

Review on Binge Eating Disorder: Theories, Influencing Factors and Treatments

Kuan Jiang^{*1}

¹Shanghai United International School Wanyuan Campus, Shanghai, 200000, China

^{*}Corresponding author. Email: kuan.paul.jiang@wy.suis.com.cn

ABSTRACT

Binge eating disorder is marked by repetitive episodes of binge eating without any compensatory behaviors, which is accompanied by the stress of losing control. The purpose of this review is to provide a summary of the research findings on different aspects of binge eating disorder. First of all, the dietary restraint theory and emotional-regulation theory were introduced, which indicated the roles of dieting and emotions in the binge eating. Subsequently, the scientific and experimental data were utilized base on previous literature to prove the immense influence of emotional factors and gender differences. Finally, two reliable treatments, the interpersonal treatment and cognitive behavioral treatment, were discussed in order to cope with previous influencing factors. The interpersonal treatment is a long-term effective therapy. It addresses with interpersonal relationship problems, significant life changes, and negative emotions, i.e., helps eliminate binge eating by reducing patients' need for sentimental relief. The cognitive behavioral treatment is another reliable therapy that copes with the dissatisfactions toward body shapes. It helps to build confidence, explore negative thoughts, and seek positive adjustments.

Keywords: binge eating disorder, theoretical cause, influencing factors, treatments

1. INTRODUCTION

Binge eating disorder (BED) is one of the newest eating disorders which was formally recognized in the fifth revision of Diagnostic and Statistical Manual of Mental Disorder (DSM-V) in 2013 [1]. Before the latest revision of DSM-V, BED was only a subtype of Eating Disorder Not Otherwise Specified (EDNOS) in the fourth revision of Diagnostic and Statistical Manual of Mental Disorder (DSM-IV) [2]. Binge eating disorder (BED) is characterized by repetitive episodes of binge eating without compensatory behaviors (e.g., purging or vomiting). Generally, it accompanies with the stress of being unable to control eating and emotion distress. The frequency of BED is at least once a week over a period of 3 months [3]. BED patients would start binge eating even they are not physically hungry. Moreover, they tend to continuously take in massive quantity of food until feeling uncomfortably full and intense distress toward overeating will appear afterward [3]. Due to BED patients' guilt in terms of losing control during binge eating, they prefer to eat privately in order to avoid the shame in public [3].

BED will lead to both mental and physical health problems. On the one hand, it shares a strong connection to mental disorders (e.g., depression, anxiety disorder, and personality disorder), which would negatively affect social functioning. On the other hand, it causes physical health problems including hypertension, stomach pain, and high blood-sugar level [4]. BED patients have a higher possibility to be obese or overweight owing to the absence of compensatory behaviors to counter the effects of binge eating. Specifically, a longitudinal study conducted in a community scale reveals that the number of individuals with BED that have obesity has an increase by 17% within 5 years [5]. Furthermore, BED is now not only a health problem in a community scale, but also a global health concern. Based on the data from the World Health Organization (WHO) Mental Survey Study which surveyed participants from a massive scale of 14 countries, a lifetime prevalence rate of BED is 1.4% [6]. Specifically, BED is even more common in United States whose lifetime prevalence reached 2.6%. So far, BED is still insufficiently acknowledged, i.e., much more real cases than diagnoses [6], which is a circumstance that needs to be improved.

Most existed literatures focus only on a limit perspective of BED, either regarding its causes, impacts,

or treatments. Thus, these studies are not capable of providing an explicit and all-rounded introduction that incorporates all the key features of BED. In this perspective, comprehensively analyze is carried out via reviewing literature for the etiology of BED from existed theories, effective treatments, as well as influencing factors. First, an overview of the theories regarding the potential causes of BED in individuals will be presented (Sec. 2). Then, some influencing factors that may cause BED will be introduced (Sec. 3). Following this, the usage of two typical treatments among BED individuals will also be demonstrated.

2. THEORIES

2.1. Dietary Restraint Theory

Dietary restraint theory was first proposed by Herman and Mack [7]. It is an influential explication about BED that highlights the dieting as an important factor of the maintenance of binge eating. In other words, the process of restricting food intake would actually lead to chronically hunger and possibly cause the binge eating [7]. Early in 1985 [8], there were case studies and animal studies presented by Polivy and Herman as evidence to support the theory [8]. In fact, dieting would lead to an uncontrollable overeating and the process will repeat until a negative cycle is formed [7]. According to the characteristics of BED, the patients do not eat due to physiological need [8]. Besides, Polivy and Herman proposed that overeating is only a regulation method of food restriction. Moreover, individuals who binge eat tended to set strict rules about food types, quantities, and time of eating. However, the rules were strict yet fragile, i.e., violation of one rule would uncontrollably lead to binge-eating episodes. BED patients' underlying cognitive pattern was that the opposing side of extremely strict shall be extreme disinhibition. As a consequence, the broken of the rules will lead to excessive binge eating [7].

Several experiments are the supportive evidence for the dietary restraint theory. These experiments evaluate counter-regulation, which is a concept defined as eating more after consuming a high-caloric meal, happen on restrained eaters [9-12]. Researchers designed a 'taste testing' experiment, where they asked participants to randomly purchase a high caloric preload before the 'taste test'. The amount of food purchased would be calculated to measure the disinhibited eating. The results reveal that non-dieters would regulate their later eating pattern and eat less after a preload that is high-caloric [13]. However, compared to those dieters who had no preload, dieters eat more quantities of food after they consume preload. In this case, a counter-regulatory response tendency appears that eat more after having recently eaten [14]. In other words, dieting do play a

pivotal role in overeating which verifies the Dietary restraint theory.

Nevertheless, there is a limitation with this theory that fails to explain the binge episodes of those who are not restraint eaters. Therefore, other theories are needed to comprehensively interpret BED.

2.2. Emotional-regulation Theory

In 1986, Lacey proposed that BED provides a way for reducing subjective perception negative emotions, and further considered BED as a coping method [15]. According to Lacey, poor family circumstances, family genetic of weight, a strongly focus on physical beauty, and the reliance of self-identity on external standards could be the predisposing factors of BED. Lacey suggested that these negative factors would cause damage to BED patients' self-identity and their ability dealing with interpersonal relationship. Thereby, it leads to a feeling of ineffectiveness and loss control of patients' own body. BED can originate from a significant life event which would possibly relate to feeling of loss, conflict relationships, or even self-criticism caused by intense accidents [15]. The individual who experiences the kind of events might lack of coping skills to counter the negative affect. In such cases, those individuals tend to pay their attention to food, try to seek an emotional relief through bingeing. Additionally, binge eating does allow people to release anger or stress, providing a temporary escape for those who suffer from boredom or loneliness [14].

Various kinds of evidence can be utilized to support this theory. First, Waller reviewed evidence that focused on emotional consequences of binge eating [16]. One of the clinical observations reported that there were people who experienced more anxiety, stress, and negative emotions before a binge. Moreover, their subjective reports indicated that negative emotions were reduced during the binge eating [16]. On the other hand, binge eating would also lead to a sense of guilt, disgust and depression. Even worse, patients would feel more anxious for their weight gain due to the binge episode [17].

3. INFLUENCING FACTORS

3.1. Emotional Factors

As already mentioned in Sec. 2.2, negative emotions contribute to BED. Following the emotional-regulation theory, more findings will be provided to further reveal the relationship of emotional-regulation and BED by existed data. One of the recent findings exposed that 67% to 79% of BED patients would also have at least one comorbid mental disorder throughout the life span. The most prevalent disorders include mood and anxiety disorders [18-20]. In other words, emotions of BED patients are more negative compared to common

individuals. Moreover, the mood would be especially poor right before the point of binge eating. Based on the investigation of Grenno et al. [21], female BED patients' binge antecedents revealed a poor mood prior to binge episodes. In addition, depressive mood such as sadness was the most frequently examined negative emotion [22]. According to several cross-sectional, experimental and therapy outcome studies, there is a positive association between depressive symptoms and binge-eating behavior. In detail, a higher level of depression is relevant to more intense overeating [23-29]. After the binge eating, the end of the food craving is linked to lower levels of mood, energy, and hunger. At this point, the level of tension is higher than cravings, i.e., there would not be a binge [30].

Not only sadness, other emotions were also found correlated to BED. Based on Arnou et al.'s findings, anger/frustration, anxiety and sadness/depression were responsible for 95% of the mood prior to a binge-eating episode [31]. Moreover, anger and frustration happened even more often than sadness and depression before the overeating. Subsequently, Zeeck et al. investigated a broad spectrum of BED emotions and found that the number of binges could be explained by anger, disappointment and feelings of being alienated or traumatized [32]. These evidences imply that emotions play a pivotal role in the generation of BED. Despite the emotion facts, the gender differences also affect BED which we will discuss following.

3.2. Gender Differences

The gender differences in BED possibly are results of differential expectations toward sex role. The expectation for men is that their BED is more associated to negative emotions, e.g., depression and anger. Whereas, women's BED is expected to have more connections to the complaint to body shape and diet failures [33]. There was one study conducted by Tanofsky, et al which evaluated the validity of the hypothesis about gender difference in BED patients [34]. The study compared 21 overweight male BED patients to 21 female BED patients who was at the same age. In this case, no gender differences emerged on initial eating disturbance, shape and weight concerns, interpersonal problems, or self-esteem. Besides, the men and women did not differ massively in age of the appearance of binge episodes, age of onset of dieting, or the onset of problems caused by the previous two [34]. Based on the result of this study, one of the gender differences was that, 85.77% of male BED patients were classified as obese while only 29.23% for female patients [33]. From the psychological perspective, men and women did not differ on level of depression or sadness. It is obvious that females were found to have significantly higher body dissatisfaction and greater desire toward thinness. Nonetheless, such a drive for thinness can be considered as a sick social value that

requires rectification. Therefore, despite the emotional factors, women's higher body dissatisfaction was also a crucial risk factor that needed to be cured during treatment.

4. TREATMENT

4.1. Interpersonal Treatment

Emotional-regulation theory already implied that negative effects and crisis of social relationships are predisposing factors leading to binge eating. Interpersonal treatment (IPT) would be an effective way to cope with the negative effect. IPT is an empirical treatment for eating disorders originally developed from treating depression [35], which has extensive support for the treatment of BED. Specifically, the treatment was designed in a time-limited format that involves a 2-hour initial session and 18-hour sessions at weekly and then biweekly intervals [36]. There were three phases of the treatment: initial phase, intermediate phase, and termination phase. Typically, the treatment requires over 24 weeks approximately [37].

According to Rebecca Murphy and her colleagues, IPT lays emphasis on five types of interpersonal problems that tend to occur in BED patients [38]. The first one is lack of intimacy and interpersonal deficits, retrieving for satisfaction from intimate relationships as well as coping with patients' feeling of isolation [38]. The second type is interpersonal role disputes, which would result in conflict relationships between partners, friends and colleagues. In this case, the IPT is able to identify the reason of dispute and help the patient to communicate more effectively [38]. The third type is role transitions, which means the patient is not capable of overcoming a significant life change, e.g., changing jobs, marriage, or independence from parents. For this type of the problem, therapists would help the patient give up the old role and adjust to the new role [38]. The fourth type of the problem is the grief when experiencing the death of a loved one. The therapists would help patients to think in detail about past experience with the dead, trying to express and release the grief about it [38]. The last type of interpersonal problem is related to life goals. Some patients' social functioning might be negatively influenced by the concern to the future. In this case, IPT is an opportunity for the patient to discover aspirations, and make changes to present life in order to overcome the concern [38]. Based on aforesaid problems, IPT is an effective treatment for coping with negative emotions and social relationships. Moreover, its effectiveness can be interpreted from numeral data. Interpersonal psychotherapy approximately helps to achieve 50%-60% remission rate or effective inhibition from binge eating, which are well maintained through 24 months and 48 months follows up [36].

4.2. Cognitive-behavioral Treatment

Despite the interpersonal treatment, another treatment is also found to be effective for treating BED, which is cognitive-behavioral treatment (CBT). This treatment can be delivered in 1-hour sessions over 12 to 24 weeks with three phases. During Phase 1, therapists firstly develop a trustworthy and collaborative relationship with patients. Subsequently, they deliver the knowledge of BED and CBT model in order to help patients identify the irregularity of their eating patterns and the importance of self-monitoring methods. Then, therapists would help patients to construct normal eating patterns [39]. In phase 2, clinicians start to guide the patient to confront with the negative thoughts in their mind. For example, clinicians help the patient to recognize and change their negative feelings about body shapes, weight, interpersonal relationships, or stressors in life [39]. During phase 3, after the establishment of correct eating habits, therapists would focus BED patients on keeping structured habits and maintaining the recently learned problem-solving skills [39].

5. CONCLUSION

In summary, BED is connected with significant costs, e.g., comorbid mental and physical health problems, which would reduce quality of life as well as weaken social functioning. The potential theoretical causes including Dietary restraint theory and Emotional-regulation theory of BED are reviewed and introduced. Besides, the important role of emotional factors and gender differences are discussed in the symptom of binge eating. Moreover, based on experimental and clinical studies, the importance of the social value towards body shapes is summarized, which had further impact on BED female patients. Finally, two useful treatments including interpersonal treatment and cognitive-behavioral treatment for patients of BED were illustrated. Overall, this work provides the well-rounded knowledge for researchers, which incorporates existed theories, influencing factors, and reliable treatments of the BED.

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