



Types of Eating Disorders – The Latest Summary of Available Literature

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Abstract

Background: According to the generally accepted definition, eating disorders are serious disorders related to eating behaviors. What are eating disorders, what are the types and how to define them? The main purpose of this review is to gather information on the types of eating disorders available in related scientific literature.

Methods: This is a scoping review of three English databases. A data extraction form was established including the year of publication, new types of eating disorders, types of clinical groups, and eating behaviors.

Results: Recently, there has been a clear increase in number of patients with clinically confirmed eating disorders, in particular among teenagers and young adults.

Principal Conclusions: Therefore, constant improvement of knowledge on the causes of eating disorders and the possibility of treating them are essential. New types of eating disorders still remain insufficiently recognized and outlined in the literature on the topic. More and more disorders are related to each other, are mixed, or are the result of others that have occurred earlier. Eating disorders often are based on mental illness and are associated with low self-esteem.

Keywords: Eating disorders; Diagnostic criteria; Eating behavior

Introduction

What are eating disorders, what are the types and how to define them?

According to the generally accepted definition, Eating Disorders (EDs) are serious disorders related to eating behaviors [1]. They are also defined as destructive disorders in the area of eating habits or behaviors consisting in controlling body weight [2]; and, as a consequence, they lead to the deterioration of mental and physical health [3].

The search was made according to the diagnostic criteria for eating disorders described in DSM-5 and earlier ICD codes, because these are primarily the main sources of information for doctors with interdisciplinary specializations. During the search, the number of manuscripts related to a given eating disorder was taken into account, in which the eating disorders are described individually or described in combination with others in other scientific articles available in selected electronic databases including Web of Sciences, SCOPUS, PubMed between 2009 and 2018.

In the 5th edition of the American Psychiatric Association's classification of mental illness and disorders (DSM-5, Diagnostic and Statistical Manual of Mental Disorders), in the chapter entitled feeding and eating disorders, the following basic groups of disorders are included: Pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa, bulimia nervosa, binge-eating disorder, other specified feeding or eating disorder, and unspecified feeding or eating disorder. The diagnostic criteria for the eating disorders currently classified are illustrated in Tables and in Figure 1 [3-5].

Restrictive or excessive consumption of food, in the case of the above-mentioned eating disorders, can cause health problems, many diseases, and even death. Furthermore, it can lead to reduced psycho-social functioning, i.e. anxiety, depression, auto-aggression, obsessive-compulsive disorder, improper perception of one's body, reduced self-respect, avoiding social interaction, etc. [6].

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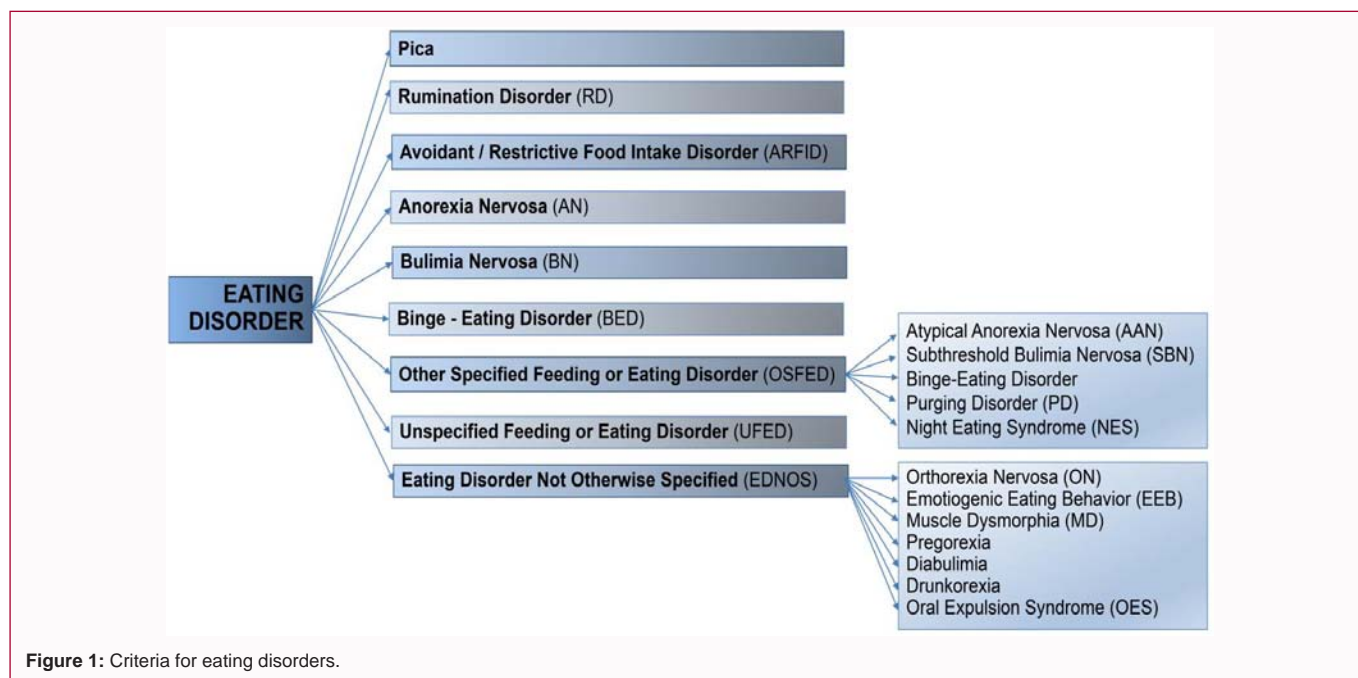


Figure 1: Criteria for eating disorders.

Recently, there has been a clear increase in number of patients with clinically confirmed eating disorders, in particular among teenagers and young adults. At the same time, it is becoming an increasingly serious social problem for public health [7]. Observing eating habits in different age groups and sexes seems to be very important, having a huge impact on the above behavior. This is because the deficiency or excess of individual nutrients and the persistence of this state for a long time may disrupt the entire nutritional cycle [8-11]. Therefore, constant improvement of knowledge on the causes of eating disorders and the possibility of treating them are essential.

The main aim of this review is to gather information on the types of eating disorders available in the scientific literature on the topic. The specific objectives relate to the re-evaluation of diagnostic criteria, and the causes and treatment of eating disorders according to the DSM-5 classification used in the daily practice of medical staff as well as earlier codes (from ICD-9-CM to ICD-11-CM), and those described only individual cases in the literature. The work presents and synthetically describes extensive topics related to eating disorders, the diagnostic criterion and possible treatment methods (Figure 1).

Current Status of Knowledge (DSM-5)

The literature on the subject still lacks sufficient (comprehensive) descriptions and possible information in line with DSM-5 on some eating disorders (Table 1). Therefore, there is a lack of patient data, because medical personnel often have problems with correctly classifying a selected unit or several other co-existing or intertwining mental disorders [3-5,12-21] (Table 1).

Pica (Distorted Appetite/Psychogenic Loss of Appetite)

People with this type of disorder consume objects that are not considered to be food and that do not contain nutritional value, i.e.: ice, soap, buttons, clay, hair, earth, sand, cigarette, butts or ashes, paint, glue, chalk or feces for at least one month (Criterion 1A) and remain under clinical observation at the same time. Eating such objects can lead to other serious diseases, i.e.: lead poisoning,

parasitic infections, intestinal obstruction and asphyxiation (aspiration). Types of distorted appetite: aerophagia (swallowing air), amylophagia (consumption of starch), cautopteryriophagia (consumption of burnt matches), conioophagia (consumption of dust), coprophagia (consumption of feces), emetophagia (consumption of vomit), geomelophagia (abnormal consumption of raw potatoes), hematophagia (consumption of blood), hyalophagia (consumption of glass, e.g. from windows or bottles), lithophagia (consumption of stones), autocannibalism (consumption of one’s own body parts), trichophagia (consumption of hair or wool), urophagia (consumption of urine), xylophagia (consumption of wood) and mucophagia (consumption of mucus) (Table 1, 2).

A distorted appetite may cause developmental disorders, which often occur in the case of pregnant women and small children (Criterion 1b), in which case it is serious and requires prolonged treatment. Some people savor and revel in the texture or taste of some non-food objects. In some cultures, consuming clay is an acceptable behavior (Criterion 1C). If a distorted appetite appears in the context of a mental illness, schizophrenia, or in pregnant women and with a developmental disorder, a separate diagnosis and additional clinical observations are required (Criterion 1D). People suffering from mental illnesses, i.e.: schizophrenia and an obsessive-compulsive disorder may develop a distorted appetite as a coping mechanism to deal with their illness.

There are many causes for the occurrence of distorted appetite. For example, a deficiency of iron, zinc or other nutrients can cause this disorder. The body will attempt to replace this nutrient with another product. In pregnant women, anemia (resulting from iron deficiency) and impaired taste in taste buds on the tongue (resulting from zinc deficiency in the body, especially in the taste receptor protein on the tongue) can cause distorted appetite. An improperly composed diet and malnutrition can also lead to distorted appetite. In these cases, consuming non-food objects can give those suffering with the disorder a feeling of fullness.

Treatment of distorted appetite begins with treating the

Table 1: Diagnostic criteria for eating disorders [3-5,12-21].

No.	Eating Disorder	Diagnostic Criterion
1	Pica	A Persistent consumption of non-food objects for at least one month.
		B Consumption of non-food objects developmentally inappropriate for an individual.
		C Abnormal eating behaviors are not recommended nor supported in normal nutritional practice.
		D If the eating behavior occurs in the context of another mental disorder (intellectual disorder), autism spectrum disorder, schizophrenia, or medical condition (pregnancy), it is sufficiently severe to warrant additional clinical attention.
2	Rumination Disorder (RD)	A Persistent or recurring regurgitation of recently swallowed food within the last month, followed by spitting it out or re-chewing and swallowing it.
		B Recurrent regurgitation that is not the result of and is not associated with the functioning of the gastrointestinal tract or other medical conditions (e.g. gastroesophageal reflux, pyloric stenosis).
		C Intake disorders do not occur exclusively in the following types of eating disorders: AN, BN, BED, or ARFID.
		D Symptoms may occur as part of a mental disorder (including intellectual disabilities (impaired intellectual disorders or other neurodevelopmental disorders) and are serious enough to require additional clinical observation.
3	Avoidant/Restrictive Food Intake Disorder (ARFID)	Impaired process of consuming food and feeding (e.g.: an apparent lack of interest in food itself or eating, an avoidance of eating meals on the basis of the sensory characteristics of food, feelings of concern resulting from the adverse consequences of eating). Prolonged abnormal energy supply and/or basic nutrients associated with one (or more) of the following activities leads to:
		A 1. Significant weight loss (or failure to achieve expected weight or height in children), 2. Significant nutritional deficiency, 3. Dependence on enteral feeding or oral nutritional supplements, 4. Visible interference in psychosocial functioning.
		B This type of disorder cannot be explained by lack of available food or an associated culturally sanctioned practice.
		C The eating disorder does not occur exclusively in the case of AN or BN. There is no evidence that the disorder is the result of excessive care of body weight or appearance.
4	Anorexia Nervosa (AN)	D The disorder cannot be attributed to an abnormal health condition or an undiagnosed mental disorder. If the eating disorder occurs simultaneously with a coexisting mental disorder, the diagnosis of the seriousness and treatment of the disorder exceeds the routine treatment procedure and requires additional clinical observation.
		A Restriction of energy intake relative to requirements and insufficient body weight adequate to age (below the minimal expectancy in children and adolescents), sex and health condition.
		B Intense fear of gaining weight or persistent intent to lose weight, even though underweight.
		C Disturbed process of assessing body weight or appearance, and an inability to regard insufficient body weight as a serious problem.
5	Bulimia Nervosa (BN)	Recurrent episodes of binge eating:
		A 1. Eating more food than most people would in a particular period of time under similar circumstances, 2. Lack of control over the above-mentioned episode.
		B Persistent, recurrent compulsive behaviors to prevent weight gain: excessive exercise, starvation, misuse of laxatives or diuretics (and others), self-induced vomiting.
		C A combination of two of the above recurrent behaviors once a week for three months.
		D Excessive assessment of body shape and weight.
6	Binge-Eating Disorder (BED)	E It also occurs aside from anorexia nervosa.
		Recurrent episodes of binge eating:
		A 1. Eating more food than most people would in a particular period of time under similar circumstances, 2. Lack of control over the above-mentioned episode.
		B The binge eating episodes are associated with at least three of the following: 1. Eating at a faster rate than most people, 2. Eating until feeling uncomfortably full, 3. Eating large amounts of food despite not feeling hungry, 4. Eating alone because of feelings of embarrassment due to the amount of food consumed, 5. Feelings of guilt, depression and disgust after an episode of binge eating.
		C Strong pain after binge eating.
7	Other Specified Feeding or Eating Disorder (OSFED)	D Binge eating episodes occur at least once a week for three months.
		E Episodes do not occur regularly in association with compulsive behaviors and do not occur exclusively in the course of anorexia nervosa and bulimia nervosa.
		Atypical Anorexia Nervosa (AAN) 1 The criteria are identical as in the case of anorexia nervosa with the exception of a significant loss of body weight as it remains within the normal range or even above.
		Subthreshold Bulimia Nervosa (of low frequency and/or limited duration) (SBN) 2 The criteria are similar as in the case of bulimia nervosa with the exception of attacks of binge eating and inadequate compulsive behaviors less than once a week and/or in a period of three months.
		Binge-Eating Disorder (of low frequency and/or limited duration) 3 The criteria are similar as in the case of the binge-eating disorder with the exception of attacks of binge eating less than once a week and/or in a period of three months.
8	Unspecified Feeding or Eating Disorder (UFED)	Purging Disorder (PD) 4 Repeated purging (e.g. by self-provoked vomiting, misuse of laxatives, diuretics or other medications) affecting body weight and shape, however, without attacks of binge eating.
		Night Eating Syndrome (NES) 5 Regular episodes of consuming food at night, feelings of strong need to eat after waking or excessive eating after an evening meal. Such a person remembers and is fully aware of his/her actions. This type of behaviour causes functional disability and/or significant pain.
		This criterion is applied in situations in which symptoms characteristic of eating disorders prevail, causing clinically significant pain and impairment to professional or social functioning. However, they do not completely fulfill the criteria for the above-mentioned disorders. Doctors often apply this criterion in situations in which obtaining information in order to determine a particular disorder is not possible and when incomplete information for properly classifying a disorder is obtained.

9	Eating Disorder Not Otherwise Specified (EDNOS)	1. Orthorexia Nervosa (ON) This disorder is characterized by an obsession with eating exclusively health foods, which leads to significant food restrictions.
		2. Emotiogenic Eating Behavior (EEB) Stress is related to nutrition in an essential and multidimensional way. A high level of occupational stress (work overload) impacts workers' frequently, which may result in obesity.
		3. Muscle Dysmorphia (MD) People who suffer from this disorder are particularly interested in body structure, muscle size and using substances to enhance their development and increasing their muscle weight, similarly to the Greek god Adonis spending many hours in front of the mirror.
		4. Pregorexia This disorder occurs exclusively in pregnant women. Behaviors include: dietary restrictions and/or intensive physical exercise and/or compulsive behaviors aimed at maintaining low body weight.
		5. Diabulimia This is an eating disorder that only occurs in people with type 1 diabetes. It consists in intentional omission or restriction of insulin doses in order to control or lose body weight.
		6. Drunkorexia This form of eating disorder is associated with alcohol addiction. It is based on restricting food intake in order to consume more alcohol without anxiety or fear of gaining weight.
		7. Oral Expulsion Syndrome (OES) This syndrome consists in consuming meals by savoring the taste, texture and aroma of a given dish without swallowing it and then spitting it on the plate.

Table 2: Pica-a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder – Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Pica			
Synonyms: eating non-food material; in adulthood and / or infancy and childhood. This eating disorder is characterized by the persistent eating of non-nutritive substances such as clay or soil; this behavior must be inappropriate to the level of the individual's development. The persistent eating of non-nutritive substances for a period of at least one month. Perverted appetite of non-organic origin. Persistent eating of non-nutritive substances (such as soil, paint chippings, etc.). It may occur as one of many symptoms that are part of a more widespread psychiatric disorder (such as autism), or as a relatively isolated psychopathological behaviour; only the latter is classified here. The phenomenon is most common in intellectually disabled children and, if an intellectual disability is also present. Pica is characterized by the regular consumption of non-nutritive substances, such as non-food objects and materials (e.g., clay, soil, chalk, plaster, plastic, metal and paper) or raw food ingredients (e.g., large quantities of salt or corn flour) that is persistent or severe enough to require clinical attention in an individual who has reached a developmental age at which they would be expected to distinguish between edible and non-edible substances (approximately 2 years of age). That is, the behaviour causes damage to health, impairment in functioning, or a significant risk due to the frequency, amount or nature of the substances or objects ingested.	307.52		
		F98.3, F50.8	
			6B84

complications that result from consuming non-food objects. Medical professionals should then request a psychological assessment in order to determine if the patient has an obsessive-compulsive disorder or other psychological problems. Such problems are treated with psychological therapy and medication. Distorted appetite in children and pregnant women often disappears spontaneously without treatment within a couple of months from the moment of its diagnosis. Pharmacological treatment or/and supplementation of nutrient deficiencies, which are one of the causes of distorted appetite, alleviate the symptoms of the disorder. In some cases, distorted appetite can last for years, in particular in people with mental or physical disabilities [3,4,22,23].

Rumination Disorder (RD)

Rumination disorder is a chronic functional disorder of the gastrointestinal tract with undetermined etiology and pathogenesis. It is manifested by the occurrence of unprovoked vomiting and repetitive regurgitation of a portion of the last consumed meal, followed by re-chewing and re-swallowing it, or spitting it out (Criterion 2A) [3,24,25] (Table 1,3).

This type of disorder occurs in almost every age; however it affects most frequently infants. This disorder is rare in adults; however it is more common in women. The earliest reports describe cases relating to newborns, infants and children [3,26,27] and people with mental disorders and intellectual disabilities (Criterion 2D) [27,28]. Subsequent cases refer to men and women of all ages with various levels of intellectual performance [25,29,30]. So far, the exact pathophysiological mechanism of rumination disorders has not yet

been defined. The functioning of the lower esophageal sphincter and also an increased gastric sensitivity to stimuli has mainly been observed in studies [31]. In addition, there was an increase in acidity of gastric content as in reflux disease, but only in the first hour after eating a meal (criterion 2B). However, recurrent regurgitation is not the result of and is not associated with the functioning of the gastrointestinal tract or other medical conditions. Rumination disorder was initially associated with anorexia or bulimia (Criterion 2C) [24], however, in the case of both disorders, it is rather related to restrictive energy intake with a meal and obsessive weight control (a feature that is not characteristic for this disorder).

The most important element of treating adults without a mental disability is first and foremost clarifying the characteristics of the disorder while calming the patient at the same time. Behavioral psychotherapy (e.g. relaxation techniques, diaphragmatic breathing exercises, biofeedback) is usually applied in the treatment process. In pharmacological treatment, proton pump inhibitors are used as a supportive medication with patients who experience heartburn mainly in order to protect the esophagus from acidic gastric contents.

In the therapeutic process for infants, education and assisting mothers in satisfying their infants' emotional needs is recommended. A useful element of therapy can be assisting mothers with performing actions that satisfy needs, e.g. feeding, hugging or comforting her child. Additional elements of behavioral therapy are also introduced when treating children with a mental disability [32,33].

In treatment for older children and adolescents, behavioral psychotherapy [10], and the use of tricyclic antidepressants are

Table 3: Rumination disorder - a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder - Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Rumination Disorder			
Regurgitation, of nonorganic origin, of food with re-swallowing	307.53		
A feeding disorder of varying manifestations usually specific to infancy and early childhood. It generally involves food refusal and extreme faddiness in the presence of an adequate food supply, a reasonably competent caregiver, and the absence of organic disease. There may or may not be associated rumination (repeated regurgitation without nausea or gastrointestinal illness). The rumination-regurgitation disorder is characterized by the intentional and repeated bringing up of previously swallowed food back to the mouth (i.e., regurgitation), which may be re-chewed and re-swallowed (i.e., rumination), or may be deliberately spat out (but not as in vomiting). The regurgitation behaviour is frequent (at least several times per week) and sustained over a period of at least several weeks. The regurgitation behaviour is not fully accounted for by another health condition that directly causes regurgitation (e.g., oesophageal strictures or neuromuscular disorders affecting oesophageal functioning) or causes nausea or vomiting (e.g., pyloric stenosis). Rumination-regurgitation disorder should only be diagnosed in individuals who have reached a developmental age of at least 2 years.		F98.2	6B85

Table 4: Avoidant/restrictive food intake disorder—a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder – Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Avoidant/Restrictive Food Intake Disorder			
Synonyms: binge eating disorder; bingeing; inability to face food; feeding disorder of infancy or early childhood; feeding disorder, infancy or early childhood; loss of appetite, feeding disorder of infancy or early childhood of nonorganic origin; infantile feeding disturbances of nonorganic origin; loss of appetite of nonorganic origin non-organic; loss of appetite, psychogenic; no interest in food; non-organic infant feeding disturbance; non-organic loss of appetite; psychogenic feeding disorder of infancy and childhood; psychogenic loss of appetite; refusal to eat in presence of others; refusing food; self-induced purging; self-induced purging to lose weight	307.59		
Psychogenic loss of appetite		F50.82	
Avoidant-restrictive food intake disorder (ARFID) is characterized by abnormal eating or feeding behaviors that result in the intake of an insufficient quantity or variety of food to meet adequate energy or nutritional requirements. The pattern of restricted eating has caused significant weight loss, failure to gain weight as expected in childhood or pregnancy, clinically significant nutritional deficiencies, dependence on oral nutritional supplements or tube feeding, or has otherwise negatively affected the health of the individual or resulted in significant functional impairment. The pattern of the eating behaviour does not reflect concerns about body weight or shape. Restricted food intake and its effects on weight, other aspects of health, or functioning is not better accounted for by a lack of food availability, the effects of a medication or substance, or another health condition.			6B83

effective, and enteral nutrition is implemented in cases of body weight loss.

Avoidant/Restrictive Food Intake Disorder (ARFID)

Avoidant/Restrictive Food Intake Disorder (ARFID) has changed and additionally expanded the DSM-5 book on eating disorders and mainly affects infants or children in the early stages of adolescence. The main feature in diagnosing this disorder is the avoidance or restriction of food intake (Criterion 3A), confirmed clinically, which pertains to failure to meet food requirements or insufficient energy supply through oral food intake. In addition, at least one or more of the following features occur: Significant weight loss, significant malnutrition (or other similar health effects), an addiction to enteral nutrition or oral dietary supplements, and confirmed interference in psychosocial functioning. Clinical confirmation is recommended in order to determine if the weight loss and slowed height is significant (Criterion 3A1), because it may be characteristic for children and youth, who have not yet completed the process of intense development [3] (Table 1, 4).

Determining significant nutritional deficiencies in the organism (Criterion 3A2) is also based on the patient’s clinical assessment (i.e.: assessing the frequency of eating, psychical examination and laboratory tests). Related health effects may be similar to those observed in the case of anorexia nervosa (e.g.: hypothermia, bradycardia, anemia) [34]. In serious cases, particularly in the case of small children, malnutrition may be life-threatening. Frequent use of enteral nutrition or oral dietary supplements (Criterion 3A3) indicates that such feeding is absolutely necessary and required. Patients requiring additional feeding include: infants with a developing insufficiency where feeding occurs through a nasogastric tube; children with a

neurodevelopmental disorder, who should absolutely be given dietary supplements; patients who wear a gastric tube or use oral dietary supplements simultaneously without any medical contraindications. Inability to participate in daily social activities, i.e. consuming meals with others or maintaining social relations resulting from occurring interferences could disturb psychosocial functioning (Criterion 3A4).

Avoidant/Restrictive Food Intake Disorder (ARFID) does not include avoiding or restricting the consumption of food in connection with a lack of available food products or cultural practices (e.g.: observing a fast in a particular religion or in a normal diet) (criterion 3B). It also does not include behaviors associated with individual human development (e.g.: picky eating in the case of small children, restrictive eating in the elderly). This disorder is not associated with excessive care of body weight or outwardly appearance (Criterion 3C) or simultaneously with other medical factors or even mental disorders [3] (Criterion 3D).

For some people, avoiding or restricting food consumption may be the result of the sensory characteristics of a given food, i.e. its appearance, color, scent, texture, temperature or the taste of the meal/product. To present, the following behaviors have been described in literature on the topic as: "restrictive eating" [35], "selective eating" [36], "choosy eating" [37], "perseverant eating" [38], "chronic food refusal" [39] and "food neophobia" [40], which are characterized by a tendency to refuse eating particular brands of food or not tolerate the scent of meals consumed by others. People with an increased sensory sensitivity and people with autism demonstrate similar eating behaviors [3,41].

Avoidant/Restrictive Food Intake Disorder (ARFID) may be conditioned by a negative reaction associated with consuming a given amount of food caused by an experience that could have occurred

Table 5: Anorexia Nervosa - a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder – Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Anorexia Nervosa			
Synonyms: binge-eating purging type; purging subtype; restricting subtype; restricting type. A disorder most often seen in adolescent females characterized by a refusal to maintain a minimally normal body weight, an intense fear of gaining weight, a disturbance in body image, and, in post-menarcheal females, the development of amenorrhea. This is an eating disorder marked by an intense fear of gaining weight, a refusal to maintain a healthy weight, and a distorted body image. People with anorexia nervosa have an abnormal loss of appetite for food, try to avoid eating, and eat as little as possible. It is an eating disorder that is characterized by the lack or loss of appetite, known as anorexia. Other features include excess fear of becoming overweight; body image disturbance; significant weight loss; refusal to maintain minimal normal weight; and amenorrhea. This disorder occurs most frequently in adolescent females. (apa, Thesaurus of Psychological Index Terms, 1994). This is a syndrome in which the primary features include excessive fear of becoming overweight, body image disturbance, significant weight loss, refusal to maintain minimal normal weight, and amenorrhea. This disorder occurs most frequently in adolescent females. This is a syndrome in which the primary features include excessive fear of becoming overweight, body image disturbance, significant weight loss, refusal to maintain minimal normal weight, and amenorrhea; disorder occurs most frequently in adolescent females.	307.1		
A disorder characterized by deliberate weight loss, induced and sustained by the patient. It occurs most commonly in adolescent girls and young women, but adolescent boys and young men may also be affected, as well as children approaching puberty and older women up to the menopause. The disorder is associated with a specific psychopathology whereby a dread of fatness and flabbiness of body contour persists as an intrusive overvalued idea, and the patients impose a low weight threshold on themselves. There is usually under nutrition of varying severity with secondary endocrine and metabolic changes and disturbances of bodily function. The symptoms include restricted dietary choice, excessive exercise, induced vomiting and purgation, and use of appetite suppressants and diuretics.		F50.0	
Anorexia Nervosa is characterized by a significantly low body weight for the individual's height, age and developmental stage (body mass index (BMI) less than 18.5 kg/m ² in adults and BMI-for-age under fifth percentile in children and adolescents) that is not caused by another health condition or to the unavailability of food. Low body weight is accompanied by a persistent pattern of behaviors to prevent the restoration of normal weight, which may include behaviors aimed at reducing energy intake (restricted eating), purging behaviors (e.g., self-induced vomiting, misuse of laxatives), and behaviors aimed at increasing energy expenditure (e.g., excessive exercise), typically associated with a fear of weight gain. Low body weight or shape is central to the person's self-evaluation or is inaccurately perceived to be normal or even excessive.			6B80

after or while waiting for a meal, i.e. choking, traumatic/painful examination on the gastrointestinal tract (e.g.: esophagoscopy), or as a result of reoccurring vomiting.

There are several characteristics that distinguish disorders associated with avoiding or restricting food intake including a lack of interest in food itself or selected food products, which leads to weight loss and/or impaired growth. Infants and small children are reluctant to eat meals and do not inform their parents/caregivers when they are hungry and, at the same time, engage in other activities/games in order to avoid eating. Other symptoms may include drowsiness or excessive agitation during feeding. However, in older children and adolescents, avoiding or restricting food intake may be related with general emotional disorders, which are not diagnosed as, among others: anxiety, bipolar disorder, at times described as an “food avoidance emotional disorder” [3,42].

It should be noted that this type of disorder occurs more often in children than in adults. A diagnosis of this illness, from the moment of the first symptoms to the moment of clinical symptoms, should occur as quickly as possible. Individual features that predispose the occurrence of the disorder are diverse and include: physical, social and emotional difficulties [3,42].

Anorexia Nervosa (AN)

This disorder is literally a neurotic loss of appetite, which according to DSM-5, is characterized by a loss of 15% of body weight along with the following symptoms: Resistance to maintaining appropriate body weight; a suggested weight loss below 85% according to Ideal Body Weight (IBW); intense fear of weight gain; distorted body image and refusal to increase the low weight; lack of three menstrual cycles in a row. However, the DSM-5 assessment criterion has changed, and it is recognized there as a permanent disorder with significant weight loss; permanent interference in weight gain; failure to recognize low body weight and distorted body image; lack of menstruation is no longer present in the criterion [3,4,41] (Table 1, 5).

Presently, three features can be distinguished: Fixed reduction of energy consumption, intense fear of weight gain or further weight reduction, an improper perception of one's body. The patient's age, sex and physical health condition are taken into consideration (Criterion 4A). As body weight must be significantly low in this criterion, i.e. according to the Centers for Disease Control (CDC) and World Health Organization (WHO), a Body Mass Index (BMI) indication below 17.0 kg/m² in adults is adopted. At the same time, the BMI and age index in percentiles is used with children and adolescents (BMI below 5 percentiles according to CDC). However, it should be kept in mind that there are no clear levels determining if body weight is significantly low, since their development trajectory still needs to be assessed. In this criterion, the physician takes the numerical values, body structure, and medical history including body weight and potential pathophysiological changes.

Criterion 4B is characterized by an intense fear of weight gain. There may be even a stronger sense of fear of its growth along with further permanent weight loss.

Patients suffering from a distorted image of body shape and weight are assigned to Criterion 4C. Some patients may feel and see only certain elements of their body (e.g. thighs, buttocks, and stomach) or wrongly assess their body. They obsessively take various regular measurements of troublesome places, not understanding the seriousness of the medical condition. Patients treat significant weight loss as a particular success, and/or potential minimal weight gain as a huge failure in self-control [3].

People suffering with this disorder have a lower level of emotional awareness; limited skills in coping with stress, poorly tolerating it; are perfectionists; are characterized by obsessiveness, inflexibility, neuroticism, negative emotionality, avoiding harm; a sense of their own ineptitude; depressive moods; social withdrawal; insomnia; loss of libido; occasional fear of eating in the presence of others; and inflexible thinking. Among dietetic factors, a too strict diet used by parents/caregivers and the bad habits of caregivers who have various

Table 6: Bulimia nervosa - a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder - Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Bulimia Nervosa			
An eating disorder that is characterized by a cycle of binge eating (bulimia or bingeing) followed by inappropriate acts (purging) to avert weight gain. Purging methods often include self-induced vomiting, the use of laxatives or diuretics, excessive exercise, and fasting. This is an eating disorder that involves eating massive quantities of food (binge eating) and then eliminating the food by inappropriate compensatory methods to prevent weight gain, such as self-induced vomiting or strong laxatives. This also includes overeating of non-organic origin.	307.51		
A syndrome characterized by repeated bouts of overeating and an excessive preoccupation with the control of body weight leading to a pattern of overeating followed by vomiting or use of purgatives. This disorder shares many psychological features with anorexia nervosa, including an overconcern with body shape and weight. Repeated vomiting is likely to give rise to disturbances of body electrolytes and physical complications. This often, but not always, includes a history of an earlier episode of anorexia nervosa with the interval ranging from a few months to several years.		F50.2	
Bulimia Nervosa is characterized by frequent, recurrent episodes of binge eating (e.g., once a week or more over a period of at least one month). A binge eating episode is a distinct period of time during which the individual experiences a subjective loss of control over eating, eating notably more or in a different manner than usual, and feels unable to stop eating or limit the type or amount of food eaten. Binge eating is accompanied by repeated inappropriate compensatory behaviors aimed at preventing weight gain (e.g., self-induced vomiting, misuse of laxatives or enemas, strenuous exercise). The individual is preoccupied with body shape or weight, which strongly influences self-evaluation. The individual is not significantly underweight and therefore does not meet the diagnostic requirements of Anorexia Nervosa.			6B81

Table 7: Binge-Eating Disorder—a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder - Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Binge-Eating Disorder			
No description	-		
A disorder associated with three or more of the following: eating until feeling uncomfortably full; eating large amounts of food when not physically hungry; eating much more rapidly than normal; eating alone due to embarrassment; a feeling of disgust, depression or guilt after overeating. According to the criteria, this occurs on average at least 2 days a week for 6 months. Binge eating is not associated with the regular use of inappropriate compensatory behavior i.e. purging excessive exercise, etc., and does not co-occur exclusively with bulimia nervosa or anorexia nervosa.		F50.81	
Binge eating disorder is characterized by frequent, recurrent episodes of binge eating (e.g., once a week or more over a period of several months). A binge eating episode is a distinct period of time during which the individual experiences a subjective loss of control over eating, eating notably more or differently than usual, and feels unable to stop eating or limit the type or amount of food eaten. Binge eating is experienced as very distressing, and is often accompanied by negative emotions such as guilt or disgust. However, unlike in bulimia nervosa, binge eating episodes are not regularly followed by inappropriate compensatory behaviors aimed at preventing weight gain (e.g., self-induced vomiting, misuse of laxatives or enemas, strenuous exercise).			6B82

diagnosed medical conditions, e.g. obesity, diabetes, cardiovascular diseases, can be included. It is also the cause of the widespread negative body figure created by the media and still used in various religious practices. Patients with this condition are usually brought in by family members. It is possible to distinguish here patients with a restrictive food intake starting from of anorexia nervosa and with attacks of overeating/purging and with excessive physical activity, and with a tendency of abusing alcohol and other substances [3,4,41].

Bulimia Nervosa (BN)

Three criteria are most commonly included here: Recurrent episodes of overeating-Criterion 5A; recurrent abnormal consumptive behaviors with an inability to gain weight-Criterion 5B; excessive influence of body weight and shape on self-esteem-Criterion 5D. Meanwhile, Criterion 5C describes attacks of overeating with abnormal compensatory behavior occurring regularly, at least once a week for a period of three months. This most often occurs in women [3] (Table 1, 6).

In criterion 5A1, episodes of overeating should be understood as consuming an amount of food that most people would not be able to eat in a given period of time. This period of time should be understood as not exceeding two hours, which could start at a party or meeting and be continued at home. In Criterion 5A2, a feeling of losing control over food, e.g. an inability to refuse to start eating or stop eating are noted. This type of disability is not always complete, because it does not have to be interrupted during a phone or internet conversation, however, it is immediately stopped once a spouse or friend enters the

room. The symptom of losing control has been replaced by stopping efforts to control it. Such attacks may even be planned, during which various food products are consumed; most often those a given person avoids and in inappropriate amounts. People with bulimia nervosa take great efforts to hide their problem. Attacks of overeating sometimes last to the moment of physical pain. It can also be caused by several stressful situations, physical restrictions of food, boredom or negative emotions associated with body weight and shape [3,4,43].

Another very dangerous feature of bulimia nervosa is recurrent abnormal compensatory behaviors preventing weight gain-Criterion 5B. This includes laxative or purging behaviors, among which the most serious is vomiting. The person senses physical relief after overeating, and simultaneously does not experience fear of weight gain. At time, the main goal is to provoke vomiting, which occurs even after a small meal. Various ways of provoking vomiting are used, e.g. pharyngeal reflex by inserting a finger or tool, in consequence recognizing them as habitual activities or as desired. It is also common to abuse laxatives and diuretic medications prior to/after a meal. Sometimes, rectoclysis is also used in addition to the other purging methods, and rarely independently. Cases of taking thyroid hormones in order to prevent weight gain, or in the case of patients with diabetes, omitting/reducing insulin doses to slow down food metabolism during an attack. Such people, fearing weight gain, are to refrain from eating the whole day and even several days, or also excessively play sports. They are able to play sports to the point of interfering with other important vital activities, often at an inappropriate time or situation, or also regardless of injuries or medical conditions [3,43].

Table 8: Atypical anorexia nervosa - a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating Disorder - Description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Atypical Anorexia Nervosa			
No description		-	
Disorders that fulfill some of the features of anorexia nervosa but in which the overall clinical picture does not justify that diagnosis. For instance, one of the key symptoms, such as amenorrhea or marked dread of being fat, may be absent in the presence of marked weight loss and weight-reducing behaviour. This diagnosis should not be made in the presence of known physical disorders associated with weight loss.			F50.1
No description			

Table 9: Unspecified feeding or eating disorder—a short description according to ICD-9-CM - ICD-11-CM [3-5].

Eating disorder – description	ICD-9-CM	ICD-10-CM	ICD-11-CM
Unspecified Feeding or Eating Disorder			
A broad group of psychological disorders with abnormal eating behaviors leading to physiological effects from overeating or insufficient food intake. A group of disorders characterized by physiological and psychological disturbances in appetite or food intake. Eating disorders are serious behavior problems. They include: anorexia nervosa, in which you become too thin, but you don't eat enough because you think you are fat; bulimia nervosa, involving periods of overeating followed by purging, sometimes through self-induced vomiting or using laxatives; binge-eating, which is out-of-control eating; women are more likely than men to have eating disorders. They usually start in the teenage years and often occur along with depression, anxiety disorders and substance abuse. Eating disorders can cause heart and kidney problems and even death. Getting help early is important. Treatment involves monitoring, mental health therapy, nutritional counseling and sometimes medicines. Group of disorders characterized by physiological and psychological disturbances in eating behavior, appetite or food intake.	307.5		
Synonyms: Eating disorder A broad group of psychological disorders with abnormal eating behaviors leading to physiological effects from overeating or insufficient food intake. A group of disorders characterized by physiological and psychological disturbances in appetite or food intake. Eating disorders are serious behavioral problems. They include anorexia nervosa, in which you become too thin, but you don't eat enough because you think you are fat bulimia nervosa, involving periods of overeating followed by purging, sometimes through self-induced vomiting or using laxatives binge-eating, which is out-of-control eating women are more likely than men to have eating disorders. They usually start in adolescence and often occur along with depression, anxiety disorders and substance abuse. Eating disorders can cause heart and kidney problems and even death. Getting help early is important. Treatment involves monitoring, mental health therapy, nutritional counseling and sometimes medicines. Group of disorders characterized by physiological and psychological disturbances in eating behavior, appetite or food intake.		F50.9	
No description			6B8Z

Meanwhile, in Criterion 5D, people overestimate the significance of their body's shape and weight, which greatly influences their self-esteem and self-worth. Criterion 5E is recognized aside from anorexia nervosa [3].

Quite often, people with bulimia nervosa have a body weight that is within the normal range or slightly exceeds it (BMI 18.5 kg/m² to 30.0 kg/m²). Between episodes of overeating, they follow a special diet with a restricted amount of calories or such food products that will trigger them or cause obesity. A menstrual cycle may disappear or occur irregularly, in women. Among the remaining conditions, esophageal perforation, cardiac arrhythmias, gastrointestinal perforation, water-electrolyte disorder, severe cardiomyopathies and myopathies, rectal prolapse, chipped teeth, tooth decay, scares on palms/ankles (in people provoking vomiting) should be distinguished. In the case of this disorder, a high risk of suicide and severe social withdrawal also occurs. Bulimia nervosa often occurs in association with various other mental illnesses, most often with one of them. They may include various symptoms of depression, e.g. low self-esteem or bipolar and depressive disorders. Bulimia nervosa is often their cause or effect [3,4,43,44].

Binge Eating Disorder (BED)

The most important features of binge-eating disorder are recurrent attacks of overeating at least once a week throughout a period of three months. This disorder also has similar characteristics as in the case of bulimia nervosa (Criterion 6A). However, these attacks are often accompanied by severe pain (Criterion 6C) along with at least three elements found in Criterion 6B. People with this disorder

carefully hide their problem out of a feeling of shame. It is therefore often caused by negative feelings, emotions or emotions connected with assessments of body weight and food, and sometimes tiredness and personal relations. The triggering factors mentioned above can be alleviated or eliminated for a short period of time by attacks of overeating. Unfortunately, they are not able to prevent subsequent effects, i.e. permanent low self-esteem or dysphoria. This disorder can occur in anyone regardless of body weight, however only overweight or obese people seek help. There is a difference between obese people with and without this disorder. The second example of patients (with BED) are characterized by consuming more caloric food and not controlling its quality, experiencing greater pain, a significantly more frequent coexistence of other mental illnesses (depression, bipolar disorder, anxiety, borderline personality disorder, less frequent use of addictive substances) and experiencing a lower quality of life with regards to health, lower level of satisfaction, greater mortality and morbidity in connection with increased medical care [3,45] (Table 1, 7).

The etiology of this disorder is still not entirely known, however family and genetic occurrences, and cases in industrialized countries are mentioned. Binge-eating disorder is more common in Caucasian women, adolescents and students, and sometimes occurs in children with a greater number of mental symptoms. The disorder may also occur before, after or during puberty, however, such people are older than those with bulimia nervosa or anorexia nervosa. Although remission ratios of this disorder are one of the highest, this disorder is very persistent in terms of treatment, its severity and duration of treatment. Unfortunately, they often transform into other eating disorders.

Difficulties in diagnosing this disorder consist in failure to observe clear and persistent food restrictions and rather frequent attempts at food restriction. People with this disorder who have a more distorted image of their body weight and shape also are characteristically obese and also have other mental illnesses. The treatment process is only effective for this disorder and not obesity [3,45].

Other Specified Feeding or Eating Disorder (OSFED)

This type of disorder is classified when it is not possible to clearly and exclusively identify and indicate other eating disorders [3,46]. In existing literature on the topic, there is a lack of comprehensive information, clinically confirmed cases, descriptions, causes and treatment methods pertaining to these eating disorders (Table 1).

Atypical anorexia nervosa (AAN)

This is a disorder that, according to the DMS-5 classification, was not fully described correctly and often was placed in the middle of eating disorder categories (between anorexia nervosa and binge-eating disorder). Of course, it also is characterized by significant weight loss associated with excessive exercise and overeating, vomiting, laxative or diuretics abuse, or a combination of these behaviors. It most often affected children and teenagers due to an incorrect diagnosis and this caused a problem in treatment. The background of losing/gaining weight, age and proper height seem to be quite significant. However, in contrast to anorexia nervosa, proper body weight, being overweight or obese, or even a being slightly underweight often coexists with serious medical conditions. Patients perceive themselves in terms of their BMI assessment. The classification of this disorder was also acknowledged to be a variant of anorexia nervosa, mainly in patients with sensory problems associated with autism when eating; patients consuming meals, but with other medical illnesses; those without fear of gaining weight or with a distorted body image. At present, patients are classified just as seriously as anorexia nervosa, however some differences exist, e.g. with the Avoidant/Restrictive Food Intake Disorder (ARFID). People suffering with this disorder are characterized by impulsiveness and seeking sensation; problems with maturing, identification, Obsessive-Compulsive Personality Disorder (OCPD) or a unique personality disorder; and self-mutilation and suicide are also common. The American Academy of Eating Disorders indicates that every disorder including atypical anorexia nervosa can be caused by stressful moments in life, e.g. studying, the loss of a loved one, changing places of residence, sexual abuse, sexual disorders, and post-traumatic stress [4,41,44] (Table 1, 8).

Patients with this disorder are afraid of gaining weight as a result of strong traumatic experiences. In order to correctly classify this disorder, a very accurate medical history that includes an observation of every body system and the functioning of bodily organs should be conducted. It is also essential to carry out a full medical history and mental health assessment together with the patient's family medical history. Nutritional programs should be adjusted to age, sex and the abilities of the organism with gradual weight gaining order to prevent a reoccurrence of illness with more serious consequences. With overweight/obese people, exercises aimed at enhancing their mental condition (anxiety, depression) are also included. Pharmacological treatment is applied/recommended only under medical supervision. It is also important that the method of psychotherapy used is selected adequately for people continuing treatment after other disorders or people of different age groups (various methods for adults and children). Building one's own self-esteem, stimulating it, discovering

new areas of success, making new acquaintances (at school, in the neighborhood), strengthening a feeling of belonging are also essential [41,44,45].

Subthreshold Bulimia Nervosa (of low frequency and/or limited duration) (SBN)

This is a new eating disorder that is difficult to describe and classify. Its criteria are similar to those of bulimia nervosa with the exception of attacks of overeating and inappropriate compensatory behaviors occurring less frequent than once a week and/or less than three months. It does not meet the criteria describing basic eating disorders and other mental or behavioral illnesses. There is no possibility of properly selecting medications that would affect their central nervous system. Patients' behavior and general state are not the result of cultural factors, however they influence their personal, social and professional life [45,47]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic (Table 1).

Binge-eating disorder (of low frequency and/or limited duration)

The criteria for classifying this type of disorder are similar to that of the binge-eating disorder, with the exception of attacks of overeating less than once a week and/ or less than three months [45,48]. In literature on this topic, as in the case above, no comprehensive information is provided (Table 1).

Purging disorder (PD)

This is a disorder that is characterized by recurring purging behavior in order to cause a change in body weight (its reduction). Laxatives or/and diuretics or traditional vomiting are used most often. The most common consequences of this are associated with medical problems in the whole organism, e.g. swellings, including salivary glands, metabolic disorders, water and electrolyte management, teeth, esophagus (may manifest as laryngopharyngeal reflux and occur hoarseness or even the risk of esophageal adenocarcinoma), frequent oral bleeding, and gastrointestinal problems. Episodes of overeating do not occur. Due to its specific symptoms, it is very difficult and precisely differentiate these disorders from other nutritional disorders (BN or AN), however, it certainly differs from the others in terms of severity. Often such people have more personality disorders including food pathologies, distress, mood disorders, anxiety or a higher level of general psychopathology. Detailed information on the duration of the disorder, results and effects of treatment including the use of laxatives and their impact on mortality are still not available [3,49-51].

Night eating syndrome (NES)

This disorder was first described in 1955. It is a characteristic syndrome during which the consumption of more than 25% of a daily energy requirement occurs after an evening meal (at night and in particular between 23:00 and 05:00) at least twice a week. There is a disturbed pattern of eating meals as a consequence of a different pattern of food supply during the day and before bedtime. It may also be accompanied by morning anorexia, insomnia, a desire to eat between lunch and going to sleep, the need to consume a meal in order to go back to sleep or fall asleep and a depressed mood during the day [52]. In order to correctly classify this disorder, a special a night eating questionnaire was elaborated, which seems to be very helpful in further treatment [53]. Literature on the topic still not

does not include information regarding its causes and its causal link to obesity, it may only be probable. A theory exists that assumes that NES is correlated with a general tendency to excessive eating. However, people with excessive body weight and a calorie deficit at breakfast in the morning may also experience NES, since their feeling of guilt associated with being overweight may lead to overeating at night, in one's own environment. A single effective method of treatment is still lacking, however cognitive-behavioral therapy seems to be the most effective. It is suggested to combine traditional methods of pharmacological and non-pharmacological methods in treating patients [52-54].

Unspecified Feeding or Eating Disorder (UFED)

This category of disorders is applied when symptoms characteristic of known eating disorders and other coexisting symptoms dominate, e.g. clinical pain, professional or social disabilities, or when they do not fully meet the criteria of other known mental disorders. It is applied in situations in which a physician intentionally does not determine the cause of the disorder or when it is not possible to obtain such information in a detailed medical history (e.g. emergency ward) [3,4,45]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic (Table 1, 9).

Eating Disorder Not Otherwise Specified (EDNOS)

The following eating disorders have not yet been described in any ICD classification.

Orthorexia Nervosa (ON)

This disorder is characterized by an obsession with eating exclusively, healthy foods, which leads to significant food restrictions. The amount of food is not important, but their quality and content. In the most advanced cases, patients give up eating food of any kind, and only specially selected water is considered to be safe. There is a variant known as Food neophobia - i.e. unwillingness to consume new foods (with a high degree of processing- "Genetically Modified Foods", functional and organic food).

People with orthorexia are mainly: vegetarians, fruitarians, raw vegans, animal and plant activists, people who are very psychically active, spiritual, religious, people with compulsive-obsessive behaviors, hypochondriacs, people with early eating disorders (e.g. anorexia), and people with lower education [13]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic.

Emotiogenic eating behavior (EEB)

Stress is related to nutrition in an essential and multidimensional way. Diet and the nutritional state of the body before exposure to stress and in stressful situations impact one's way of handling stress, e.g. an increase in the secretion of stress hormones causes a decrease in the level of magnesium in the organism (cardiac arrhythmias, increased neuromuscular excitability, tremors and muscle pain, general physical and psychological fatigue); a decrease in the level of antioxidants (vitamin C and E) cause a weakening of the immune system; an increase of secretion of cortisol and Neuropeptide Y (NPY) in connection with a diet rich in sugars and fats causes a greater activation of fat cells and a faster process of fat production

in the organism. A high level of occupational stress (work overload) impacts workers' eating behaviors (eating more frequently), which may result in obesity [14-16]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic.

Muscle dysmorphia (MD)

People who suffer from this disorder are particularly interested in body structure, muscle size and using substances to enhance their development and increasing their muscle weight, similarly to the Greek god Adonis spending many hours in front of the mirror. Such people avoid public places with the exception of participating in competitions for which they prepare for weeks. They also compare themselves with others. They ask about their appearance and measure their muscles after every workout session. They also systematically work out at the gym, and their daily schedule depends on workout sessions and diet [17]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic.

Pregorexia

This disorder occurs exclusively in pregnant women. Behaviors include: Dietary restrictions and/or intensive physical exercise and/or compulsive behaviors aimed at maintaining low body weight. In consequence, this leads to physical and mental disabilities in newborns, their below average body weight, and even to spontaneous miscarriages. However, the following may occur: anemia, hypertension, general weakness, hair loss, depression, and osteoporosis [18]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic.

Diabulimia

This is an eating disorder that only occurs in people with type 1 diabetes. It mainly affects women aged 15 to 30. It consists intentional omission or restriction of insulin doses in order to control or lose body weight. The warning signs include: a change in eating behaviors (increased food intake with simultaneous weight loss); drowsiness; hyperglycemia; polyuria. Extreme rigoristic control of diabetes (i.e. nutrition issues, observing diets, carbohydrate intake control) foster abnormal behaviors that contribute to the development of diabetes [19]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic.

Drunkorexia

This form of eating disorder is associated with alcohol addiction. It is based on restricting food intake in order to consume more alcohol without anxiety or fear of gaining weight. Its features include: alcohol addiction; intentional restriction of food intake; restricting food intake during the day with the intention to drink alcohol in the evening; high level of anxiety or fear related to weight gain; negative body image as a result of body weight. A characteristic decrease of body weight below norms according to sex and age also occurs [20].

Oral expulsion syndrome (OES)

This syndrome consists of consuming meals by savoring the taste, texture, and aroma of a given meal without swallowing it and then spitting it out. Not swallowing is a "preventative" action in order not to consume high calorie meals. As a result, this leads to: Enlargement of the salivary glands; formation of cavities in the mouth and tooth decay; swelling of the lymph nodes; ulceration in the mouth and

throat; the development of stomach ulcers; and other mental illnesses (e.g. depressive moods, problems with concentration, aggression, irritability) [21]. Comprehensive information, clinically confirmed cases, descriptions, causes and methods of treating this disorder are not found in literature on the topic.

Conclusion

Every type of new eating disorders still remains insufficiently recognized and outlined in literature on the topic. More and more disorders are related to each other, are mixed, or are the result of others that occurred earlier. Patients are well informed and educated, and exchange experiences on a regular basis on social media. They very often lie or hide important information about their health so that's why the doctors can have a problem with a proper diagnosis. Eating disorders often are based in mental illness and are associated with low self-esteem. Only quick and careful observation on the part of relatives can help specialists or a group of specialists make a diagnosis in a timely manner, and thus prevent the further progression of illness, and even death. Only the continuous process of publishing research based on evidence-based medicine, self-education and greater awareness of medical staff will help in the correct classification, diagnosis and conduct of appropriate/individual therapy among patients with eating disorders.

References

- Schaefer LM, Anderson LM, Simone M, O'Connor SM, Zickgraf H, Anderson DA, et al. Gender-based differential item functioning in measures of eating pathology. *Int J Eat Disord.* 2019;52(9):1047-51.
- Hymowitz G, Salwen J, Salis KL. A mediational model of obesity related disordered eating: The roles of childhood emotional abuse and self-perception. *Eat Behav.* 2017;26:27-32.
- American Psychiatric Association. Feeding and Eating Disorders. In: *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. 5th Ed. American Psychiatric Publishing, Washington, DC, London, England. 2013.
- ICD-11 for Mortality and Morbidity Statistics (ICD-11 MMS). 2019.
- International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10)-WHO Version for; 2016.
- Monge MC, Loh M. Medical complications of eating disorders in pediatric patients. *Pediatr Ann.* 2018;47(6):238-43.
- Van Hoeken D, Seidell J, Hoek HW. Epidemiology. In: *The handbook of Eating Disorders*. 2nd Ed. 2003.
- Omeljaniuk WJ, Socha K, Borawska MH, Charkiewicz A, Laudanski T, Kulikowski M, et al. Antioxidant status in women who have had a miscarriage. *Adv Med Sci.* 2015;60(2):329-34.
- Omeljaniuk W, Socha K, Soroczyńska J, Charkiewicz AE, Laudanski T, Kulikowski M, et al. Cadmium and lead in women who miscarried. *Clin Lab.* 2018;64(1):59-67.
- Charkiewicz AE, Omeljaniuk WJ, Orywal K, Czygier M, Szmikowski M, Mroczo B, et al. Concentration of selected elements and antioxidative potential in a group of males working in the metal industry: Elements and antioxidative potential in men. *Am J Men Health.* 2019;13(3):1-10.
- Charkiewicz AE, Jamiolkowski J, Pędziński B, Krzyżak M, Maślach D, Szpak A, et al. Changes in dietary patterns and the nutritional status in men in the metallurgical industry in Poland over a 21-year period. *Ann Nutr Metab.* 2018;72:161-71.
- Aparicio E, Canals J, Voltas N, Valenzano A, Arija V. Emotional symptoms and dietary patterns in early adolescence: A school-based follow-up. *J Nutr Educ Behav.* 2017;49(5):405-14.
- Barthels F, Meyer F, Huber T, Pietrowsky R. Orthorexic eating behavior as a coping strategy in patients with anorexia nervosa. *Eat Weight Disord.* 2017;22(2):269-76.
- Bellisle F. Food choice, appetite and physical activity. *Public Health Nutr.* 1999;2(3A):357-61.
- Kuo LE, Kitlinska JB, Tilan JU, Li L, Baker SB, Johnson MD, et al. Neuropeptide Y acts directly in the periphery on fat tissue and mediates stress-induced obesity and metabolic syndrome. *Nat Med.* 2007;13(7):803-11.
- Nishitani N, Sakakibara H, Akiyama I. Eating behavior related to obesity and job stress in male Japanese workers. *Nutrition.* 2009;25(1):45-50.
- Phillips KA, Wilhelm S, Koran LM, Didie ER, Fallon BA, Feusner J, et al. Body dysmorphic disorder: some key issues for DSM-V. *Depress Anxiety.* 2010;27(6):573-91.
- Mathieu J. What is pregorexia? *J Am Diet Assoc.* 2009;109(6):976-9.
- Ruth Sahd LA, Schneider M, Haagen B. Diabulimia: What it is and how to recognize it in critical care. *Dimens Crit Care Nurs.* 2009;28(4):147-53.
- Roosen KM, Mills JS. Exploring the motives and mental health correlates of intentional food restriction prior to alcohol use in university students. *J Health Psychol.* 2015;20(6):875-86.
- Aouad P, Hay P, Soh N, Touyz S. Prevalence of chew and spit and its relation to other features of disordered eating in a community sample. *Int J Eat Disord.* 2018;51(8):968-72.
- Lumish RA, Young SL, Lee S, Cooper E, Pressman E, Guillet R, et al. Gestational iron deficiency is associated with pica behaviors in adolescents. *J Nutr.* 2014;144(10):1533-9.
- Golden CD, Rasolofoniaina BJR, Benjamin R, Young, SL. Pica and amylophagy are common among malagasy men, women and children. *PLoS One.* 2012;7(10):e47129.
- Chial HJ, Camilleri M, Williams DE, Litzinger K, Perrault J. Rumination syndrome in children and adolescents: diagnosis, treatment, and prognosis. *Pediatrics.* 2003;111(1):158-62.
- Hejazi RA, Mc Callum RW. Rumination syndrome: A review of current concepts and treatments. *Am J Med Sci.* 2014;348(4):324-9.
- Rasquin A, Di Lorenzo C, Forbes D, Guiraldes E, Hyams JS, Staiano A, et al. Childhood functional gastrointestinal disorders: Child/adolescent. *Gastroenterology.* 2006;130(5):1527-37.
- Quitadamo P, Thapar N, Staiano A, Borrelli O. Gastrointestinal and nutritional problems in neurologically impaired children. *Eur Eur J Paediatr Neurol.* 2016;20(6):810-5.
- Pyles DA, Muniz K, Cade A, Silva R. A behavioral diagnostic paradigm for integrating behavior-analytic and psychopharmacological interventions for people with a dual diagnosis. *Res Dev Disabil.* 1997;18(3):185-214.
- Dell'Osso L, Cremone IM, Carpita B, Dell'Oste V, Muti D, Massimetti G, et al. Rumination, posttraumatic stress disorder, and mood symptoms in borderline personality disorder. *Neuropsychiatr Dis Treat.* 2019;15:1231-8.
- Talley NJ. Rumination syndrome. *Gastroenterol Hepatol (NY).* 2011;7(2):117-8.
- Thumshirn M, Camilleri M, Hanson RB, Williams DE, Schei AJ, Kammer PP. Gastric mechanosensory and lower esophageal sphincter function in rumination syndrome. *Am J Physiol.* 1998;275(2):G314-21.
- Petrenko CLM. A Review of intervention programs to prevent and treat behavioral problems in young children with developmental disabilities. *J Dev Phys Disabil.* 2013;25(6):651-79.
- Schon RA, Silven M. Natural parenting - back to basics in infant care. *Evol Psychol.* 2007;5(1):102-83.

34. Strandjord SE, Sieke EH, Richmond M, Rome ES. Avoidant/restrictive food intake disorder: Illness and hospital course in patients hospitalized for nutritional insufficiency. *J Adolesc Health*. 2015;57(6):673-8.
35. Kurz S, van Dyck Z, Dremmel D, Munsch S, Hilbert A. Variants of early-onset restrictive eating disturbances in middle childhood. *Int J Eat Disord*. 2015;49(1):102-6.
36. Zucker N, Copeland W, Franz L, Carpenter K, Keeling L, Angold A, et al. Psychological and psychosocial impairment in preschoolers with selective eating. *Pediatrics*. 2015;136(3):e582-90.
37. Taylor CM, Wernimont SM, Northstone K, Emmett PM. Picky/fussy eating in children: Review of definitions, assessment, prevalence and dietary intakes. *Appetite*. 2015;95:349-59.
38. Bryant-Waugh R, Markham L, Kreipe RE, Walsh BT. Feeding and eating disorders in childhood. *Int J Eat Disord*. 2010;43(2):98-111.
39. Luiselli JK. Oral feeding treatment of children with chronic food refusal and multiple developmental disabilities. *Am J Ment Retard*. 1994;98(5):646-55.
40. Johnson SL, Davies PL, Boles RE, Gavin WJ, Bellows LL. Young children's food neophobia characteristics and sensory behaviors are related to their food intake. *J Nutr*. 2015;145(11):2610-6.
41. Karjalainen L, Rastam M, Paulson-Karlsson G, Wentz E. Do autism spectrum disorder and anorexia nervosa have some eating disturbances in common? *Eur Child Adolesc Psychiatry*. 2019;28(1):69-78.
42. Ogundele MO. Behavioural and emotional disorders in childhood: A brief overview for paediatricians. *World J Clin Pediatr*. 2018;7(1):9-26.
43. Hail L, Le Grange D. Bulimia nervosa in adolescents: Prevalence and treatment challenges. *Adolesc Health Med Ther*. 2018;9:11-16.
44. Moskowitz L, Weiselberg E. Anorexia nervosa/atypical anorexia nervosa. *Curr Probl Pediatr Adolesc Health Care*. 2017;47(4):70-84.
45. Palavras MA, Hay P, Filho CA, Claudino A. The efficacy of psychological therapies in reducing weight and binge eating in people with bulimia nervosa and binge eating disorder who are overweight or obese-a critical synthesis and meta-analyses. *Nutrients*. 2017;9(3):299.
46. Riesco N, Aguera Z, Granero R, Jimenez-Murcia S, Menchón JM, Fernandez-Aranda F. Other Specified Feeding Or Eating Disorders (OSFED): Clinical heterogeneity and cognitive - behavioral therapy outcome. *Eur Psychiatry*. 2018;54:109-16.
47. Cyr M, Yang X, Horga G, Marsh R. Abnormal fronto-striatal activation as a marker of threshold and subthreshold bulimia nervosa. *Hum Brain Mapp*. 2018;39(4):1796-804.
48. Hilbert A. Binge-eating disorder. *Psychiatr Clin North Am*. 2019;42(1):33-43.
49. Brewster DH, Nowell SL, Clark DN. Risk of oesophageal cancer among patients previously hospitalized with eating disorder. *Cancer Epidemiol*. 2015;39(3):313-20.
50. Brown TA, Haedt-Matt AA, Keel PK. Personality pathology in purging disorder and bulimia nervosa. *Int J Eat Disord*. 2011;44(8):735-40.
51. Reas DL, Rø Ø. Less symptomatic, but equally impaired: Clinical impairment in restricting versus binge-eating/purging subtype of anorexia nervosa. *Eat Behav*. 2018;28:32-7.
52. Stunkard AJ, Grace WJ, Wolff HG. The night-eating syndrome: A pattern of food intake among certain obese patients. *Am J Med*. 1955;19(1):78-86.
53. Dantas GM, Pinto TF, Pereira EDB, Junior RMM, Bruin VMS, Bruin PFC. Validation of a new Brazilian version of the "Night Eating Questionnaire". *Sleep Sc*. 2012;5(1):7-13.
54. Pinto TF, Silva FG, Bruin VM, Bruin PF. Night eating syndrome: How to treat it? *Rev Assoc Med Bras (1992)*. 2016;62(7):701-7.