweight or with a normal body weight. The reported gender distribution supports studies that found more pronounced orthorexic eating behavior in females (e.g. [12]), but there are also studies that suggest higher levels of orthorexia in males (e.g. [13]) and studies that did not find gender differences (e.g. [9]). Furthermore, the relation of body weight and body mass index respectively and orthorexic eating behavior still remains an open question (e. g. [14]). More research is needed to describe sociodemographic characteristics of affected individuals more accurately.

Regarding reported symptoms, it is interesting to note that negative consequences (e.g. social isolation, malnutrition) are only reported to occur in few cases. To what extent orthorexic eating behavior evokes subjective distress and in how far it is a disorder of clinical relevance is still a question open to scientific discussion [5, 6]. Since the majority of the participants consider orthorexia to belong to its own diagnostic category, and believe that orthorexic eating behavior is a pathological condition, it can be concluded that adverse effects of orthorexia might be rare, but that in these rare cases, they are particularly pronounced. Another possible explanation is that individuals trivialize their perceived distress and consequently do not report it. The other frequently reported symptoms resemble symptoms published in case reports [4, 15] and correspond to recently proposed diagnostic criteria [5].

According to the participants, orthorexic eating behavior is a main feature in only half of the cases. Comorbidities with other eating disorders or obsessive-compulsive disorders are frequently reported. These results reflect the difficulties of differentiating orthorexic, anorexic and obsessive-compulsive behaviors. Hence, they emphasize the importance of more research in order to precisely define the construct of orthorexia, and whether it exists as a distinct variant of disordered eating. Studies especially suggest an overlap with anorexic symptoms [8]. For example, it is assumed that orthorexic eating behavior might be a mild variant of anorexia nervosa or that it serves as a coping strategy for anorexic individuals to overcome this severe eating disorder [16,17].

Although there is empirical evidence for orthorexia to be an eating disorder [6, 8], the majority of the participants suspect orthorexia to be a disorder located in the obsessive-compulsive spectrum. A possible explanation is that erroneously, ego-syntonic obsessive behavior (e.g. rigid adherence to self-imposed nutritional rules [cf. 18]) is interpreted as ego-dystonic and is therefore linked with obsessive-compulsive disorder. On the other hand, this result could also point out that obsessive-compulsive behavior is more pronounced and hence more relevant within the syndrome of orthorexia nervosa than previously assumed, leading professionals to perceive orthorexia as belonging to the obsessive-compulsive spectrum.

Just over half of the participants reported to have treated an individual with orthorexic eating behavior. Mainly, counseling interviews, anamnesis of eating behavior and analysis of food patterns were used. Since there are no recommendations on how to treat orthorexic eating behavior, the reported techniques could serve as first inspirations regarding which methods could be useful in order to treat orthorexia.

Limitations

Since no randomization procedure was used, it cannot be taken for granted that the obtained sample is representative of all German nutritionists. Effects of self-selection of the participants, e.g. professionals who are interested in orthorexia were more likely to participate in the study than professionals who are not familiar with the topic, limit the interpretability of the results. Another limitation is the selected categories provided to answer multiple-select questions. The choice may have influenced given answers.

Another limiting aspect is the retrospective reports of data, which might have been subject to cognitive distortions (e.g. hindsight bias). Therefore, reported numbers of affected individuals can only be considered as approximate estimations. For more reliable results, a replication and extension of the study, using a representative sample of nutritionists is recommended. Furthermore, a file analysis of treated individuals with orthorexic eating behavior could be useful.

Conclusion

The results of this nationwide survey of German nutritionists regarding the relevance of orthorexic eating behavior in nutrition counseling and therapy point out that orthorexia exists as a syndrome and that individuals with this eating behavior seek professional help in consulting practice. On behalf of the affected individuals, more research is needed in order to ensure an appropriate treatment by qualified nutritionists.

Conflict of Interest
The authors declare no conflict of interest.

Acknowledgements
We sincerely thank nutritionist Dr. Julia Depa, who assisted us with the development of the questionnaire. We would also like to thank the nutrition associations that forwarded the link to our questionnaire and enabled us to reach a big sample. Finally, we would like to thank every participant who took the time to participant in our study. For the English version, we sincerely thank Hannah Kiesow-Berger for her valuable assistance with the translation of the manuscript.

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Conflict of Interest
The authors declare no conflict of interest.

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DOI: 10.4455/eu.2019.048