The Role of Negative Emotions in Binge Eating Disorder

Jiaai Liu[1 †], Hongyi Zhang[2, *, †]

[1] Chongqing Depu Foreign Language School, Chongqing, 518000, China

[2] Vanke Meisha Academy, Guangdong, 518000, China

*Corresponding author: zhanghongyi@stu.vma.edu.cn

[†]These authors contributed equally.

Abstract. Binge Eating Disorder (BED) refers to the abnormal condition in which patients uncontrollably consume a large quantity of food for a persisting period. There are severe physical and mental health problems brought about by binging. This review is written with the purpose of analyzing the effects and mechanisms of negative emotions on BED. In addition, intervention approaches for BED are discussed. Negative moods are found to precede often binging behavior, and almost all non-purging patients of BED display feelings of guilt after binge eating episodes. From a biological point of view, cortisol and the HPA-Axis are suspected to be closely related to binge eating in response to stress. In addition, shame specifically is found to be positively correlated with binge eating, and binge-induced shame could trigger even more external shame, which forms the vicious cycle of BED. Several existing treatments for BED are reported to be effective to different extents, including either therapist-led or self-guided cognitive Behavior Treatment, Interpersonal Therapy, and Dialectical Behavior Therapy.

Keywords: Binge Eating Disorder, Negative emotion, Intervention.

1. Introduction

Binge eating happens when a person incoercible takes in an enormous amount of food in a comparatively short period. If such binge eating episodes happen over once a week for more than three months, then the individual is highly susceptible to having what is called Binge Eating Disorder, or BED. Characteristics of Binge Eating Disorder include repeating incidents of binging behavior. Patients usually feel ashamed and guilty after binging, and some may try to make up for the eating through unhealthy means. BED is a commonly diagnosed eating disorder. According to data collected in the United States, there were about 0.42% of male patients and 1.25% of female patients [1]. Moreover, binge eating could cause physical health problems like being overweight, heart disease, and type 2 diabetes, as well as mental issues including depression, anxiety, suicidal tendency, and sleep disorders [2].

Binge eating disorder has undeniably negative consequences on people's lives both psychologically and physically and affects a large population. Emotions seem particularly important in studying binge eating disorders since people eat in response to emotions, and inadequate dieting, in turn, influences emotion regulation. This study functions to further inquire how emotions, especially negative emotions, impact and contribute to binge eating disorder and binging episodes, moreover the potential treatments for BED, given the disorder's widespread effects and growing numbers of patients. This report primarily uses pre-existing academic research articles available in the database to summarize and analyze the role of emotion in three dimensions, including the effects of negative emotions on binge eating, why they worsen the symptoms, and how emotional regulation could be a potential treatment.

2. An Overview: The Effects of Negative Emotions on Binge Eating Symptoms

Dysmorphic negative emotions like depressive moods, sadness, anger, anxiety, and so on are often observed to precede binge eating symptoms in binge eating disorder patients. Guilt, in addition, is observed almost universally in non-purging binge eaters after their binging behaviors [3]. The

relevance of negative moods is considered when studying for BED. According to a study done by Hilbert et al., prior episodes of binge eating participants generally experience more negative feelings than preceding normal food intake or any arbitrary baseline assessments [4]. Moreover, mood after the binging behavior was also measured with a deterioration of negativity. In another experiment carried out by Dingemans et al. in 2009, participants were asked to view a sad movie to induce negative emotions and then were invited to do a taste task [5]. Depressive symptomology, a set of symptomatic characteristics exhibited by the tested subjects, was shown to be positively correlated with later caloric intake. The BED patients who were most influenced by the aroused depressive moods consumed the most calories. These studies further consolidate negative emotions concerning binge eating. Some researchers suspect overeating may be a means to compensate for or repair down moods.

3. Why Do Negative Emotions Worsen Binge Eating Symptoms?

3.1 Biological Perspective

Cortisol is suspected to be playing a role in leading to negative emotions' impact on binge eating episodes. It is synthesized during times of both physical and psychological stress and is therefore considered the "stress hormone". According to a study done by Gluck et al. in 2004, high cortisol level is positively associated with food intake after stress. Binge eating disorder patients have a significantly higher cortisol level after induced stress than those non-BED participants [6]. HPA Axis (Hypothalamic-Pituitary-Adrenal Axis) is the pathway where the hypothalamus, pituitary gland, and adrenal gland interact with each other, and it produces cortisol in response to stress. In the same study, hyperactive HPA Axis activity related to abdominal obesity is observed in BED patients, further indicating cortisol's possible role in binge eating disorder [6]. There is other evidence suggesting cortisol is a factor contributing to binge eating disorders. In a 2013 study by Rosenberg et al., Trier Social Stress Test (TSTT) was applied in which participants were asked to publicly speak in front of an unresponsive audience to induce social stress [7]. Researchers found a significantly higher longing for food consumption and desire, especially for sweet aliments, in BED patients than in non-BED test subjects after exposure to social stress. This high desire to eat positively correlates with cortisol arousal in BED participants only.

3.2 Psychological Perspective

People could develop binge eating behaviors in response to passive emotions like stress, anger, loneliness, and depression. These emotional eating manifests as seeking to comfort food that is high-caloric or high-carbohydrate including ice cream, chocolate, French fries, and so on. Among the negative emotions, shame is emphasized when studying for binge eating disorder. It is characterized by extensive self-consciousness originating from external evaluation, and people experiencing shame perceive others' opinions regarding themselves negatively. Patients with BED often feel shameful for their uncontrollable eating behavior, which directly influences binge eating. A study has shown shame positively correlates with binge eating severity [8]. The excessive external shame can be internalized as other negative emotions, and it also serves as a warning signaling possible rejection or attack from others [9]. Binge eating may be developed as a maladaptive or avoidance strategy to avoid being disturbed by negative thoughts and shameful feelings, especially when BED patients perceive others as recognizing them negatively regarding their body image and eating behavior [8]. As mentioned in the report, binge eating may lead to numerous negative consequences, whether in one's body or mental state. The worsening of physical health and deviation from normality contribute to the elevating feelings of shame and self-disappointment, which further induces the maldevelopment in the patient's mental state with negative emotions, thus forming a vicious cycle. In addition, BED patients tend to ruminate, repetitively thinking over a problem, mostly in a negative way, on their undesirable emotions, which further leads them to develop psychopathological symptoms [5].

4. Treatments for Binge Eating Disorder

Binge Eating Disorder (BED) leads to health issues such as obesity, which negatively affects both physical and mental health to a great extent. Except for its direct negative health effects, being obese in youth raises the long-term risk of adult morbidity and mortality. As a result, BED treatments are important and necessary for patients. The BED cure can be classified into two aspects: with and without medication. Scientists have conducted studies trying drugs like fluoxetine which treat mental diseases such as depression in patients with BED, but it can be conducted from the results of the experiments that these medicines are relatively not effective in dealing with binge eating. However, one medicine figured out to be valid in dealing with BED is Vyvanse, while the underlying reason is that it causes weight loss is still uncertain. In contrast, psychological treatments without medication are more widely-used. In addition, the two mainstream psychotherapies are cognitive behavior treatment (CBT) and interpersonal psychotherapy (IPT).

4.1 Cognitive Behavior Treatment (CBT)

Cognitive Behavior Treatment, abbreviated as CBT, is evidence-based psychotherapy used by psychological experts all around the world. It is designed to address distorted/dysfunctional cognition and maladaptive behavior and has been identified as an effective cure for a few psychological diseases[10]. CBT is also used as a valid therapy worldwide for people suffering from BED, and there are two kinds of CBD for curing BED.

The first is therapist-led CBT, which is used as first-line therapy for BED in many countries, including Australia and the United States. This CBT led by therapists, contains individual meetings between the therapists and the sufferers of BED, while the therapists guide different respects of the treatment, such as what treatment to perform in every stage and what behavioral experiments to be carried out between the sessions [11].

The other type of CBT is guided self-help CBT, a less labor-initiative form of CBT that is recommended and used mainly in the UK. In guided self-help CBT, patients independently read or view contents to help them better understand their mental and behavioral problems and follow instructions step-by-step for the treatment that has been given. However, in this approach, the real therapists provide some feedback or guidance (through face-to-face communications, online video conferences, or phone calls) less frequently than in CBT led by therapists. It is a better treatment for those who live in remote areas or do not have the money and time for one-on-one CBT led by therapists. [12].

Three current meta-analyses and systematic reviews supported proving the efficacy of CBT for dealing with BED. The first review, posted in 2020, contained a total of 116 studies, and 58 used CBT as the main method to treat BED. The results showed by this review suggest that CBT is the mostly conducted treatment in dealing with BED and is a highly effective treatment because it induces a long-term reduction in the behavior of binge eating (as assessed in follow-up measurements more than a year after the end of the course of treatment). Another meta-analysis and systematic review posted in 2017 demonstrated that CBT, either in a therapist-led or guided self-help model, led to a significantly greater decline in cognitive and behavioral symptoms of BED by delivering CBT to 35 patients with BED. The third one was published in 2016, and this review contains 342 cases using CBT for BED patients, in which 59% showed effectiveness in achieving abstinence from binge eating. Taken together, the above meta-analyses and systematic reviews confirm the effectiveness of CBT for BED and suggest that CBT can confer lasting benefits.

4.2 Interpersonal Psychotherapy(IPT)

Studies using interpersonal psychotherapy, which is shortened to IPT, have also shown its efficacy in dealing with binge eating disorders. This method was initially used to cure adult depression, and it is a kind of treatment focusing on improving the functioning of interpersonal socializing by linking the symptoms to socializing problems and coming up with methods for treating these disorders [13].

In the 1980s, IPT was altered successfully for BED. According to theories and scientific research, BED results from negative emotions that might be associated with complex interpersonal reactions. In essence, patients with binge eating disorders often have to struggle with interpersonal problems. As a result, IPT is currently widely-used for BED patients as well [14].

IPT can be mainly separated into 3 phases. First, the initial phase includes an assessment of the mental problem, psychological education about the property of the disorder, and an assessment of the patient's situation in socializing. This process helps the patients with BED release extra social pressure and elicits their collaboration in the process of recovery. The termination stage involves assessing and consolidating treatment outcomes, acknowledging feelings related to the end of the course of treatment, and planning to maintain improvement while outlining the remaining work. IPT has shown efficacy in treating various kinds of mood disorders and a few non-mood disorders [15].

According to Marian et al., interpersonal problems can cause a vicious cycle of binge eating [14]. In addition, social issues can lead to feelings of low self-esteem in individuals or even cause dysphoria. To cope with this influence, people may start LOC eating, which might develop into BED. As a result, these patients will undergo a gain in weight or even obesity. This might lead to negative emotions and interpersonal problems again, starting a new cycle and worsening the problem of binge eating.

However, it is also indicated that IPT can make a virtuous cycle in reducing the symptoms and effects of BED. First, IPT can reduce and solve interpersonal problems, thus increasing self-esteem and improving the mood of patients. Then they can rely less on food to cope with the negative emotions from socializing and decrease binge or LOC eating. Finally, a sufferer of BED can achieve weight loss and then weight maintenance.

4.3 Dialectical Behavior Therapy (DBT)

Dialectical behavior therapy (DBT) is a kind of mental therapy originally developed for treating people who have a borderline personality disorder and suicidal behaviors. This treatment has since been applied to curing other psychological illnesses, including eating problems. DBT therapists deal with binge eating problems by teaching patients skills, which can be separated into 4 parts: mindfulness, tolerance of distress, interpersonal efficacy, and emotion regulation. Dialectical synthesis helps to understand the ambivalent emotions of sometimes intending to stop overeating and sometimes not being able to. In this case, DBT therapists can be dedicated to helping BED patients accept that they experienced this ambivalent state and help them develop abilities to change their binge eating behaviors [16].

Some studies have shown the effectiveness of DBT in coping with binge eating. A systematic review published in 2012 contains nine studies about conducting DBT to BED and involves 265 patients. Systematic reviews have shown that DBT can replace CBT or IPT to some extent, especially for patients suffering from eating disorders and comorbidities or borderline personality disorders. In one study, DBT achieved the result that 89% of the participants who have BED had stopped binge eating for more than 28 days by the completion of the course of treatment [17]. Another study showed that among 101 patients who participated, 64% of them who received DBT achieved abstinence from BED in 28 days compared with the control group, which only had 36% [16].

5. Conclusion

From a series of data analyses and comparisons, it is not difficult to tell that these three psychological treatment methods for binge eating disorder are relatively effective to a great extent. It seems that combining psychological treatments with pharmacotherapy for BED can significantly induce reductions clinically in BED and related psychopathology in the patients. According to some studies and experiments, dealing with BED symptoms often involves more than one kind of therapy. In addition, given the effectiveness of cognitive behavioral therapy (CBT), interpersonal therapy (IPT), and dialectical behavior therapy (DBT) in curing BED, more mental healthcare experts from different disciplines are encouraged by us. Those who do not specialize in treating eating disorders

may also be trained in the evidence-based treatments described above to help the rising number of patients suffering from BED all over the world.

References

[1] Tu A, Cmg B . Prevalence and Correlates of DSM-5–Defined Eating Disorders in a Nationally Representative Sample of U.S. Adults[J]. Biological Psychiatry, 2018, 84(5):345-354.

[2] National Institute of Health, N.I.H. Definition & Facts for binge eating disorder. National Institute of Diabetes and Digestive and Kidney Diseases, (2021, May). Retrieved August 30, 2022, from https://www.niddk.nih.gov/health-information/weight-management/binge-eating-disorder/definition-facts

[3] Yanovski, S. Z. (1993). Binge Eating Disorder: Current Knowledge and Future Directions. Obesity Research, 1.

[4] Hilbert, A., & Tuschen-Caffier, B. (2007). Maintenance of binge eating through negative mood: a naturalistic comparison of binge eating disorder and bulimia nervosa. National Library of Medicine. Retrieved 2022, from https://pubmed.ncbi.nlm.nih.gov/17573697/

[5] Dingemans, A., Danner, U., & Parks, M. (2017, November). Emotion regulation in binge eating disorder: A Review. Nutrients. Retrieved August 31, 2022, from https://pubmed.ncbi.nlm.nih.gov/29165348/#:~:text=Negative%20emotions%20and%20maladaptive%20emotion%20regulation%20strategies%20play,hurt%20or%20loneliness%29%2C%20seem%20to%20be%20particularly%20relevant.

[6] Gluck, M. E., Geliebter, A., & Lorence, M. (2004). Cortisol stress response is positively correlated with central obesity in obese women with binge eating disorder (bed) before and after cognitive-behavioral treatment. Annals of the New York Academy of Sciences. Retrieved September 1, 2022, from https://pubmed.ncbi.nlm.nih.gov/15677411/

[7] Rosenberg, N., Bloch, M., Avi, I. B., Rouach, V., Schreiber, S., Stern, N., & Greenman, Y. (2013). Cortisol response and desire to binge following psychological stress: Comparison between obese subjects with and without binge eating disorder. Psychiatry research. Retrieved September 1, 2022, from https://pubmed.ncbi.nlm.nih.gov/23083917/

[8] Duarte, C., Pinto-Gouveia, J., & Ferreira, C. (2017). Ashamed and fused with body image and eating: Binge eating as an avoidance strategy. Clinical psychology & psychotherapy. Retrieved September 1, 2022, from https://pubmed.ncbi.nlm.nih.gov/26689603/

[9] Gilbert, P. (2007). Apa PsycNet. American Psychological Association. Retrieved September 1, 2022, from https://psycnet.apa.org/record/2007-14002-016

[10] Fairburn C. Cognitive Behavior Therapy and Eating Disorders. New York: Guilford; 2008.

[11] da Luz FQ, Hay P, Wisniewski L, Cordás T, Sainsbury A. The treatment of binge eating disorder with cognitive behavior therapy and other therapies: An overview and clinical considerations. Obesity Reviews. 2020, 1–12. https://doi.org/10.1111/obr.13180

[12] Wilson GT, Zandberg LJ. Cognitive–behavioral guided self-help for eating disorders: effectiveness and scalability. Clin Psychol Rev. 2012, 32(4):343-357.

[13] Klerman GL, Weissman MM, Rounsaville BJ, Chevron ES. Interpersonal Psychotherapy of Depression. New York: Basic Books; 1984.

[14] Marian, Tanofsky-Kraff, Denise, et al. Preventing excessive weight gain in adolescents: interpersonal psychotherapy for binge eating. Obesity. 2007, 15:1345–1355.

[15] Wilfley D, Stein R, Welch R. Interpersonal psychotherapy. In: Treasure J, Schmidt U, van Furth E, eds. Handbook of Eating Disorders. London: John Wiley & Sons; 2003, pp. 70-253.

[16] Safer DL, Jo B. Outcome from a randomized controlled trial of group therapy for binge eating disorder: comparing dialectical behavior therapy adapted for binge eating to an active comparison group therapy. Behav Ther. 2010, 41(1):106-120.

[17] Bankoff SM, Karpel MG, Forbes HE, Pantalone DW. A systematic review of dialectical behavior therapy for the treatment of eating disorders. Eating Disorders. 2012, 20(3):196-215.