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“MENS SANA IN CORPORE SANO”

FOOD, NUTRITION, EATING HABITS, HEALTH AND DISEASE
AT EUROPEAN SCHOOLS AS AN (INTER)CULTURAL MIRROR

CLASSROOM IMMERSION “PSYCHOLOGY”



(<https://myhasslefreehomebasebusiness.wordpress.com/eating-disorders/>)

5. Cross students exchange

Focus “Eating disorders”

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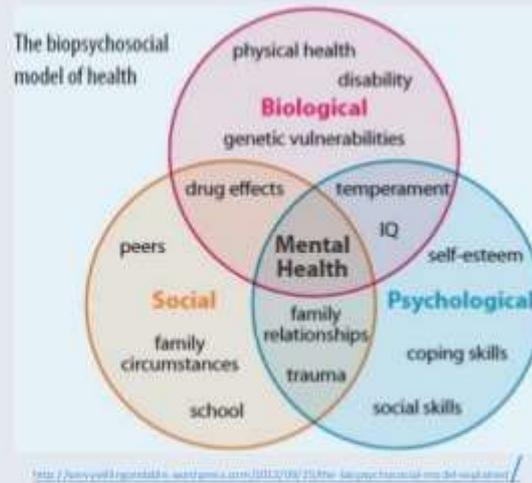
**Are we promoting health eating and feeding?
That's alright, but let's be aware of some traps**

1. Seeking simple explanations for complex things

A Biopsychosocial Model

The late George Engel believed that to understand and respond adequately to patients' suffering—and to give them a sense of being understood—clinicians must attend simultaneously to the biological, psychological, and social dimensions of illness. He offered a holistic alternative to the prevailing biomedical model that had dominated industrialized societies since the mid-20th century. His new model came to be known as the biopsychosocial model.

(Borrell-Carrió et al., 2004)



- Stop searching for a reductionist, purely **biological explanation** for psychological phenomenon. "It is implausible to expect any one explanation (e.g., neurotransmitter dysregulation, irrational thinking, childhood trauma) to fully account for mental disorders," he writes. "No portion of the biopsychosocial model has a monopoly on the truth." (Deacon, 2013).

In "good" eating and feeding:

biological aspects: balance of carbohydrates, proteins, fats, salts, and so on, importance of a rich breakfast, food pyramid...

psychological aspects: Food as a mediator of the relationship between us and the outside world
Introduction of food / milk for the baby as the first experience of separation between self and non-self
The meal as an opportunity for interaction between the mother and the child, they will build the foundations for the development of the relationship of attachment of the dyad (John Bowlby)
Food as a vehicle of the relationship between mother and her child
Eating and communication are inseparable. Food satisfies not only a basic need but it responds to the need for care, exchange and affection.

The quality of the Food-Emotions relationship internalized by the child also depends on the ability of the caregiver to adequately understand the needs expressed by the child through his tears. An attentive parent offers food only in response to signals of nutritional need; it supports the development of the feeling of hunger as a distinct idea from other needs / feelings. On the opposite, soothing a crying baby by putting in his mouth the milk bottle or giving him a biscuit can take him to associate the food to a cure for all the unpleasant experiences. It conveys to the child confusion and difficulty in distinguishing between physiological needs and other discomfort sensations / tension (H. Bruch 1973).

social-cultural aspects: In every religious traditions there are rituals related to food, from the sacrifices of lambs in ancient Greece and in the Old Testament followed by a ritual meal up to the rites of the Jewish, Christian, Muslim tradition. All cultures provide ritual moments with great consumption of shared food, from eating with a big catch in the Paleolithic to the banquet room at the Greeks and Romans to banquets, festivals, potlatch in rich and poor cultures.

In particular moments of social life sharing food has a predominantly relational function: New Year's Eve, invitation to the restaurant for a first date, pizza with friends, students parties, lunch with the family

In “bad” eating and feeding:

DSM-5[®] Feeding and Eating Disorders: ICD-9-CM and ICD-10-CM Codes

Disorder	ICD-9-CM	ICD-10-CM
Pica	307.52	
In children		F98.3
In adults		F50.8
Rumination Disorder	307.53	F98.21
Avoidant/Restrictive Food Intake Disorder	307.59	F50.8
Anorexia Nervosa	307.1	
Restricting type		F50.01
Binge-eating/purging type		F50.02
Bulimia Nervosa	307.51	F50.2
Binge-Eating Disorder	307.51	F50.8
Other Specified Feeding or Eating Disorder	307.59	F50.8
Unspecified Feeding or Eating Disorder	307.50	F50.9

What about Anorexia?

Anorexia Nervosa is a psychological and possibly life-threatening eating disorder defined by an extremely low body weight relative to height (BMI), extreme and needless weight loss, illogical fear of weight gain, and distorted perception of self-image and body. Additionally, women and men who suffer with anorexia nervosa exemplify a fixation with a thin figure and abnormal eating patterns. There are:

- Restrictive Anorexia Nervosa – In this form of anorexia nervosa, the individual will fiercely limit the quantity of food consumed, characteristically ingesting a minimal amount that is well below their body’s caloric needs, effectively slowly starving him or herself.
- Anorexia Nervosa Binge / Purge Type – The individual suffering from anorexia nervosa binge / purge type, will purge when he or she eats. This is typically a result of the overwhelming feelings of guilt a sufferer would experience in relation to eating; they compensate by vomiting, abusing laxatives, or excessively exercising.

Though two classifications of anorexia nervosa exist, both types exhibit similar symptoms, such as irrational fear of weight gain and abnormal eating patterns.

What about Bulimia?

It is defined by

1. Recurrent episodes of binge. A binge episode is characterized by both of the following aspects: A Eating, in a short time, a great quantity of food B Feeling of losing control during the episode (eg., Feeling of not being able to stop eating or control what or how much one is eating).
2. Recurrent and inappropriate compensatory behavior to prevent weight gain, such as self-induced vomiting, misuse of laxatives, diuretics or other medications, fasting or excessive exercise.

What about Binge-eating Disorder?

It is defined just like bulimia, but there isn't a compensatory behavior to prevent weight gain. It can be associated with obesity

What about Obesity?

Obesity is not a mental disorder. Overweight and obesity is coded E66 in ICD 10 and is not inserted in DSM 5, although it is statistically associated with certain mental disorders such as binge-eating, depression, bipolar disorder, schizophrenia. So who it is obese, have excess body fat and do not necessarily suffer from any mental disorder.

For complex things, complex explanations

Among the **predisposing factors** there may be, for example, pregnancy-related complications and perinatal damage, the presence of family members who suffer or have suffered from an eating disorder, have low self-esteem, interpersonal difficulties, perfectionism, body dissatisfaction, desire for thinness and the use of low-calorie diets..

The **triggers** are events that can trigger the onset of the disorder in people who have a predisposition: stressful or traumatic events such as bereavement, abuse, illness, family conflicts, disruption of an important relationship, school or city exchange.

The **maintenance factors** are factors that support the self-maintenance of the disorder itself. Among these there may be weight loss, bulimics crises, vomiting and laxatives. Important maintenance factors are also the physical and psychological consequences of the disorder. Food restriction and subsequent weight decrease over time encourage depression, irritability and dissatisfaction with one's body. These factors, through a vicious circle, can induce a further food restriction, aimed at improving self-esteem. Even the reactions of family and social environment can support the maintenance of eating disorders.

a BIO – psycho – social approach

Research provides strong evidence for an **inherited predisposition** (tendency) toward developing an eating disorder. In other words, eating disorders are often biologically inherited and tend to run in families. Recent research suggests that inherited biological and genetic factors contribute approximately 56% of the risk for developing an eating disorder. Individuals who have a mother or a sister with anorexia nervosa are approximately twelve times more likely to develop anorexia and four times more likely to develop bulimia than other individuals without a family history of these disorders. Studies of twins have shown a higher rate of eating disorders when they are identical (compared to fraternal twins or other siblings). Samples of DNA, the substance inside cells that carries genetic information, from pairs of siblings with eating disorders are now being analyzed to determine if they share genetic characteristics that are different from pairs of siblings without these disorders.

Research has also focused on **abnormalities in the structure or activity of the hypothalamus**, a brain structure responsible for regulating eating behaviors. Studies suggest that the hypothalamus of bulimics may not trigger a normal satiation (feeling full or finished) response. So, even after a meal, these individuals do not feel full. A wealth of research suggests that several different neurotransmitters are involved in eating disorders. Before discussing the contributions of specific neurotransmitters to different disorders, it is important to provide a bit of background about the functioning of these chemicals.

Neurotransmitters carry messages from cell to cell throughout the brain and nervous system. The neurotransmitter **serotonin** affects bingeing behavior in bulimics. These individuals often crave (and gorge) on foods rich in carbohydrates. The body converts sugars from carbohydrates, through a multi-step process, into tryptophan. Tryptophan is then used to create serotonin, which is partially responsible for the regulation

of appetite, creating a sense of satiation, and regulating emotions and judgment. Thus, the binge behavior of bulimics may also be a response to low serotonin levels in the brain. A research team at the University of Pittsburgh found that individuals successfully treated for bulimia still had abnormally low serotonin levels, although other brain chemicals, such as dopamine and norepinephrine, were normal in comparison to individuals with no history of eating disorders. The successful treatment of bulimia with Prozac (a medication typically used for depression), which acts to increase the amount of serotonin in the brain, is additional evidence of the importance of this brain chemical.

a bio – PSYCHO – social approach

People with eating disorders tend to be perfectionistic. They have unrealistic expectations of themselves and others. In spite of their many achievements, they feel inadequate, defective, and worthless. In addition, they see the world as black and white, no shades of gray. Everything is either good or bad, a success or a failure, fat or thin. If fat is bad and thin is good, then thinner is better, and thinnest is best—even if thinnest is sixty-eight pounds in a hospital bed on life support.

Some people with eating disorders use the behaviors to avoid sexuality.

Most of people with eating disorders use them to try to take control of themselves and their lives. They are strong, usually winning the power struggles they find themselves in, but inside they feel weak, powerless, victimized, defeated, and resentful.

People with eating disorders often lack a sense of identity. They try to define themselves by manufacturing a socially approved and admired exterior. They have answered the existential question, “Who am I?” by symbolically saying “I am, or I am trying to be, thin. Therefore, I matter.”

People with eating disorders often are legitimately angry, but because they seek approval and fear criticism, they do not know how to express their anger in healthy ways. They turn it against themselves by starving or stuffing.

a bio – psycho – SOCIAL approach

Family factors Some people with eating disorders say they feel smothered in overprotective families. Others feel abandoned, misunderstood, and alone. Parents who overvalue physical appearance can unwittingly contribute to an eating disorder. So can those who make critical comments, even in jest, about their children’s bodies. These families tend to be overprotective, rigid, and ineffective at resolving conflict. Sometimes parents are physically or emotionally absent. At the same time, there are high expectations of achievement and success. Children learn not to disclose doubts, fears, anxieties, and imperfections. Instead they try to solve their problems by manipulating weight and food.

Cultural factors: Eating plays an important role in most cultures. Acceptable eating habits vary widely between religious and ethnic groups, and eating disorders have been conceptualized as culture-bound syndromes. In this context, it is notable that most published research is based on North American and European populations. In the last decade, reports on eating disorders and related conditions from various countries, including low income countries and countries undergoing sociocultural transitions, have accumulated which may inform a classification that is sensitive to local variation.

Anorexia nervosa occurs in all cultures, but the incidence is higher among individuals who have been exposed to Western culture and values and those who live in relative affluence. For example, in the Caribbean island of Curaçao, all identified cases of anorexia nervosa were among young women of mixed ethnicity who had spent time in the USA or the Netherlands; there were no cases of anorexia nervosa among the majority of young women in the island, who are black and had not been abroad. Anorexia nervosa is relatively rare among black women in Africa, the Caribbean, and the USA. In the Czech Republic, the incidence of anorexia nervosa increased sharply after the fall of the iron curtain, that was associated with exposure to Western-style media and values.

In addition to influence on prevalence, culture also shapes the manifestation of anorexia nervosa. For example, in South-East Asia, a larger proportion of patients with anorexia nervosa report abdominal discomfort and other factors as a rationale for restrictive eating. However, typical presentations with weight and shape-related preoccupations and fear of gaining weight have also been recorded in most non-Western cultures, and the rates of full-syndrome anorexia nervosa in South East Asia are intermediate between Western countries and African populations. There is evidence that patients who initially present with other rationales often develop intense fear of weight gain and that the proportion of patients reporting fear of weight gain increases with exposure to Western cultural values. This suggests that weight-phobic and non-weight-phobic anorexia are context-dependent manifestations of the same disorder. Therefore, it is recommended that fear of weight gain is not required for the diagnosis of anorexia nervosa, provided that behaviors maintaining underweight or other psychopathology suggestive of eating disorder are present.

Bulimia nervosa has been conceptualized as strongly bound to Western culture. The disorder is more common among individuals who were exposed to Western culture and who grew up in relative affluence. Although all component symptoms of bulimia nervosa occur in non-Western low income countries, the syndrome appears to be less common in those countries than in North America and Western Europe. The incidence of bulimia nervosa increases in parallel with exposure to Western media and values and correlates with the degree of acculturation. Therefore, the manifestation of bulimia nervosa and its separation from normality have to be considered within cultural context. For example, culturally sanctioned feasting followed by the use of indigenous purgatives in Pacific islands should not be medicalized, but the use of the same herbal purgatives in the context of typical psychopathology and outside the culturally sanctioned events is a symptom of an eating disorder. The motives for pursuing a thin body shape may also depend on socioeconomic context. For example, in societies undergoing socioeconomic transition, a thin body can be perceived as a valuable commodity that may help obtain a lucrative job and guarantee career success. There is little evidence on whether such cultural variations in manifestation have an impact on the long-term prognosis and treatment response. In the USA, patients with bulimia nervosa belonging to ethnic minorities appear to respond to the same psychological treatments as European Americans.

Binge eating disorder is relatively equally distributed across countries and ethnic groups, but details of manifestation vary in culture-dependent manner. Black women with binge eating disorder are on average heavier, have fewer concerns related to body weight, shape and eating, a less frequent history of bulimia nervosa, but similar levels of depressive symptoms and impairment compared to white women with the same diagnosis. In general, the associations between binge eating, obesity, weight and shape dissatisfaction, and general psychopathology hold across ethnic groups. While no modifications of diagnostic criteria are required, the lower rates of treatment among black women with binge eating disorder suggest that increased alertness of clinicians to eating disorders in non-European ethnic groups is warranted.

2. Orthorexia. Is it really a disease?

Avoidant/restrictive food intake disorder (ARFID) include child, adolescent and adult cases presenting inadequate food intake for reasons related to the physical properties or feared consequences of eating specific types of food other than effects on body weight and shape.

ARFID overlaps with anorexia nervosa in terms of restrictive food intake and the resulting underweight, but differs in psychopathology and motives for restrictive eating. These include avoiding types of food of specific colour or texture or limiting food intake to a small number of specific “safe” types of food because of perceived health consequences. ARFID is typically not associated with gross disturbance of body image.

Since there is vast normal variation in eating habits among children and adults, differentiation from normality is important. As a rule, ARFID should only be diagnosed when the restrictive/avoidant eating is a cause of inadequate nutrition that may be associated with delayed growth in children, weakness, anaemia or other medical consequences in any age group, or inadequate development of the foetus in pregnant women. Dietary practices that are endorsed by large groups of people, such as vegetarianism or religious fasting, do not constitute a basis for diagnosing ARFID.

3. Having the opposite effect with high risk teenagers

Numerous studies on the effects of the prevention of eating disorders programs show that just giving information on anorexia, bulimia, binge eating can actually be counterproductive and harmful; and even worse if the aim is deterring showing the deadly dangers. These programs are often appreciated by politicians, teachers, parents, low-risk teenagers, but for boys who are experiencing a time of difficulty or discomfort it can show a way to imitate and to identify with. **Remember that for some teenagers anorexia, with its challenge to death, can represent a fascinating and sometimes idealized condition.**

In contrast, many studies have found that interventions that stimulate discussion and development of more critical sense of the mass media messages may be useful. This is the **Life Skills approach** also recommended by WHO: this type of intervention does not deal exclusively with Anorexia and Bulimia Nervosa, but also include the various adolescent problems: especially problems with the body, self-esteem and social skills, and dealing to identify and modify concepts and misconceptions.

COMORBIDITY

Obsessive compulsive disorder with anorexia

Obsessive thoughts symptoms include:

- Fear of instigating harm to oneself or others
- Fear of being polluted by germs or dirt
- Excessive attention to superstitious beliefs
- Having the belief or idea that everything must be symmetrical
- Fear of losing things in one's possession

Compulsive behavior symptoms include:

- Excessive time spent on cleaning or washing
- Repetitively arranging or ordering things
- Hoarding unnecessary items or objects
- Repetitive habits such as counting, tapping, or chanting words in attempt to reduce anxiety
- Constantly checking of things, such as locks or switches

Anxiety and depression with bulimia and binge eating

TEMPORAL INSTABILITY AND DIAGNOSTIC TRANSITIONS

Longitudinal follow-up studies of anorexia and bulimia nervosa have found that a significant proportion of subjects change diagnostic status to another eating disorder. Diagnostic crossovers are more common in the initial years of illness and follow a predictable sequence. Typically, restrictive anorexia nervosa mutates into binge eating/purging anorexia nervosa, before crossing over to bulimia nervosa. Crossover in the opposite direction is less common. While one-third of individuals with an initial diagnosis of anorexia nervosa develop bulimia nervosa during a five-to-ten year follow-up, only 10–15% of those with an initial diagnosis of bulimia nervosa develop anorexia. Larger proportions of subjects with an initial diagnosis of bulimia nervosa develop binge eating disorder or eating disorder not otherwise specified (EDNOS). There are also numerous transitions between specific eating disorder categories and EDNOS, with the latter often representing an intermediate state on the way to recovery.

The diagnostic transitions may also extend to a relationship between feeding disorders in childhood and eating disorders in adolescence and adulthood. Restrictive eating and hyperactivity are often present in children and adolescents who deny any motivation of these behaviours by fear of gaining weight, but who later demonstrate weight phobia and receive a diagnosis of an eating disorder.

Importantly, a significant minority of cases show repeated diagnostic crossovers. For example, half of those who transit from an initial anorexia nervosa to bulimia nervosa experience a “recurrence” of anorexia nervosa within a few years. In long-standing eating disorders, diagnostic transitions are the rule, with most patients who remain ill for at least several years changing diagnostic status one or more times. Comorbid depression and alcohol abuse are associated with more diagnostic instability in eating disorders. With these rates of transitions, it is clear that the sequential diagnoses represent stages of the same disorder rather than separate disorders.

The apparent sequential comorbidity of various eating disorders is probably an artefact of applying a system of overly specified diagnostic categories with overlapping psychopathology. In ICD-10 and DSM-IV, the various eating disorder categories are mutually exclusive, so they cannot be diagnosed at the same time. However, there is no such restriction for sequential diagnoses, and neither ICD-10 nor DSM-IV takes the longitudinal course of psychopathology into account. This state of affairs is clearly unsatisfactory. On the one hand it creates an impression of an overly complex pattern of sequential comorbidity, on the other hand it misses important prognostic information. For example, it was shown that, among patients with current

bulimia nervosa, a history of anorexia nervosa is associated with reduced chance of recovery and much larger risk of transiting into anorexia nervosa. It has been proposed that bulimia nervosa should be subtyped according to history of anorexia nervosa. A more radical solution to the problem of spurious sequential comorbidity may require restrictions on frequent changes of diagnostic categories (e.g., the diagnosis of anorexia nervosa may be retained for a year after weight normalization) or establishing a combined eating disorder category to capture cases that sequentially fulfil criteria for both anorexia and bulimia nervosa and have a tendency to repeatedly change presentations.

Why girls?

Women are the most affected by these disorders. The frequency of eating disorders in males has been little studied, and it is estimated that it is 10 to 20 times less than females. In recent years, there has been an increase of interest in the feminine image "ideal" body to which they should aspire according to the rules dictated by fashion, mass media, magazines and television. The woman of our time, is a woman who "should" be ambitious and be successful and at the same time to be beautiful and look as much as possible to the figures reported in the newspapers and on TV. Some experts Anorexia represents a rejection of the role of women and the drastic weight loss could be an attempt to hide the signs of femininity (bodily shapes and menstruation).

In addition to social and cultural aspects that may in part to explain the higher prevalence of eating disorders in women, should not be overlooked biological aspects. One of these appears to be related to the role of sex hormones in the regulation of serotonin (an important brain neurotransmitter involved in the regulation of anxiety, mood, impulsivity and sensations of hunger and satiety). Some studies have found that the reduction of the later production of serotonin to a caloric restriction is much more common in females, thus confirming the presence of a possible role of female sex hormones, or of a difference related to gender.

Orthorexia nervosa – an eating disorder, obsessive-compulsive disorder or disturbed eating habit?

Anna Brytek-Matera

Summary

The purpose of this article was to describe the phenomenon of a new disorder called orthorexia nervosa. This paper proposes a theoretical framework for the definitions, prevalence, diagnostic criteria, method and treatment of orthorexia. This disturbing behaviour concerns the pathologic obsession for healthy nutrition. In contrast to eating disorders, people with orthorexia are obsessed with food quality rather than quantity and they do not care excessively for thin silhouette like in the case of patients with anorexia and bulimia nervosa. Individuals with orthorexia nervosa are obsessive about healthy food, leading to dietary restrictions and to a variety of negative psychological and social outcomes. The results of previous research show that on the one hand orthorexia is related to anorexia and bulimia nervosa, and on the other hand this syndrome is more closely allied with obsessive-compulsive disorders. In view of the studies presented here we could treat orthorexia as a disturbed eating habit which is connected with obsessive-compulsive symptoms.

food restriction / health food / eating attitude

INTRODUCTION

There is relatively little information available about orthorexia nervosa (ON) [1] because it is a new term and does not have a universally accepted definition or valid diagnostic criteria. This disturbing behaviour is not present neither in DSM-IV-TR nor in ICD-10. Orthorexia nervosa is a new concept about eating behaviour disorders [2] and is composed of pathologic obsession for biologically pure foods [3], which can cause substantial dietetic limitations [4] and which is able to lead to obsessive thoughts about foods,

affective dissatisfactions and intense social isolation [2, 5, 6].

This is not a weight loss regimen but an immense phobia about eating only “pure” food. Having orthorexia nervosa not only means that people are obsessed with eating “healthily”, but also that they have a specific attitude to food, they prepare their food in a certain way [1] as well as avoid consumption of some foods or all of a some group of foods since they consider them to be harmful for their health. The quality of the foods they consume is more important than personal values, interpersonal relations, career plans and social relationships [7]. In fact, the desire to consume healthy foods is not a disturbing behaviour in itself, and it is only defined as orthorexia nervosa when it causes a person to give up his or her normal lifestyle [1].

Orthorexia nervosa could be considered as a disorder connected with behaviour and personality due to paying too much attention to consuming healthy food, spending an excessive

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amount of time with this preoccupation, and experiencing associated dysfunctions in everyday life [1]. Orthorexia nervosa can be regarded as a harmful behaviour, because healthy eating is connected to fear and worries about health, eating and quality of food [8].

DEFINITIONS OF ORTOREXIA

The term “orthorexia” has been produced from “orthos”, which literally means “accurate, straight, right, valid or correct” and “orexis” meaning hunger or appetite. This term is used for “obsession with healthy and proper nutrition” [1, 6, 9]. Steven Bratman [6] defined this concept for the first time in 1997. The author used *orthorexia nervosa* to define a pathological fixation on the consumption of appropriate and healthy food [5]. The term of orthorexia is used to describe an unhealthy fixation with healthy eating [10]. Bağci Boci et al. [7] described orthorexia nervosa as “highly sensitive behaviour with regard to healthy nutrition”.

People with orthorexia are likely to shun foods which may contain pesticide residues or genetically modified ingredients, unhealthy fatty foods having too much salt or too much sugar and other components. The methods of preparation (a particular way of cutting vegetables) and materials (ceramics only or only wood) are also part of the obsessive ritual [11]. The configuration of the day-to-day diet, which takes up a lot of time, could be divided into four phases [2, 5]. The first section is devoted to thinking with concern and cautiously about what will be eaten on that day or the following day; a second phase pertaining to the thorough and hypercritical acquisition of each ingredient; a third phase referring to the culinary preparation of these ingredients, which must consist of techniques and procedures that are not linked to health hazards; the fourth stage is a stage of satisfaction, comfort or guilt based on the appropriate enforcement of the three preceding phases. If any of these phases is not attainable or it is not possible to abide by these rituals, a sense of guilt and concern for the violation will appear.

DIAGNOSTIC CRITERIA

In spite of the fact that the diagnostic criteria are not yet sufficiently verified, they have been

proposed for orthorexia [12]. However, Bratman and Knight [13] propose a test that allows to establish whether expression of feeding behaviour in health education ought to be considered as pathological or not. Authors [14] have suggested a short *Bratman's Orthorexia Test (BOT)* as a screening tool useful for early diagnosis of the disorder. This diagnostic test for orthorexia consists of ten questions (e.g. “Do you spend more than 3 hours a day thinking about your diet?”, “Has the quality of your life decreased as the quality of your diet has increased”, “Do you feel guilty when you stray from your diet?”). If the person answers “yes” to 4 or 5 questions, this means that it is necessary for her/him to relax more in regard to their food (unless it is a prescription diet). If the person answers “yes” to all questions, then she/he has an important obsession with healthy eating and should examine this behavior with the help of a qualified professional [13].

MEASURE OF ORTHOREXIA NERVOSA

Donini et al. [12] developed the ORTO-15 test for the diagnosis of orthorexia based on a brief 10-item orthorexia questionnaire by Bratman [13]. They used some of the items from Bratman's test and added some new items to create the ORTO-15 questionnaire. The original version of ORTO-15 was first developed in Italy. It is a 15-item self-report questionnaire that determines the prevalence of highly sensitive behaviour related to health and proper nutrition. Items assess an individual's behaviours (obsessive attitudes) related to the selection, purchase, preparation, and consumption of food that they consider to be healthy (e.g. “When you go in a food shop do you feel confused?”, “Are you willing to spend more money to have healthier food?”, “Do you think your mood affects your eating behaviour?”). Donini et al. [12] aimed to develop items that would assess individuals in terms of emotional and rational aspects. For this reason, some items assess the cognitive-rational domain, some the clinical domain, and others the emotional domain. Each item is answered on a 4-point Likert scale. Individuals are required to answer with “always – often – sometimes – never”, to reflect how often they define themselves

with these expressions. Items that reflected an orthorexic tendency are scored as “1”, and items that reflected a tendency towards normal eating behaviour are scored as “4”. Scores below 40 points in the ORTO-15 test are defined as orthorexic (having highly sensitive behaviour), eating behaviour reaches more normal standards as the score increases [12].

PREVALENCE

Donini et al. [1] investigated the prevalence rate of orthorexia nervosa by studying 404 people in Italy, and provided suggestions for diagnostic criteria. Participants were evaluated in terms of their food selection behaviours, and obsessive-compulsive and phobic symptoms. In relation to food selection behaviour, 17.1% (n = 69) of the sample were defined as ‘health fanatics’. People diagnosed with orthorexia nervosa accounted for 6.9% (n=28) of their entire sample. The specific ‘feelings’ towards food, that is ‘dangerous’ to describe a conserved product, ‘artificial’ for industrially produced products and “healthy” for biological produce, as well as the demonstration of a strong or uncontrollable yearning to eat when feeling nervous, happy, excited, or guilty has been associated with orthorexic subjects. The prevalence rate among people suffering from orthorexia nervosa was higher among men compared to women (11.3% vs 3.9%). As stated by Donini et al. [1], “it is possible that with the present trend towards the presence of men in the world of ‘body culture’ (meaning the attention given to one’s physical aspect in order to live up to the high level stereotypes dictated by society), males may have found an optimal behaviour pattern in the ‘health-fanatic’ food choice” [p. 156].

In Spain the prevalence of this disorder is at present unknown, as it is a new phenomenon, though some specialty care centers relate between 0.5% and 1% of orthorexic patients [11].

A Turkish study [7] carried out among 318 resident physicians at a hospital in Ankara, has found that 45.5% of the participants were excessively sensitive to their own eating habits and they scored below 40 points in the ORTHO-15 test. It has been seen that medical doctors who take care of the nutritional quality while buying

foods, score low in ORTO-15, which points to the fact that they have highly sensitive behaviour about healthy nutrition. The average score on the ORTO-15 is lower in those who do their shopping themselves, substitute lunch or dinner with salad/fruit, and care about the quality of the things they eat. Indeed, in this study 20.1% of the male doctors and 38.9% of the female doctors stressed that their food selection had been affected by TV programs on healthy eating habits. Like authors [7] emphasize, it is a compelling reason for the fact that such a large number of people with a high level of education are able to be so heavily impacted by the media.

It is worth pointing out that the prevalence of highly sensitive attitudes to healthy eating at this high socioeconomic level shows that medical doctors are also in need of education about the tenets of a balanced and proper diet [7].

Another study [3] has found that the prevalence of orthorexia was 43.6% among medical students (n=878) (scored above 27 in the ORTO-15 test). This research has also shown that the prevalence of orthorexia among the male medical students was higher than that among the female medical students.

Some people with orthorexia are terrified of unhealthy food due to genetic predisposition, a perfectionist personality, unrealistic demands, misinformation or social pressures [9]. The higher risk groups for orthorexia nervosa are women, adolescents, people who practice sports (bodybuilding, athletics) [2, 5, 15], medical physicians and medical students [3], dieticians [16] as well as performance artists [14]. Research concerning orthorexia nervosa among Turkish performance artists (39 men and 55 women) has shown that a total of 56.4% of the artists have orthorexia nervosa [14]. While the highest prevalence of orthorexia nervosa was recorded among opera singers (81.8%), it was 32.1% among ballet dancers and 36.4% among symphony orchestra musicians. Hungarian research [8] has shown that 56.9% of the university students have an inclination to orthorexia nervosa. This study has also indicated the correlation between orthorexia and eating and body image disturbance (if orthorexia features are present, the eating and body image disturbance are more intensive).

The results of Turkish research [15] have demonstrated that married people showed more

symptoms than unmarried ones of a tendency towards orthorexia.

WHAT KIND OF DISORDER IS ORTHOREXIA?

The clinicians and scientists still carry on the debate on whether orthorexia is a real and unique disorder and whether it is worth its own categorization in the “Diagnostic and Statistical Manual of Mental Disorders”¹ together with eating disorders (anorexia nervosa, bulimia nervosa and eating disorder not otherwise specified) [5].

On the one hand, eating disorder experts in the United Kingdom [9] argue that orthorexia is not currently identified with eating disorder because it does not begin with low self-esteem, but it may in time result in an eating disorder as the diet becomes more refined and compulsive. Orthorexia nervosa is marked by an excessive desire to consume pure and healthy foods, unlike other eating disorders in which a preoccupation with weight loss is observed [15]. Unlike anorexia and bulimia, which are obsessions about the quantity of food intake (and also physical appearance), orthorexia nervosa results from an obsession about the quality of food intake [6, 7]. In contrast to patients with anorexia and bulimia, the motivation of the people with orthorexia is not to lose weight but to achieve a feeling of perfection or purity [5]. On the other hand, even though orthorexia is not an independent diagnostic category, it has some similarities with other eating disorders: a genetic predisposition to perfectionism as well as a need for control [5]. Preoccupation with consuming healthy and pure foods can result in malnutrition and weight loss as in anorexia nervosa [3]. Nonetheless, some argue that the preoccupation with food in orthorexia is not as distinctive as in anorexia and bulimia cases, as it is only related to the quality of the food; therefore, it should not be placed in a separate category [10].

However, both disorders share many characteristics. People with orthorexia often have a history or features in common with anorexic patients.

¹ Since orthorexia nervosa is not recognized as a mental disorder by the American Psychiatric Association (it is not listed in the DSM-IV or planned to be included in the DSM-V), there are very few peer reviewed original papers published in English to date [e.g. 17, 18, 19].

They are very detailed, careful and tidy persons with an exaggerated need for self-care and protection [2, 11]. Bartina [11] supposes that when the obsession with healthy eating becomes extreme, the person starts to concentrate only on food and this leads to severe restrictions as well as biological and psychological complications (e.g. severe social isolation). Being in control of what the person eats becomes a priority. People with orthorexia have a desire to be perfect, which is consistent with other eating disorders such as anorexia or bulimia nervosa [11]. Zamora et al. [2] emphasize that in patients with orthorexia “obsessive-compulsive mechanisms with personality traits similar to those of restrictive anorexia (rigidity, perfectionism, need to control your life transferred to eating), phobic mechanism (intense anxiety regarding certain foods and their avoidance) and hypochondriac mechanisms are described” [p. 67].

Orthorexia may be affected by a distorted eating attitude and obsessive-compulsive symptoms. The relationship between changes in eating behaviour in orthorexia nervosa and obsessive-compulsive disorders are presently being studied [1, 2, 7]. Research by Arusoğlu et al. [15] has shown that orthorexic tendency could be related to a pathological eating attitude² (eating attitude was noted to be a good predictor of orthorexic tendency) and that obsessive-compulsive symptoms had a significant effect on orthorexic tendency. Individuals that had higher obsessive-compulsive symptoms had greater orthorexic tendencies. The authors’ clinical observations suggest that the number of people with an orthorexic tendency is increasing [15].

Mathieu [5] wonders why it could be possible that someone obsessed with achieving the perfect diet does not even belong in the category of eating disorders, but should instead be classified as having obsessive-compulsive disorder (OCD)?

TREATMENT AND THERAPEUTIC ORIENTATION

According to Arusoğlu et al. [15] interventions could be managed in accordance with the identified symptoms. For people with an orthorexic tendency, clinicians might focus on the yearning

² Food preoccupation, body image for thinness, vomiting and laxative abuse, dieting, slow eating, clandestine eating as well as perceived social pressure to gain weight were classified as abnormal eating attitudes.

to consume “pure healthy foods” rather than concentrating on the desire to be thin. The treatment assumptions that were developed for well-known eating disorders could then be broadened according to the needs of the orthorexic population.

A person suffering from orthorexia should realize that she/he has a problem concerning eating behaviour, understand that the quality of food consumed is not the only factor determining health and learn to eat without falling into an obsession.

The treatment of orthorexia demands a multidisciplinary team including physicians, psychotherapists and dieticians [11]. In some cases, cognitive behavioural therapy combined with selective serotonin reuptake inhibitors (such as sertraline, fluoxetine and paroxetine) can be useful in treatment of people with orthorexia [5]. It is also worth pointing out that unlike other patients with eating disorders, people with orthorexia tend to respond better to treatment, because of their concerns about their health and self-care [5]. Working with the immediate environment of patients and promoting nutrition education are early components essential to achieving the final solution to the problem [11].

CONCLUSIONS

A healthy diet should have a positive impact on health and, at the same time, not affect relationships with other people or the quality of life and emotional states. In recent years, social awareness of diet, nutrition and healthy eating has increased³, nevertheless, among some people to the point where this knowledge shows signs of an obsession. Instead of caring about providing the adequate amount of nutrients for the body, they are preoccupied with worries about what might constitute the “healthiest” food. Knowledge about human eating habits as well as eating behaviour is essential for assessing the nutritional profile of people addicted to healthy products, as it is in the case of orthorexia.

Orthorexia nervosa could not be labelled as a new eating disorder because it does not include the most characteristic symptoms of anorexia and bulimia nervosa that is immense fear of becoming fat, extreme weight-control behaviour

³ We should take into consideration that popular media and the food industry (e.g. “natural” foods, “organic” foods) also have influence on the development of orthorexia nervosa.

as well as overevaluation of shape and weight. However, since orthorexia involves disturbance of eating habits it ought to be treated as a disorder concerning abnormal eating behaviour inseparably linked with obsessive-compulsive symptoms (on account of paying too much attention to consuming healthy food and constant thinking about the quality of food intake).

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