Potyrała Patrycja , Olejniczak Dominik. Nonspecific eating disorders: ortorexia nervosa and night eating syndrome – a subjective review. Journal of Education, Health and Sport. 2018;8(9):301-307. eISNN 2391-8306. DOI http://dx.doi.org/10.6084/m9.figshare.6983972
http://ojs.ukw.edu.pl/index.php/johs/article/view/5839

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part b item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eissn 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 01.08.2018. Revised: 17.08.2018. Accepted: 20.08.2018.

Nonspecific eating disorders: ortorexia nervosa and night eating syndrome – a subjective review

MD Patrycja Potyrała
The Students' Scientific Association ONKOMA, Department of Gastroenterology, Maria Sklodowska-Curie Memorial Cancer Center

PhD Dominik Olejniczak
Department of Public Health, Medical University of Warsaw, Poland

Abstract

Eating habits pose an import factor which influences our health state. Nowadays two main tendencies prevail in the society: following the rules of healthy eating conscientiously, whereas the other one consists in using food as a tool serving to mood improvement. The article is devoted to non-specific eating disorders, that is, night eating syndrome (NES) and orthorexia nervosa. Orthorexia nervosa is an affixation on healthy eating, whereas night eating syndrome is a night-time hypherphagia, morning anorexia and insomnia. At present, it seems that these two disorders are not frequent. The misthinking may be caused by difficulties in diagnosing them. The identification can be stymied by the lack of unified definition or the lack of unified diagnostic criteria. Further researches of these health problems are recommended as in the future they may cause development of a lot of serious diseases. One must pay attention, in particular, to night eating syndrome and its importance in obesity development and its link to type 2 diabetes.

Key word: ortorexia nervosa, night eating syndrome, eating disorders, public health

Background

Aliment is a source of energy and nutrients essential to health maintenance [1]. In the recent years there has been an increase in interest in healthy eating matters. Eating disorders are associated with a lot of co-occurring somatic diseases; they have a negative influence on

mental health and they cause a serious deterioration in quality of life. They pose serious problems for public health and they require undertaking appropriate methods of prevention, as well as, successful interdisciplinary treatment. Eating disorders are not a domain of women anymore. It is estimated that male teenagers and male adults pose 10% cases of those diagnosed with eating disorders [2,3,4]. The decrease in common hitherto eating disorders, such as bulimia, in aid of other disorders, for instance, orthorexia nervosa and night eating syndrome (NES) is observed increasingly [5,6]. Orthorexia nervosa, that is, a pathological fixation on healthy food ingestion, has become one of the most popular eating disorders for a few years now. Following rules of balanced diet with care is a positive phenomenon; however, too deep attachment to specified ideology connected with ingestion can become damaging and may result in deficit of nutrients, malnutrition, and even death [7] . Night eating disorder (NES) is a syndrome of disorders which is connected with getting up at night and eating meals, as well as, with lack of appetite in the morning [6]. Night eating disorder is important in a nosogenesis of obesity, and thus it can become an essential problem for public health in near future [8,9].

Aim

The aim of this article is to present and compare existing knowledge on the subject of orthorexia nervosa and night eating disorder. The publication raises issues such as, typical symptoms, proposed diagnostic criteria, as well as, dangers accrued from choosing this way of eating habits. Although one can hear about these non-specific eating disorders increasingly in media, there are only few publications on these subjects in specialised literature. One decided also to investigate closely problems which orthorexia nervosa and night eating syndrome pose due to the fact that in our opinion they are the most interesting and the most important in terms of current clinical practice.

Material and methods

One analysed articles available in medical data base, which were published between 1st January 2000 and 31th December 2013 with reference to articles concerning orthorexia nervosa and night eating syndrome. One made use of publications which meet the following criteria: work supported with research examples, retrospective and prospective studies, as well as, clinical reports concerning epidemiology, risk factors and treatments. One excluded not published studies, abstracts from conference speeches, dissertations.

Discussion

Definition

Orthorexia is a new notion implemented in 1997 by an American doctor Steven Bratman who defined it as a fixation on appropriate and healthy food. The notion of orthorexia comes from Greek words *orto,* which means correct and *oreksis* – appetite [10].

Night eating syndrome, that is NES, was described for the first time in the 50's of 20th century in the paper *"Night life syndrome: pattern of food ingestion in some obese patients"* [11]. One can indicate three main components: morning anorexia, night hypherphagia and insomnia [12].

Orthorexia occurs in 0.5 – 1% of population, among the two sexes equally often, particularly in artists, sportspeople, doctors and students of medicine, young and educated people who are aware of a great importance of correct nutrition for health maintenance [13]. Night eating

syndrome is more common among adult women than men, especially in Mediterranean population. Its incidence increases with body fat content [14]. In general population it amounts to 1.5 – 5.2%, in obese patients it amounts to 6 – 14%, and in patients requiring surgical procedure it amount to 8 – 42% [15].

Etiology

It seems that both disorders are connected with mental problems. The orthorexic are young people, raised in overprotective families. They are often incapable of independence; they cannot take their own decisions. They want subconsciously to demonstrate their independence by implementing dietary modifications [16]. People who struggle with orthorexia are perfectionists; they strive for a designated objective conscientiously. They are ambitious and they bother themselves with any failure deeply. The orthorexic usually have accurate body weight [17], their weight is not crucial for them. In extreme stage of the disease the orthorexic suffer from malnutrition.

Night eating syndrome occurs very often among people who experienced a great amount of stress. Pawlow and the others displayed that intensity of anxiety reactions and anxiety as a trait in patients suffering from night eating disorder was higher than among healthy patients. The NES sufferer suffers more often from mental disorders, among others, schizophrenia and sleep disorders. It was also displayed that first degree relatives of patients suffering from night eating syndrome face a greater risk of becoming ill in the future, which may suggest genetic undertow of the disorder [18]. One should also seek causes of this disease among endocrine disorders which can be noticed in low amount of melatonin and leptin, as well as, in high level of cortisol and human TSH [19]. Social factors also have crucial impact: dysfunctional endocrine reaction to stress, dissatisfaction with their own physical appearance, and primarily parental negligence in childhood.

Diagnosis

Neither unified criteria of recognizing orthorexia nor standardized test enabling to make diagnosis have been set so far. In clinical practice there is employed Bram's test and ORTO-15 questionnaire which are tools describing intensification of orthorexic behaviours [8]. As a diagnostic tool of NES is considered fourteen-question questionnaire *Night Eating Questionnaire (NEQ)* by Stunkard. One cannot miss anamnesis.

Characteristic

Motivation for starting a restrictive diet for the orthorexic is an attempt to avoid civilization diseases, a willingness to reduce body weight or an improvement of health state [20]. At the beginning of their diet, the orthorexic eliminate dishes commonly known as unhealthy, what is connected with society approval. However, after some time, they eliminate a greater number of products which leads to development of the disease [13]. Orthorexia originates when the diet becomes an escape form life, and everyday activity is dominated by planning, buying and preparing meals. Every deviation from the strict diet causes anxiety and feeling of guilt [5]. An organism deprived of necessary nutrients starts to become ill, depressed mood and social isolation occur [21]. The patient can also sever relation with the family if the one object to their actions [22].

A patient suffering for night eating syndrome is a person who complains about sleep disorders at least three times a week. During night hypherphagia the patient consumes meals rich in

carbohydrates and fats, healthy or not, it does not matter [23]. They usually amount to 300 kcal. Compared with the orthorexic, who plan their diet fairly and analyse products which they are going to eat, the patient with NES consumes meals under the influence of emotions: anger, upset, sadness or compulsively, because they feel such a compulsion. These patients, not unlike the orthorexic, experience the lack of control over their own life, over what they eat, that causes shame and felling of dysphoria in them.

Clinical implications

Orthorexia nervosa leads to a considerable weight loss, consequently to malnutrition. Typical are mood swings, personality disorders, depression. The lack of vitamins and minerals manifest itself in dysfunction of an entire organism: a susceptibility to infection, stomachaches, weakness, headaches, an erythrocytopenia. Eventually, it leads to death [21,24].

Night eating syndrome is associated with more frequent obesity occurrence, and thereby a greater risk of suffering from civilization diseases and type 2 diabetes. Depressive and anxiety disorders and other mood disorders occur. One can observe intensification of stress reactions and low self-assessment [23,25].

Treatment

The basis for treating orthorexia is recommendation of following well-balanced diet composed by a dietician. Support and help from family and relatives of the sick person is very important because the environment influences the patient. Effectiveness of cognitive behavioural therapies was proved [26].

The basis of NES is a pharmacotherapy. Sertraline exerts effectiveness, and also influences decrease in episodes of eating at night, body weight loss, and improvement in patent's mood [27]. Cognitive behavioural therapies and alternative therapies are applied as well.

Conclusions

Both orthorexia nervosa and night eating syndrome are difficult to diagnose. Orthorexia develops slowly and insidiously. One should be alert and suspect this disease when a life is completely subordinated to "healthy' food [9]. Excessive concentration on appropriate food may cause a lot of dangerous disorders, and consequently lead to pathological situations and emaciation [1]. Night eating syndrome can be one of the causes of overweight and obesity, and in the future, metabolic diseases. One always should take implication of night eating syndrome into consideration while diagnosing patients with type 2 diabetes. The level of patients' stress, which is an important factor in developing NES, should be controlled regularly.

Table 1.

Comparision eating disorders of orthorexia nervosa and nocturnal eating syndrome (NES).

	Ortorexia nervosa	**Night eating syndrome (NES)**
Risk groups	artists, sportsman, doctors and medical students	adult, obese women, Mediterranean population
Patients	ambitious	bored, unhappy people
Childhood	overprotective families	neglected child by parents
Self-assessment	their weight is not crucial	dissatisfaction of body
Screening test	Bram's test and ORTO-15 questionnaire	questionnaire *Night Eating Questionnaire (NEQ)*
Food	healthy food	meals rich in carbohydrates and fats
Sleep disorders	no	yes
Mood disorders	depression	depression, depressive disorders, anxiety
Body weight	weakness / weight loss	obesity / body weight gain
Other	anemia, osteoporosis, menstrual disorders	obesity, diabetes t.2, personality disorders

References

1. Tulay Bagci Bosi A., Camur D., Guler Cagatay G. Prevalence of orthorexia nervosa in resident medical doctors in the faculty of medicine (Ankara, Turkey). Appetite. 2007; 49: 661–666.
2. Bąk, D. (2008) Zaburzenia odżywiania się u mężczyzn. Psychiatria Polska, 42(2), 167–178.
3. Cumella E. Examining eating disorders in males. Behavioral Health Management 2003; 23 (4): 38–41.
4. Hoek HW, van Hoeken D. Review of the prevalence and incidence of eating disorders. Int. J. Eat. Disord. 2003; 34: 383–396.

5. Bratman S, Knight D. Health food junkies. Orthorexia nervosa: Overcoming the obsession with healthful eating. New York: Broadway Books; 2000.
6. Katarzyna Jakuszkowiak&Wiesław Jerzy Cubała. *Zespół jedzenia nocnego— rozpowszechnienie, diagnoza i leczenie*. „Psychiatria". 1, s. 107-111, 2004.
7. Park S.W., Kim J.Y., Go G.J., Jeon E.S., Pyo H.J., Kwon Y.J. Orthorexia Nervosa with Hyponatremia, Subcutaneous Emphysema, Pneumomediastimum, Pneumothorax, and Pancytopenia. Electrolyte Blood Press. 2011; 9 (1): 32–37.
8. Peshek & Kelly C. Allison. Night Eating Syndrome. Diagnosis, Epidemiology and Management. „CNS drugs". 19, s. 997-1008, 2005.
9. Olejniczak Dominik, Skonieczna Joanna, Kitowska Wioleta. Night eating syndrome – characterization. Journal of Education, Health and Sport. 2018;8(6):246-250.
10. Catalina Zamora M., Bote Bonaechea B., Garcia Sanchez F., Rios Rial B. Orthorexia Nervosa. A new eating behavior disorder? Actas Esp. Psiquiatr. 2005; 33 (1): 66–68.
11. Jakuszkowiak K., Cubała W.J., Night eating syndrome – prevalence, diagnosis and treatment, Via Medica, vol. 1, nr 2, 107–111, 2004.
12. Kummer A., Dias F., Teixeria A. On the concept of orthorexia nervosa. Scand. J. Med. Sci. Sports 2008; 18 (3): 395–396.
13. Korinth A., Schiess S., Westenhoefer J. Eating behaviour and eating disorders in students of nutrition sciences. Public Health Nutr. 2010; 13: 32–37.
14. John P. O'Reardon, Andrew Peshek & Kelly C. Allison. *Night Eating Syndrome. Diagnosis, Epidemiology and Management* „CNS drugs". 19, s. 997-1008, 2005
15. Allison KC, Engel SG, Crosby RD, et al. Evaluation of diagnostic criteria for night eating syndrome and binge eating disorder among persons seeking bariatric surgery: prevalence and related features. Eat Behav 2008;9(4):398-407.
16. Colles L, Dixon JB, O'Brien PE. Night eating syndrome and nocturnal snacking: association with obesity, binge eating and psychological distress. Int J Obes (Lond) 2007;31(11):1722-1730.
17. Fidan T. Ertekin V., Işikay S., Kirpinar I. Prevalence of orthorexia among medical students in Erzurum, Turkey. Compr. Psychiatry 2010; 51 (1): 49–54 [Epub 17.04.2009].
18. Jaworski M., Krupińska P.. Zespół jedzenia nocnego u dorosłych chorych na cukrzycę typu 2. „Diabetologia Kliniczna". 1, s. 17-24, 2012. via medica.
19. Kelly C. Allison, Albert J. Stunkard, Sara L. Thier: Overcoming Night Eating Syndrome: A Step-by-step Guide to Breaking the Cycle. New Harbinger Publications, 2004. ISBN 1-57224-327-9.
20. Bartman S. Health Food Junkies — Orthorexia Nervosa: Overcoming the Obsession with Healthful Eating. Broadway Books, New York 2000.
21. Park S.W., Kim J.Y., Go G.J., Jeon E.S., Pyo H.J., Kwon Y.J. Orthorexia Nervosa with Hyponatremia, Subcutaneous Emphysema, Pneumomediastimum, Pneumothorax, and Pancytopenia. Electrolyte Blood Press. 2011; 9 (1): 32–37.
22. Kałędkiewicz E, Doboszyńska A. Ortoreksja na tle innych zaburzeń odżywiania. Forum Medycyny Rodzinnej 2013; 7 (6): 307-315.
23. Bąk-Sosnowska M., Zaburzenia odżywiania towarzyszące otyłości. „Forum Zaburzeń Metabolicznych". 1, s. 92-99, 2010. viamedica.
24. Segura-García C., Papaianni M.C., Caglioti F. i wsp. Orthorexia Nervosa: A frequent eating disordered behavior in athletes. Eat Weight Disord. 2012; 17. e226–233.

25. Pawlow L.A., O'Neil P.M., Malcom R.J., Night eating syndrome: Effects of brief relaxation training on stress, mood, hunger, and eating patterns, International Journal of Obesity 2003; 27(8): 970–978.
26. Jeżewska-Zychowicz M. Zachowania Żywieniowe i ich uwarunkowania. Wydawnictwo SGGW, Warszawa 2007.
27. Carlos M. Grilo, James E. Mitchell: Treatment of Eating Disorders: A Clinical Handbook. Guilford Press, 2012, s. 177. ISBN 978-1-4625-0912-6.