

Psycho-therapeutic Intervention for Meta-cognitions and Emotional Regulation in Binge Eating Disorder: A Systematic Review

Iqra Qadeer¹, Uzma Ilyas², Hurmat Zahra³, Haya Saleem⁴, Muhammad Ibrar⁵

¹MS Clinical Psychology, Department of Psychology, University of Central Punjab (UCP), Lahore.

²Principal Lecturer, Department of Psychology, University of Central Punjab (UCP), Lahore.

³MS Clinical Psychology, Department of Psychology, University of Central Punjab (UCP), Lahore.

⁴MS Clinical Psychology, Department of Psychology, University of Central Punjab (UCP), Lahore.

⁵New Mexico Highlands University, Las Vegas, USA

Correspondence: ozma.ilyas@gmail.com²

ABSTRACT

Aim of the Study: This article aimed to systematically review the researches that advocate the understanding of neurological basis and psychological trajectory in meta-cognition among patients with Binge eating disorders. The objective was to update the existing literature and help clinicians better understand the efficacy of CBT intervention for binge eating disorders (BEDs) while taking into account their meta cognition and emotional dysregulation.

Methodology: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model was utilized to conduct this systematic review. For this purpose, research article on emotional dysregulation in patients with binge eating disorder in which Cognitive Behavior Therapy (CBT) was utilized as an effective treatment for BED were scrutinized. Different electronic databases such as Research Gate, Google Scholar and Science Direct were employed to gather relevant articles. (N=345) articles were collected and assessed however, only 16 articles were selected for review based on the inclusion and exclusion criteria.

Findings: The findings of the systematic review pointed that individuals with BED use maladaptive strategies for emotional regulation and exhibit high negative self-directed behaviors, lack of emotional awareness, and inability to involve in goal directed behaviors. Impaired metacognition and impulsivity were also identified as core elements of BED.

Conclusion: Poor metacognitions, lack of self-control and emotional dysregulation that trigger or initiate binge eating behaviors can be regulated through interventions. CBT was found to be an effective treatment for binge eating disorder as it addresses meta cognitions and attempts to improve emotional regulation strategies.

Keywords: Pharmacology, Binge Eating Disorder, Meta-cognition, Emotional Regulation, Cognitive Behavior Therapy.

Article History

Received:
September 07, 2023

Revised:
November 29, 2023

Accepted:
December 10, 2023

Published:
December 30, 2023

Introduction

Recurring episodes of binge eating are the hallmark of binge eating disorder (≥ 1 per week for 3 months), consuming large amount of food in relatively short time (≤ 2 hours), often followed by a compensatory behavior. *The individual lacks sense of control over eating and eat until extremely full without even feeling physically hungry.* The compensatory behavior such as self-induced vomiting is followed afterwards due to guilt and embarrassment (DSM of Mental Disorders 5th Edition; American Psychiatric Association, APA, 2013). Approximately 2.03% of adult population in their lifetime in U.S. are affected by binge eating disorder which makes it is the most widespread eating disorder (Cossrow et al., 2016). Its more prevalent in women (3.5%) as compared to men (2.0%). Typically, it will happens in early adulthood but can also appear in adolescence and proceed well beyond midlife (Erskine & Whiteford 2018; Hilbert et al. 2017).

Emotional regulation is complicated construct which encompasses all the processes with which an individual assesses, interprets and changes his or her emotional states in response to events (Garnefski & Kraaij, 2007). Furthermore, it creates issues with emotional awareness, acceptance, clarity, engaging in goal directed behavior, and the capacity to control impulsive behaviors when upset and adoption of effective emotion regulation strategies as well. The incapacity to control emotions not only contribute to the development but also sustains binge eating behavior (Brockmeyer et al., 2014). However, a recent study conducted by Monell et al. (2014) confirms that overwhelming, incomprehensible and negative emotion while being upset inducing shame, guilt, embarrassment, feelings of helplessness and lack of impulse control as key transdiagnostic features in binge eating disorder.

Eating disorder typically develop until mid to late adolescents (Hudson et al, 2007). Emotional dysregulation is a menace to the development of binge eating disorder. It indicates that emotional dysregulation is a risk factor that precede the onset of binge eating disorder. As compared to other stages of development, in adolescence emotions are experienced more intensely and frequently making adolescents vulnerable to emotional dysregulation (Bailen et al., 2018). Therefore, this review was entirely focused on studies conducted on adolescents.

The primary research questions for this systematic review is therefore: What are the dysfunctional emotional regulation strategies in individuals with BED and the effectiveness of treatment methodologies. There are different treatment approaches including psychological and pharmacological, which proved helpful in treating patients with BED. However, the focus is only on the psychological approach that is CBT, which directly addresses emotional dysregulation caused by BED. CBT is endorsed as an effective treatment methodology in current practice guidelines from APA and by NICE either in individual therapy or in group form to treat binge eating disorder (American Psychiatric Association, 2022). CBT is also recommended by renowned international evidence-based clinical guidelines for treating eating disorders especially binge eating disorder, those from New Zealand, Australia, Germany, Spain and Netherlands, United Kingdom and United States (Hilbert et al., 2017).

A group of researchers in Pakistan conducted a systematic review examining previous neurological researches on binge eating disorder by including studies of emotional dysregulation in patients of binge eating in which CBT was utilized as an effective treatment for binge eating disorder. Recently published research papers were analyzed, there was a need of a systematic study to synthesis those researches. Thus, the goal of this study is to update the existing body of literature and secondly to help clinicians to better understand the efficacy of using CBT as a therapeutic strategy for treating binge eating disorder while taking into account their emotional dysregulation.

Methodology

This systematic review took into account research papers that were cross-sectional, longitudinal, randomized and non-randomized, those based on control group and without control group. All of the studies included in review were solely concerned with binge eating disorder. All those research papers

which included Bulimia Nervosa and Anorexia Nervosa or other diseases were excluded. Material including articles written in a language other than English were excluded. Adolescents having a BED diagnosis according to the DSM, IV TR or 5th Edition, were the population of interest.

The articles fulfilling the inclusion criteria were and accessible in full text were included. The remaining papers were then independently assessed by authors followed by an agreement on the inclusion criteria for the systematic review. The studies included were categorized according to their design, sample, method, and results. For the search strategy, a framework was created in which binge eating in combination with successful treatment approaches were searched. A description of the Binge Eating Disorder that was treated using various treatment modalities, as well as the methodology used to evaluate Binge Eating from each paper included in this review, were helpful in treating patients with BED. Only the psychological strategy CBT which directly address the emotional dysregulation that leads to BED was the focus of this article.

Results

The science direct electronic database yielded 5 results, and a second search was done using google scholar which resulted in 325 articles from 2016 to 2023. Another search via research gate resulted in 200 potentially relevant papers. After removing the duplicated articles the author manually screened 141 articles. Those 141 articles were assessed in full text eligibility. This study included 16 articles however additional 2 articles were added by reference list searching. All the studies selected for review were published between 2016-2023.

Papers were excluded from this review for multiple reasons (in different language other than English, content not about emotional regulation, binge eating and CBT, type of articles etc.). Only those studies were added which were based on emotional dysregulation as a cause of binge eating. Only those papers were included which were based on CBT as an effective treatment for binge eating disorder. There are some worth mentioning reasons for excluding studies. Firstly, some of the studies focused exclusively on other disorders and variables in relation to binge eating disorder and this review was primarily based on emotional dysregulation as a cause of binge eating disorder (Merwin et al., 2021; Sara et al., 2017). Secondly, those studies which were based on binge eating disorder in obese adolescents and adults were also excluded (Madeeha et al., 2019). Thirdly, those papers were excluded in which treatment methodologies other than CBT were employed were excluded. This paper focused exclusively on CBT as a treatment methodology for binge eating disorder (Felipe et al., 2020). Studies with limited emotional regulation strategies such as positive reappraisal, rumination and suppression were also excluded (Dingemans et al., 2017). A wide variety of strategies were focused to regulate emotions including positive reappraisal, refocusing, rumination, refocusing on planning, blaming others or oneself, and association between these strategies as well therefore, beliefs related to binge eating and other variables were also added (Anna et al., 2021). Moreover, association between emotional dysregulation and dietary restraint, purging behavior, driven exercise and binge eating was also explored.

Features of the study Included

Each study incorporated into this review were published between 2016-2023. Sixteen articles included in this review were longitudinal, cross-cultural and randomized control group trial study design. Sample size of these studies ranged between 7-117. For data collection these studies used questionnaires either online or in person. In other studies, pre-posttest trial test was compared to compare the results. Further detail of articles is mentioned in flow chart (see Figure 1).

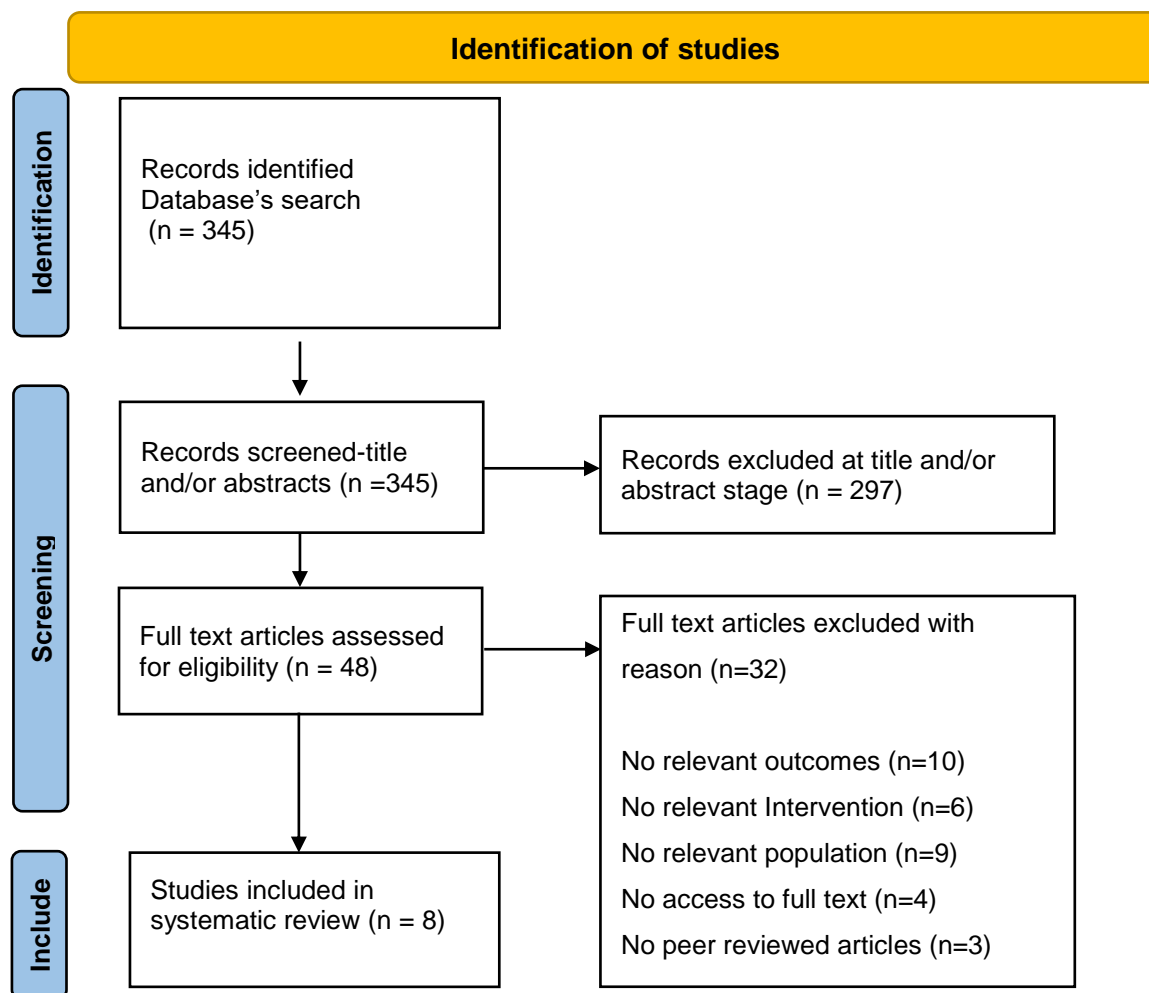


Figure 1. PRISMA 2023 flow diagram for systematic Review

The studies included in the review are presented in Table 1.

Table-1: Studies describing the efficacy of CBT

Study reference	Interventions	Country	Study design	type/	Sample characteristics	Conclusion
Vivienne et al.,2020	ICAT-BED CBTgsh	USA	RCT up	follow	Adults with BED N=112 age 18-64years M=39.7, SD=13.4	The results from RCT comparing the efficacy of integrating cognitive affective therapy with cognitive behavior therapy revealed significant improvement in emotional dysregulation in BED patients at 6-month follow up
Carol et al.,	ICAT-BED	USA	RCT	follow	Total : 112 adults with	RCT trials comparing ICAT-BED with CBTgsh

2020	CBTgsh		up	BED, age 18-65, BMI > 21, CBTgsh (N=56), ICAT-BED(N=56),	revealed a significant reduction in BED frequency at EOT follow-up
Mirjam et al., 2020	DBT-ED CBT+	Netherland	Experimental, follow up	Total: 74 obese with BED, Age: 18+, CBT+(N=33), DBT-BED(N=41), Women=66(89.25) Men=8(10.8%), M=3.29, SD=.95	The result showed no significant difference in BED patients at the follow vs. end of treatment. DBT-BED group reached 69.9% vs. 65.0% change. CBT+ group reached 52.9% vs 45.8% change indicating CBT+ as an effective treatment.
Sandra et al., 2020	EF-BED	Europe	Mixed method, follow-ups	Total= 7 females with BED outpatient. Age= 26-56 BMI=30-38.86kg/m ² M= _{age} 38.29, SD= _{age} 9.32	Findings revealed EF-CBT program's long-term efficacy. Proved useful in improving emotional awareness and controlled eating. Retention rate =70%
Elnaz et al, 2021	Methylphenidate Vs. CBT (pharmacotherapy)	Canada	Qualitative (Exploratory)	Total=15 female completed RCT (8 MP, 7 CBT) Age=19-51, M= _{age} 34.4, SD= _{age} 8.59 BMI=38.8,	Both MP and CBT increased awareness of eating behavior caused due to emotions and thoughts, CBT increased self-awareness and confidence.
Borhani et al., 2023	CBT and ST	Iran	Experimental, follow-ups	Total=45 participants Experimental group received CBT and ST for 12 weeks, control group receive no treatment.	The results revealed that compared to CBT, ST proved to be more efficient for loneliness and emotional adjustment.
Danielle & Kathryn, 2019	CBT+ for BED	Canada	Experimental, follow-ups	Total= 76 adults with BED and BN, M=6.6, SD=0.6	The findings revealed substantial improvement in emotion regulation in 4 weeks treatment with CBT and lower ED psychopathology although no abstinence of BED related behavior in 6 weeks of treatment.
Yousef et al, 2021	EFT-BED	Iran	Experimental, follow-up	Total=40 BED females, experimental group N=20, control group N=20	Group EFT reduced difficulty in emotional regulation significant at 2-month follow up (P<0.05)
Carlos et al., 2023	Inpatient specialized	USA	RCT (double blind),	Total= 31 females with BED,	Remission rate of BED for CBT group was

	multidisciplinary treatment based on CBT and components of third wave intervention		follow-ups	BMI=38.99kg/m ² M= _{age} 46.3 CBT (N=18), non-CBT (N=13)	significantly high (61.1% N=11/18), non-CBT (7.7% N=1/13)
Kevin et al., 2021	EFT for BED	Australia	RCT, follow-up	Total= 21, female(N=17), male (N=4), Age 18 to 65, SD= _{age} 11.89,	Findings suggest that although CBT has been proved to be most effective but EFT is more effective for managing emotions in BED
Paolo et al., 2021	Specialized in patient treatment	Italy	Correlational	Total=67 females, BN(N=28), AN(N=28), BED(N=11), Age 14-60years, M= _{BMI} 20.76-9.55kg/m ²	Results revealed Significant improvement in ED patients with emotional regulation.
Lisa et al., 2020	ICAT-BED CBTgsh	USA	RCT, follow-up	Total=112 adult female with BED, BMI=35.1 SD=8.7, Age 18-64, M= _{age} 39.7, SD= _{age} 13.4	Study findings revealed ICAT-BED more effective than CBTgsh in reducing difficulties of emotion regulation and dietary restraint at the end of treatment and monthly follow-up.
Simone et al., 2019	Internet based guided self-help therapy (GSH)	Switzerland	Exploratory	Total= 60 participants, age=18-70 TG(N=20), CG(N=20), Placebo Group (N=20)	The study will develop and evaluate the efficacy of internet based Guided self-help therapy derived from CBT for treatment of Patients with BED
Elana et al., 2021	Brief cognitive behavior therapy	UK	Experimental, follow-ups	Total= 53 patients with BED, female (N=41) male (N=11), BMI<27 low weight	10 sessions of CBT-T proved clinically effective for BED despite of high emotionally driven eating.
Marta et al., 2018	VR-CET A-CBT	Europe (Italy, Spain, Chile)	Experimental, follow-ups	Total= 64 patients BN(N=35), BED(N=29), A-CBT (men=8/29.6%, women=10/64%) VR-CET (men=11/35.5%) M= _{age} 34.37(A-CBT)34.64(VR-CET) M= _{BMI} 28.69(A-CBT) 27.27(VR-CET)	Both treatments showed significant improvements, although VR-CET higher abstinence from BED then A-CBT

Lena et al, 2019	Pharmacotherapy Methylphenidate Vs. CBT	Canada	RCT	Total=48 adult female with BED, Age 19-51, $M_{age}=32.78$, $SD_{age}=8.62$, BMI>25	Both treatments had significant impact on both primary (BED episode frequency) and secondary (impulsivity and quality of life) also methylphenidate is associated with greater decrease in BMI
------------------	--	--------	-----	---	--

CBT: Cognitive Behavior Therapy, ICAT-BED: Integrative Cognitive Affective Therapy for Binge Eating Disorder, CBTgsh: Guided Self-Help Cognitive Behavior Therapy, DBT: Dialectical Behavior Therapy, EF-CBT: Emotion Focused- Cognitive Behavior Therapy, ST: Schema Therapy, EFT-BED: Emotion Focused Therapy for Binge Eating Disorder, bCBT: Brief Cognitive Behavior Therapy, VR-CET: Virtual Reality based Cue Exposure Therapy, A-CBT: Advanced-Cognitive Behavior Therapy, EOT: End of Treatment, BMI: Body Mass Index, RCT: Randomized Controlled Trials.

Biological and psychological markers of Binge Eating Behaviors

Emotional regulation and Binge Eating Disorder (BED)

Emotional dysregulation is characterized as a failure to employ effective emotional regulation strategies involving a wide range of complex behavioral and cognitive components (Gratz & Roemer, 2004; Keenan, 2000). A study of meta-analysis conducted by Prefit et al., found that emotional dysregulation is highly associated with eating behavior pathologies including binge eating disorder. Literature shows that, dysfunctional emotion regulation is one of the most problematic issues causing binge eating disorder (The Guilford Press, 2013).

Studies found that women suffering from Binge eating disorder show higher inclination to not accept emotional reactions. They have issues in engaging in goal-directed behavior. They lack emotional clarity and have limited access to emotional regulation strategies as compared to healthy women (Anna et al., 2021). Another study conducted by Elin, David and Andreas (2020) found that those participants in their study with binge eating disorder specifically scored higher in emotional dysregulation i.e., they showed emotional helplessness and difficulties in maintaining focus. Moreover, Monell et al., (2020) suggested that individuals with BED also have difficulties in maintaining self-control when upset. They also concluded that patients with binge eating disorder show higher level of negative self-directed behavior which they employ as a negative emotional dysregulation strategy as compared to patients with other pathologies of eating disorders. Among patients suffering from Binge eating disorder affiliation (i.e., increased self-blame and decreased affirmation) is a significant mediator. Likewise, recent studies have also shown a strong association between self-blame, self-affirmation and love with Binge eating disorder (Mantilla & Birgegard, 2015).

Another study included in this review assessed emotional dysregulation using 36 item scale DERS (Gratz & Roemer, 2004), indicated higher scores among patients of BED. Higher scores reflected higher difficulties in all the areas measured by six subscales such as non-acceptance (refusal to tolerate emotional distress), goals(difficulty in maintaining goal-directed action) and impulse (inability to control behavior) awareness (lack of emotional awareness and emotional inattention), clarity (lack of emotional understanding) and strategies (negative emotional regulation strategies when upset (Monell et al., 2017)

Maladaptive Emotional regulation and BED

Maladaptive emotional regulation strategies included blaming oneself or others for a give situation, ruminating (remembering negative events and their consequences consistently), catastrophic thinking or suppressing. Rumination is also proved to be a characteristic strategy in eating psychopathology including BED (Wang et al., 2017). The study included in this review namely examined emotional regulation in binge eating disorder compared 35 women with BED with 41 healthy women using different scales including cognitive emotion regulation questionnaire and difficulties in emotion regulation scale. Results showed that BED group had significantly higher level of emotional difficulties. Moreover, another study

also found that BED group had higher likelihood of using maladaptive emotional regulation strategies such as rumination and self-blame and have less preference for using adaptive emotional regulation strategies such as bringing emotional clarity and positive refocusing.

Meta-cognition and emotional dysregulation in BED

A study of network analysis based on total 155 outpatients of BED was conducted to measure affectivity, metacognition and emotional dysregulation. The study found that the central elements of impairment in BED patients were poor metacognition and trouble in controlling impulses. The results showed that difficulties of impulse control and impaired self-monitoring metacognition were the nodes that were of high centrality. The central nodes were conceptualized to be the core symptoms causing the development of connected symptoms such as BED and other psychopathologies (Fried & Cramer, 2017). Moreover, the study also found that the nodes of BED are directly connected to unacceptance of emotions, impulsive behavior and lack of emotional clarity (Aloi et al., 2021). Thus, it can be concluded that emotional dysregulation and metacognition plays a key role in creation and maintenance of BED.

Treatment Methodology

CBT is proved to be an effective intervention in treatment of binge eating disorder (Beck et al., 2015). As a counselling approach CBT is designed to address individual problems by reconstructing their cognitive and deviant behavior. This approach is based on formulation of behavioral strategies to alter the cognitive and disruptive beliefs. The counselling process include addressing the problems of individual client by understanding the specific beliefs or conceptualizing those believes to change individual behavioral pattern. The outcome of CBT is assumed to be the emergence of changes in emotions and behavior for better by restructuring distorted belief system (Edy, 2019).

These negative beliefs and thoughts usually emerge in the form of low self-confidence, feeling of being compared to others and feelings of helplessness. BED patients are usually stressed due to these inferiority complexes and therefore consume excessive amount of food uncontrollably as a way of dealing with stress. They assume food is a source of stress relief while losing weight is considered acceptable by family and friends (Rooslain, 2013).

The role of CBT in changing emotional dysregulation strategies especially altering negative coping strategies has been widely studied, with binge eating disorder offering an opportunity to understand the relationship between emotional processing and cognitive abilities (Rosen et al, 2006). However to determine the efficacy of cognitive behavioral therapy, this review only includes three researches.

Likewise, Frisca et al., (2022) conducted a study on adolescents to see the effectiveness of cognitive behavior therapy with binge eating disorder. The intervention was carried out in the form of cognitive behavior therapy for 10 days and got satisfactory results.

Another study by Elana et al., (2021) included in this review analyzed effectiveness of brief cognitive behavior therapy in patients diagnosed with BED. In this study, 53 patients of binge eating disorder were studied in clinical setting to analyze the efficacy of CBT with 10 sessions. Overall, results showed that CBT is a reliable and cost-effective therapy for patients suffering from BED since participants showed improvement after 4 sessions.

Discussion

The main objective and goal of this systematic and comprehensive review was to clarify the relation between emotional dysregulation and binge eating disorder. This study also focused on clarifying the efficacy of psychotherapy such as CBT for BED. Based on 8 articles reviewed: the major findings were: (a) patients with BED uses maladaptive emotional regulation strategies such as self-blame or other blame for the give situation, catastrophizing thinking and rumination as compared to healthy people (Wang et al., 2017) (b) BED patients showed higher level of negative self-directed behavior as compared to other pathologies of eating behavior (Monell et al., 2017) (c) BED patients experience issues engaging in goal-

directed actions, lack of emotional awareness and limited access to emotional regulation strategies (Anna et al., (2021) (d) BED patients showed emotional helplessness and difficulties in maintain focus when upset (Monell et al., 2020) (e) it was also clarified that central elements of BED were impaired metacognition and impulsivity (Aloi et al, 2021). In order to investigate the effectiveness of CBT which was the second aim of this systematic review; three studies were analyzed. Those studies were based on randomized controlled trials and pre-posttest analysis to compare the symptom severity of subjects before and after the treatment intervention. However, the use of different research methodologies and conceptually distinct measure is problematic, because it causes variability and inconsistency in findings. Moreover, it was difficult to get a clear understanding of comparability of participants in terms of severity of symptoms based upon different diagnostic criteria such as moderate, severe or mild.

Other limitations and gaps found in the literature were: firstly, most of the researches included in this review relied upon cross-sectional study method. While several evidences suggest that emotional dysregulation is a central element of binge eating disorder, more experimental researches and longitudinal studies would be better helpful to understand the core factors of binge eating disorder. This systematic review focuses on CBT as a primary intervention for emotional dysregulation in BED patients. More longitudinal researches should examine the maintenance framework that could be applied to investigate the onset and improvement in behavior empirically. Secondly, the studies included in this review suggest that emotional dysregulation is particularly prominent in adolescents who develop binge eating pathology.

More studies are required to investigate the core factors of emotional dysregulation among adolescents to further enhance understanding. Recent researches on the CBT model indicated that the core feature of binge eating disorder is mood intolerance associated with stress related to shape concerns (Jones et al, 2020). Further researches are required to examine the course of binge eating and its relationship with preceding binge eating disorder. Moreover, further studies are essential to increase the understanding of developing eating pathology in relation to emotional dysregulation at critical stages of developmental periods of adolescents.

Thirdly, most of the researches included in this review examined bi-directionality in investigating the relationship among binge eating disorder and emotional dysregulation. It indicates a lack of literature focusing on the exacerbation or development of symptoms prevalent in binge eating disorder. Studies also indicated mixed findings. Some researchers conducted on adolescents indicated that subsequent emotional dysregulation is a preceding cause of binge eating disorder (Goldschmidt et al., 2017) while others indicated no link between subsequent emotional dysregulation and binge eating disorder (McLaughlin et al., 2011).

Lastly, much of the researches included utilized clinical samples of women diagnosed with binge eating disorder. This information is however valuable in terms of treatment approaches but this population cannot be considered a representative of all people with binge eating disorder (Anna et al., 2021). Further researches are required to understand the core aspects of binge eating disorder with relation to emotional dysregulation.

This review is not without limitations. Studies that assessed the comorbidity of anxiety and stress related disorders with binge eating disorder were not included. Despite these limitations, this study harmonized the effect of emotional dysregulation on binge eating disorder and found the effectiveness of psychotherapeutic interventions in the form of CBT, since there is no updated systematic review on this subject. The observations made by this review can be beneficial for future paradigms in assessment of emotional dysregulations in BED, which in turn may turn to be helpful for clinicians to better understand the nature of disorder and in formulating effective treatment interventions.

Conclusion

Individuals with binge eating disorders (BEDs) exhibit poor metacognitions, lack of self-control and impulsivity, experience emotional difficulties (unacceptance of emotional reactions, poor emotional

clarity, emotional helplessness, emotional inattention etc.) and employ maladaptive strategies such as rumination, catastrophic thinking etc. Addressing emotional dysregulation in the therapeutic intervention ensures and reinforces mindful eating while reducing the chances of impulsivity and lack of control leading to binge eating behaviors. CBT has a role in the emotional regulation particularly altering negative coping, therefore it is recognized as a prevalent intervention regime with binge eating disorder.

Acknowledgements

None.


Conflict of Interest


Authors have no conflict of interest.


Funding Source

The authors received NO funding to conduct this study.


ORCID iDs

Iqra Qadeer ¹  <https://orcid.org/0009-0009-6475-7954>

Uzma Ilyas ²  <https://orcid.org/0000-0002-0739-8934>

Hurmat Zahra ³  <https://orcid.org/0009-0007-4009-5728>

Haya Saleem ⁴  <https://orcid.org/0009-0002-7184-3649>

Muhammad Ibrar ⁵  <https://orcid.org/0009-0001-4236-0069>

References

- 2022 Annual Meeting In-Person in New Orleans. (n.d.). <https://www.psychiatry.org/psychiatrists/meetings/2022-annual-meeting>
- Aloi, M., Rania, M., Carbone, E. A., Caroleo, M., Calabrò, G., Zaffino, P., Nicolò, G., Carcione, A., Lo Coco, G., Cosentino, C., & Segura-Garcia, C. (2021). Metacognition and emotion regulation as treatment targets in binge eating disorder: a network analysis study. *Journal of Eating Disorders*, 9(1). <https://doi.org/10.1186/s40337-021-00376-x>
- American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). <https://doi.org/10.1037/0000165-000>
- Bailen, N. H., Green, L., & Thompson, R. J. (2019). Understanding Emotion in Adolescents: A Review of Emotional Frequency, Intensity, Instability, and Clarity. *Emotion Review*, 11(1), 63–73. <https://doi.org/10.1177/1754073918768878>
- Beck, A. T., Davis, D. D., & Freeman, A. (2015). *Cognitive Therapy of Personality Disorders*. New York: Guilford Publications. - References - *Scientific Research Publishing*. (n.d.). [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkozje\)\)/reference/referencespapers.aspx?referenceid=3021375](https://www.scirp.org/(S(351jmbntvnsjt1aadkozje))/reference/referencespapers.aspx?referenceid=3021375)
- Brockmeyer, T., Skunde, M., Wu, M., Bresslein, E., Rudofsky, G., Herzog, W., & Friederich, H. (2014). Difficulties in emotion regulation across the spectrum of eating disorders. *Comprehensive Psychiatry*, 55(3), 565–571. <https://doi.org/10.1016/j.comppsy.2013.12.001>
- Cossrow, N., Pawaskar, M., Witt, E. A., Ming, E. S. L., Victor, T. W., Herman, B. K., Wadden, T. A., & Erder, M. H. (2016). Estimating the Prevalence of Binge Eating Disorder in a Community Sample

- from the United States. *The Journal of Clinical Psychiatry*, 77(08), e968–e974. <https://doi.org/10.4088/jcp.15m10059>
- Dingemans, A. E., Danner, U. N., & Parks, M. (2017). Emotion Regulation in Binge Eating Disorder: A Review. *Nutrients*, 9(11), 1274. <https://doi.org/10.3390/nu9111274>
- Erskine, H. E., & Whiteford, H. (2018). Epidemiology of binge eating disorder. *Current Opinion in Psychiatry*, 31(6), 462–470. <https://doi.org/10.1097/ycp.0000000000000449>
- Fried, E. I., & Cramer, A. O. J. (2017). Moving Forward: Challenges and Directions for Psychopathological Network Theory and Methodology. *Perspectives on Psychological Science*, 12(6), 999–1020. <https://doi.org/10.1177/1745691617705892>
- Garnefski, N., & Kraaij, V. (2007). The Cognitive Emotion Regulation Questionnaire. *European Journal of Psychological Assessment*, 23(3), 141–149. <https://doi.org/10.1027/1015-5759.23.3.141>
- Goldschmidt, A. B., Wall, M. M., Zhang, J., Loth, K. A., & Neumark-Sztainer, D. (2016). Overeating and binge eating in emerging adulthood: 10-year stability and risk factors. *Developmental Psychology*, 52(3), 475–483. <https://doi.org/10.1037/dev0000086>
- Gratz, K. L., & Roemer, L. (2008). Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, 30(4), 315. <https://doi.org/10.1007/s10862-008-9102-4>
- Hilbert, A., Herpertz, S., Zipfel, S., Tuschen-Caffier, B., Friederich, H., Mayr, A., & De Zwaan, M. (2020). Psychopathological Networks in Cognitive-Behavioral Treatments for Binge-Eating Disorder. *Psychotherapy and Psychosomatics*, 89(6), 379–385. <https://doi.org/10.1159/000509458>
- Hilbert, A., Hoek, H. W., & Schmidt, R. (2017). Evidence-based clinical guidelines for eating disorders. *Current Opinion in Psychiatry*, 30(6), 423–437. <https://doi.org/10.1097/ycp.0000000000000360>
- Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The Prevalence and Correlates of Eating Disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, 61(3), 348–358. <https://doi.org/10.1016/j.biopsych.2006.03.040>
- International Journal of Social Service and Research (IJSSR). (n.d.). <https://ijssr.ridwaninstitute.co.id/index.php/ijssr/>
- Mantilla, E. F., & Birgegård, A. (2015). The enemy within: the association between self-image and eating disorder symptoms in healthy, non-help-seeking and clinical young women. *Journal of Eating Disorders*, 3(1). <https://doi.org/10.1186/s40337-015-0067-x>
- McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion dysregulation and adolescent psychopathology: A prospective study. *Behaviour Research and Therapy*, 49(9), 544–554. <https://doi.org/10.1016/j.brat.2011.06.003>
- Merwin, K. E., Mackinnon, S. P., O'Connor, R. M., & Flett, G. L. (2021). Socially prescribed perfectionism predicts next-day binge eating behaviors over 20-days. *Journal of Counseling Psychology*. <https://doi.org/10.1037/cou0000600>
- Monell, E., Clinton, D., & Birgegård, A. (2020). Self-directed behaviors differentially explain associations between emotion dysregulation and eating disorder psychopathology in patients with or without objective binge-eating. *Journal of Eating Disorders*, 8(1). <https://doi.org/10.1186/s40337-020-00294-4>

- Moore, E., Hinde, M., & Waller, G. (2021). Brief cognitive behavioural therapy for binge-eating disorder: clinical effectiveness in a routine clinical setting. *The Cognitive Behaviour Therapist*, 14. <https://doi.org/10.1017/s1754470x21000131>
- Prefit, A. B., Căndea, D., & Szentágotai-Tătar, A. (2019). Emotion regulation across eating pathology: A meta-analysis. *Appetite*, 143, 104438. <https://doi.org/10.1016/j.appet.2019.104438>
- Rosen, I. M., Gimotty, P. A., Shea, J. A., & Bellini, L. M. (2006). Evolution of Sleep Quantity, Sleep Deprivation, Mood Disturbances, Empathy, and Burnout among Interns. *Academic Medicine*, 81(1), 82–85. <https://doi.org/10.1097/00001888-200601000-00020>
- Summary for Policymakers. (2014). *Cambridge University Press EBooks*, 1–30. <https://doi.org/10.1017/cbo9781107415324.004>
- Thomas, J. J., Wons, O. B., & Eddy, K. T. (2018). Cognitive-behavioral treatment of avoidant/restrictive food intake disorder. *Current Opinion in Psychiatry*, 31(6), 425–430. <https://doi.org/10.1097/yco.0000000000000454>
- View of Cognitive Behavior Therapy (CBT) Effectiveness in Overcoming Binge Eating Disorder (BED) in Adolescents| *International Journal of Social Service and Research (IJSSR)*. (n.d.). <https://ijssr.ridwaninstitute.co.id/index.php/ijssr/article/view/159/280>
- Walenda, A., Kostecka, B., Santangelo, P. J., & Kucharska, K. (2021). Examining emotion regulation in binge-eating disorder. *Borderline Personality Disorder and Emotion Dysregulation*, 8(1). <https://doi.org/10.1186/s40479-021-00166-6>
- Wang, S. V., Lydecker, J. A., & Grilo, C. M. (2017). Rumination in Patients with Binge-Eating Disorder and Obesity: Associations with Eating-Disorder Psychopathology and Weight-bias Internalization. *European Eating Disorders Review*, 25(2), 98–103. <https://doi.org/10.1002/erv.2499>
- Yuan, S., Wu, H., Wu, Y., Xu, H., Yu, J., Zhong, Y., Zhang, N., Li, J., Xu, Q., & Wang, C. (2022). Neural Effects of Cognitive Behavioral Therapy in Psychiatric Disorders: A Systematic Review and Activation Likelihood Estimation Meta-Analysis. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.853804>