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Eating and Weight Disorders: A Mini-Review of Anorexia and Bulimia Nervosa and Binge Eating Disorder

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I. INTRODUCTION

Eating Disorders are psychological disturbances associated with irregular eating habits and severe distress about body weight or shape [1]. They result in inadequate or excessive food intake which can ultimately damage an individual's well-being [1]. Eating Disorders are complex disorders, influenced by a facet of factors. It is generally believed that these disorders are combinations of biological, psychological, and environmental disturbances [1]. Eating disorders can develop during any stage in life but typically appear during the young adulthood. These conditions are treatable, however; the symptoms and consequences can be fatal if not addressed properly [2]. The most common eating disorders include anorexia nervosa, bulimia nervosa and binge eating disorder [2]. In this study we sought to review these common eating disorders.

Anorexia nervosa

Anorexia Nervosa patients have an obsessive and persistant fear of gaining weight, along with an unrealistic and exaggerated perception of body image [2]. Many people with anorexia nervosa will fiercely limit the quantity of food they consume and view themselves as overweight, even when they are clearly underweight [2].

The estimated prevalence of anorexia nervosa in the United States adult population was 0.6% [3] and women were affected more than men with a ratio of females to males ranging between 10:1 and 20:1 [4]. The pathogenesis of anorexia nervosa is not known. However, its aggregation in families suggests that genetic factors may be involved [5]. A study identified a significant locus on chromosome 12 (rs4622308) that was associated with anorexia nervosa [6]. Multiple evidences demonstrate altered brain function and structure in anorexia nervosa, but, it is not clear whether the observed changes are etiologic or consequences of the disorder [7].

The diagnosis of Anorexia nervosa according to DSM-5 requires a patient to fulfil a criteria that includes restriction of energy intake that leads to a low body weight with intense fear of gaining weight, or persistent behavior that prevents weight gain, despite being underweight and distorted perception of body weight and shape [2].

Two types of anorexia nervosa were identified; restricting type where during the current episode of anorexia nervosa, the person has not regularly engaged in binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas), and binge eating /purging type where during the current episode of anorexia nervosa, the person has regularly engaged in binge eating or purging behavior [2].

In addition to growth disturbances in adolescents, many medical complications can occur during starvation or persistent purging due to anorexia nervosa [8]. Such complications may include myocardial atrophy, mitral valve prolapse, pericardial effusion, bradycardia, amenorrhea, osteoporosis, gastroparesis, and constipation [8].

Hospitalization, nutritional rehabilitation, cognitive behavioral therapy (CBT) and pharmacotherapy are the main options for managing anorexia nervosa patients [2]. Patients should be hospitalized if they presented with rapid weight loss of >15% of body weight, hypotension with a systolic blood pressure <90 mmHg, bradycardia (heart rate, <50 beats/minute), core body temperature <36°C, suicidal ideation, medical complications, or non-responsiveness to outpatient treatment (after 3–4 months) [9].

The goal of nutritional rehabilitation is to restore a minimally normal weight with a weekly target that differ depending on the setting; for inpatient it is 0.9 to 1.4 kg per week, for partially hospitalized patients it is 0.5 to 0.9 kg per week and for outpatients it is 0.2 to 0.5 kg per week [10]. Caloric intake at the beginning of nutritional rehabilitation is typically 30 to 40 kcal/kg body weight/day. Daily calories are advanced by about 200 to 400 kcal every two to four days; caloric intake may eventually progress up to 70 to 100 kcal/kg/day [10].

Behavioral positive reinforcement programs helps patients to identify false thinking, distortions in analyzing and interpreting events, and their relationship to mood and behavior [11]. For outpatient treatment of anorexia nervosa with individual CBT, a protocol consisting of four phases delivered in approximately 50 sessions over one year is used [12. Phase 1 orients patients to treatment, enhance motivation, and introduce self-monitoring [12]. Phase 2 employs interventions to change maladaptive cognitions and behaviors. Phase 3 addresses the core belief and phase 4 focuses upon relapse prevention [12].

Pharmacotherapy is not an initial or primary treatment for anorexia nervosa [13]. However, it may be indicated for acutely ill patients who do not gain weight despite first line treatment with nutritional rehabilitation and psychotherapy. In addition, adjunctive pharmacotherapy may possibly help reduce symptoms of depression and anxiety in patients who do not respond to first line treatment [13]. Different therapeutic options including antidepressants [14], antipsychotics [15], benzodiazepines [16], and dopamine antagonists [13]may be required for treating anorexia patients. SSRIs are used in weight-restored anorexic patients [14]. It is the safest class and drug of choice for comorbid anxiety, obsessive-compulsive-impulsive behaviors, social phobia, and depression [14]. Fluoxetine has a potential role in preventing relapse in weight-restored individuals with anorexia [17]. While antipsychotics provided mixed results with mild improvements at best [15], benzodiazepines given before feeding, reduce anxiety symptoms. [16]Dopamine antagonists (Metoclopramide and domperidone) increase gastric emptying and reducing abdominal distension and bloating [13].

Bulimia Nervosa

Bulimia Nervosa is also an eating disorder associated with repeated binge eating followed by compensatory behaviors for the overeating, such as forced vomiting, excessive exercise, or extreme use of laxatives or diuretics [1]. Individuals who suffer from Bulimia feel severely unhappy with their body size and shape. [1] The binge-eating and purging cycle is typically done in secret, creating feelings of shame, guilt, and lack of control [1]. Bulimia nervosa patients usually present with low self-esteem and anxiety, guilt about binge-eating, depression, impulsive behaviors and sexual conflicts, problems with intimacy, permanent loss of dental enamel, enlargement or inflammation of salivary glands and calluses or scars on dorsal part of hand [2].

Bulimia nervosa estimated prevalence from pooled results of nationally representative surveys of adults in 14 countries (Europe, Latin America, New Zealand, and the United States) was 1% with a median age of onset around 18 years [18]. Such low estimates are due to the tendency of some individuals to conceal their illness [19]. Bulimia nervosa is more common in women than men with a ratio of females to males with a first time diagnosis of 13 to 1 [18].

Multiple studies demonstrate altered brain function and structure in bulimia nervosa. Cortico-limbic circuits' disturbances might contribute to bulimia nervosa. A functional magnetic resonance imaging study suggests that overeating may occur in bulimia nervosa because hunger and satiety states are not accurately recognized [20]. In addition, imaging studies have shown structural brain changes in bulimia nervosa, including frontal and temporoparietal areas [20].

The DSM-5 criteria for diagnosis of bulimia nervosa include recurrent episodes of both binge eating and inappropriate compensatory behavior to prevent weight gain, done on an average of at least once per week for at least three months [2]. Similar to anorexia nervosa, bulimia is sub classified into purging and non-purging types [2]. Unlike the non-purging type, during the purging type, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas [2].

Persistent purging regarded as a compensatory behavior for weight gain among bulimic patients can lead to many medical complications such as, dehydration, hypokalemia, menstrual irregularities, Mallory-Weiss syndrome, and erosion of dental enamel [8].

Treatment for bulimia nervosa generally consists of nutritional rehabilitation plus psychotherapy and pharmacotherapy [13]. Nutritional rehabilitation restores a structured and consistent meal pattern and CBT addresses dysfunctional thoughts and problematic behaviors [21]. Patients with severe depression or suicidal thoughts, severe concurrent drug or alcohol abuse or life-endangering medical problem such as severe hypokalemia, metabolic alkalosis or acidosis, severe dehydration, acute pancreatitis and cardiomyopathy or arrhythmia should be directly hospitalized [13].

Cognitive behavioral therapy is the first line treatment of choice used in combination with or without antidepressants [21]. Structured CBT approaches are usually followed with an average of 20 sessions over a 4- to 6-month period [21]. Pharmacotherapy is efficacious for bulimia nervosa [13]. Antidepressants have been most widely studied, and are the drugs of choice due to their demonstrated efficacy and tolerability [13].

Combination treatment with pharmacotherapy plus psychotherapy appears to be more efficacious than either treatment alone for treating episodes of bingeing and purging [22].Antidepressants that have shown best results were SSRIs, mainly fluoxetine 60mg/day for at least 6 months [23]. Citalopram, escitalopram, fluvoxamine, paroxetine, sertraline, and venlafaxine are alternatives [23]. Other antidepressants that have shown benefit in bulimia nervosa are TCAs and MAOIs [23].

Binge Eating Disorder

Binge Eating Disorder patients frequently lose control over his or her eating [2]. Different from bulimia nervosa however, episodes of binge-eating are not followed by compensatory behaviors, such as purging, fasting, or excessive exercise [1]. Because of this, involved individuals may be obese and at an increased risk of developing other conditions, such as cardiovascular disease [1]. Men and women who struggle with this disorder may also experience intense feelings of guilt, distress, and embarrassment related to their binge-eating [2].

Pooled results from surveys of adults in 14 countries estimate that the lifetime prevalence of binge eating disorder is 1.9 %, with a median age of onset of 23 years [18]. Binge eating disorder is more common in women than men [18]. In a nationally representative survey in the United States, the lifetime prevalence in females and males was 3.5% versus 2.0 % [3].

Patients with binge eating disorder commonly suffer comorbid psychopathology. The most common comorbid illnesses were specific phobia (37%), social phobia (32%), unipolar major depression (32%), posttraumatic stress disorder (26%), and alcohol abuse or dependence (21%) [3].

Individuals with a history of binge eating disorder are at increased risk to develop medical disorders, including chronic pain, diabetes mellitus, and hypertension [18]. In addition, individuals with a history of binge eating disorder have a higher body mass index and are more likely to be obese [18].

According to DSM-5, episodes of binge eating are defined as consuming an amount of food in a discrete period of time that is definitely larger than what most people would eat in a similar amount of time under similar circumstances. During episodes, patients eat more rapidly than normal without feeling physically hungry and until feeling uncomfortably full. They eat alone because of embarrassment by the amount of food consumed, and feel disgusted, depressed, or guilty after overeating. These episodes occur, on average, at least once a week for three months [2].

Treatment for binge-eating disorder is generally performed on outpatient basis [24]. However, if the patient has severe comorbidities such as self-harm, suicidality, or substance misuse or the severity of the binge eating places the person at risk for significant physical illness, residential treatment should be considered [25].

CBT is a treatment of choice in binge-eating disorder [26]. A randomized placebo-controlled trial found that CBT with placebo was superior to fluoxetine, and adding fluoxetine to CBT did not enhance findings compared to adding placebo to CBT at 12-month follow-up after treatment completion [27]. Family therapy can be effective to improve communication by decreasing negative emotional expressivity [26]. Interpersonal psychotherapy is a proven treatment for binge-eating disorder and focuses on identification of interpersonal conflict as triggers for binges [26]. Integrative response therapy is an effective group-based cognitive restructuring and emotion management technique [28]. Behavioral weight loss (BWI) that allow self-monitoring weight loss typically include a paper or electronic devices diary of diet, physical activity, weight, and obesity-related risk behaviors is another option for managing this disorder [28].

Medication treatment should not be the first or only treatment for binge-eating disorder because of the efficacy of some nonpharmacologic approaches [29].Fluoxetine was effective in decreasing the number of binging episodes [26]; however, other medications such as sertraline, fluvoxamine, paroxetine and escitalopram, as well as other selective serotonin/norepinephrine reuptake inhibitors and antidepressants can also be useful alternatives when fluoxetine is not tolerated or ineffective [29]. Nonetheless, antidepressants are associated with weight gain in some cases, which can be a significant barrier to success [29]. Lisdexamfetamine was FDA approved to treat moderate-to-severe binge eating disorder in adults [30]. Antiepileptic medications that decrease obsessive and compulsive behavior, such as topiramate, zonisamide and lamotrigine, as well as other medications that decrease compulsive eating, such as exenatide and liraglutide, may be effective owing to their effect on the regulation of neuropeptide Y that may help to control weight [30].

II. CONCLUSION

Eating disorders are illnesses characterized by severe disturbances in the eating behaviors and related thoughts and emotions. People with eating disorders become obsessed with food and their body weight.Heredity might play a part in the4 etiology behind eating disorders, but these disorders also affect many people who have no prior family history. These conditions are associated with multiple emotional and physical symptoms which could be potentially fatal. However, with proper medical care, individuals with such disorders can resume suitable eating habits, and return to better emotional and psychological health.

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