

UNDERSTANDING STRESS AND TRAUMA-DRIVEN EMOTION DYSREGULATION TO IMPROVE PREVENTION AND TREATMENT OF BINGE BEHAVIOR

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Abstract: Compulsive behaviors—including binge eating and excessive alcohol consumption are complex in nature and are normally associated with traumatic experiences, stress exposure and constant emotional dysregulation. A growing body of research demonstrates that stress and trauma significantly increase vulnerability to these behaviors, primarily due to their impact on emotional regulation systems. This literature review incorporates theoretical models, neurobiological mechanisms, epidemiology, psychological mediators (particularly emotional dysregulation) along with evidence-based approaches in order to prevention and treatment. Researcher describes a rigorous literature search and selection strategy and summarizes the outcomes of clinical, intervention and neuroimaging studies.

It concludes with recommendations for integrating trauma-informed and emotion-regulation-focused strategies into clinical practice and public health interventions.

Index terms: compulsive behavior, neurobiological mechanism, clinical, neuroimaging, emotional dysregulation

1. Introduction

Binge eating behavior (e.g., binge eating disorder, excessive alcohol consumption) is distinguished by episodes of consuming abnormally large amounts of food or alcohol over a short duration, often followed by an instinct of loss of control. Exposure to trauma and stress are frequent antecedents of these behaviors; however, the mechanism linking trauma to binge eating is complex and appears to primarily involve disruptions in emotional regulation and stress response systems (Munsch et al. 2012).

2. Research methodology

2.1. Review type and objectives

This review is a narrative systematic review of the literature, using structured search methods and transparent selection. The objectives of the study are: (1) review the empirical data on the association between stress and emotional dysregulation as well as bulimic behaviors; (2) review the neurobiological mechanisms that is linked with the stress/trauma and bulimic behaviors; (3) review the intermediaries studies that target the emotional dysregulation in bulimic behaviors; and lastly (4) identify the gaps in literature review.

2.2. Databases searched

In this study researcher searched the clinical, neuroscientific, and interventional literature in the emerald, PubMed/MEDLINE, PsycINFO, JSTOR, Web of Science, Scopus, and Google Scholar. (ScienceDirect, Wiley, MDPI).

2.3. Search strategy

The search terms used in this study are: stress OR trauma, emotional regulation OR emotional dysregulation, and binge eating disorder OR binge drinking OR binge drinking behaviors OR bulimia.

2.4. Screening and data extraction

Researcher examined the titles and abstracts for relevance, after that the relevant full texts were explored in detail and their data extracted in a standardized format which includes the study design, sample size, measures of the study and findings of the study.

3. Epidemiology and clinical associations

3.1. Stress or trauma and pervasiveness of binge behaviors

It was found from the literature that a number of epidemiological and clinical studies shows a higher frequency of bulimic behaviors in individuals who have experienced stress or trauma. Trauma is associated with an enhanced behavior of bulimic and alcohol-related episodes. Mechanistic research suggests that trauma does not act solely through the diagnostic criteria for PTSD; disturbances in self-organization (identity, interpersonal functioning, emotional regulation) and maladaptive affective states (shame, boredom) largely explain this association .

3.2. Emotion dysregulation as a proximal mechanism

Emotional dysregulation—difficulty modulating the intensity and duration of affective states, a limited repertoire of adaptive regulation strategies, and a propensity for experiential avoidance—consistently appears as a direct mediator between trauma and bulimic behaviors (Cassin et al. 2005). Studies show that individuals with greater difficulties in emotional regulation are more likely to resort to binge eating to escape their emotions or alleviate negative affect (Grilo et al. 2009). The emotional regulation tools targeted by dialectical behavior therapy (DBT) are correlated with a reduction in bulimic behaviors when modified during treatment (Cyders and & Smith, 2008).

3.3. Other psychological mediators: shame, impulsivity, and avoidance

Shame and self-inflicted negative emotions following interpersonal trauma frequently trigger bulimic episodes. Impulsivity along with attentional control deficits are often correlated with post-traumatic stress disorder (PTSD)

and therefore promote rapid and unplanned consumption of food or alcohol, mainly in stressful situations. Avoidance strategies perpetuate bulimic episodes by preventing the processing of trauma-related emotions .

4. Neurobiological and psychophysiological mechanisms

4.1. Reward circuitry and stress modulation

Neuroimaging studies indicate that functional and structural alterations exist within the reward circuits in individuals having binge eating disorder (Hildebrandt et al. 2010). Stress or trauma can disturb the balance between goal-oriented and habitual reward processes, and therefore, increase the stimulus-triggered food intake behavior and decrease the sensitivity to satiety indications (Schienle et al. 2009).

4.2. Limbic-prefrontal dysconnectivity and emotion regulation

Trauma-related amygdala hyperreactivity when coupled with prefrontal cortex hypoactivity (dorsolateral and ventromedial prefrontal cortex), aids a model in which stress or trauma raises emotional reactivity while reducing top-down regulatory capacity that can lead to maladaptive behaviors like binge eating (Munsch et al. 2012). Stress-induced modulation of the insula (interoceptive signals) can also disturb the perception of hunger and satiety and increase stimulus-triggered eating (Brockmeyer et al. 2014).

4.3. Stress physiology: HPA axis and allostatic load

Chronic stress and trauma change the working of the hypothalamic-pituitary-adrenal (HPA) axis along with the activation of the sympathetic nervous system; these systems interact with the reward circuit and appetite-regulating therefore, constituting a physiological pathway linking stress exposure to overeating behaviors (Aloi et al. 2017 & Appelhans, 2009).

5. Treatment and prevention: evidence and mechanisms

5.1. Cognitive-behavioural therapy (CBT) and enhanced CBT

Cognitive behavioral therapy (CBT) is one of the first-line psychotherapy for eating disorders that focussed on the dysfunctional cognitions, behavioral experiences, and the regularization of eating habits. However, systematic review indicates that CBT has moderate effectiveness in reducing the binge-eating episodes. Furthermore, the explicit behavioral components of CBT (regulating eating habits) appear crucial, but still CBT has traditionally placed less emphasis on trauma treatment (Stice, 2001).

5.2. Dialectical Behaviour Therapy (DBT) and DBT-informed interventions

Dialectical behavior therapy (DBT) targets emotional dysregulation by developing skills like distress tolerance, emotional regulation, mindfulness and interpersonal efficacy. Randomized as well as non-randomized

experiments suggest that DBT reduces the occurrence of binge eating episodes and improves emotional regulation (Tanofsky-Kraff et al.1997).

5.3. Emotion-focused therapies and trauma-informed approaches

Emotion-focused therapy (EFT) and its trauma-informed adaptations aim to help patients process the underlying affective states and traumatic memories that enhance the binge-eating behavior (Whiteside and Lynam, 2001). Initial trials indicate that EFT can decrease the occurrence of these behaviors by improving access to positive emotions and decreasing experiential avoidance.

5.5. Prevention strategies

Aim of the prevention efforts is to decrease the early exposure to stress/trauma in order to strengthen the resilience and emotional regulation skills in the individuals and to provide psychoeducation for stress management. Furthermore, school-based emotional regulation programs and early trauma screening are promising but need some more rigorous clinical trials

6. Gaps, limitations, and future research directions

A large number of studies are cross-sectional. Longitudinal studies are needed in order to establish the chronology, means does stress/trauma proceed emotional dysregulation or not? Also, randomized controlled trials that manipulate emotional regulation would help establish causal mechanisms. By combining neuroimaging, ecological moment assessment and psychophysiology identify the subgroups that may benefit from personalized treatments. However, a number of studies involve prominently female for samples. More diverse sample can be collected for the study.

7. Clinical implications and recommendations

1. in bulimic behavior services, screening for a history of trauma and difficulties with emotional regulation should be a routine process .
2. By integrating emotional regulation training with the standard CBT protocols for bulimic behavior, particularly in cases of a history of trauma or high emotional lability can be helpful.
4. By using a multimodal assessment (self-report questionnaire, EMA, physiological markers) for the identification of emotional triggers and to guide individualized treatment planning can also be helpful.

8. Conclusion

The literature summarises the review in which stress and trauma increase susceptibility to bulimic episodes, specifically via emotional dysregulation. Neurobiological changes (reward circuits, limbic-prefrontal networks, and the HPA axis) underlie these behavioral patterns. Interventions like emotional regulation that include

dialectical behavior therapy (DBT) and emotion-focused therapies also show promising results, and also trauma-informed adaptations are tend to improve their effectiveness in individuals who have experienced trauma. Furthermore, future research should prioritize longitudinal mechanistic studies, multimodal biomarkers, and trials comparing different sequencing and integration strategies for trauma treatment and the development of emotional regulation skills.

References

1. Aloï, M., Rania, M., Caroleo, M., De Fazio, P., & Segura-García, C. (2017). Social cognition and emotional functioning in binge eating disorder: A comparison study. *European Eating Disorders Review*, 25(3), 191–198.
2. American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.
3. Appelhans, B. M. (2009). Neurobehavioral inhibition of reward-driven feeding: Implications for dieting and obesity. *Obesity*, 17(4), 640–647.
4. Brockmeyer, T., Skunde, M., Wu, M., Woehning, A., & Friederich, H.-C. (2014). Difficulties in emotion regulation across the spectrum of eating disorders. *Comprehensive Psychiatry*, 55(3), 565–571.
5. Cassin, S. E., & von Ranson, K. M. (2005). Personality and eating disorders: A decade in review. *Clinical Psychology Review*, 25(7), 895–916.
6. Cyders, M. A., & Smith, G. T. (2008). Emotion-based dispositions to rash action: Positive and negative urgency. *Psychological Bulletin*, 134(6), 807–828.
7. Grilo, C. M., White, M. A., & Masheb, R. M. (2009). DSM-IV psychiatric disorder comorbidity and its correlates in binge eating disorder. *International Journal of Eating Disorders*, 42(3), 228–234.
8. Hildebrandt, T., Alfano, L., & Tricamo, M. (2010). Empirical support for a transdiagnostic model of eating disorders. *Eating Behaviors*, 11(2), 87–93.
9. Kessler, R. C., Berglund, P. A., Chiu, W. T., Deitz, A. C., Hudson, J. I., Shahly, V., ... & Xavier, M. (2013). The prevalence and correlates of binge eating disorder. *Biological Psychiatry*, 73(9), 904–914.
10. Munsch, S., Meyer, A. H., Quartier, V., & Wilhelm, F. H. (2012). Binge eating in binge eating disorder: A breakdown of emotion regulatory processes? *Psychiatry Research*, 195(3), 118–124.
11. Schienle, A., Schäfer, A., Hermann, A., & Vaitl, D. (2009). Binge-eating disorder: Reward sensitivity and brain activation to images of food. *Biological Psychiatry*, 65(8), 654–661.
12. Stice, E. (2001). A prospective test of the dual-pathway model of bulimic pathology. *Journal of Abnormal Psychology*, 110(1), 124–135.
13. Tanofsky-Kraff, M., Wilfley, D. E., Spurrell, E. B., Welch, R. R., & Brownell, K. D. (1997). Comorbid binge eating disorder and obesity. *Psychiatric Clinics of North America*, 20(4), 921–943.
14. Whiteside, S. P., & Lynam, D. R. (2001). The Five-Factor Model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences*, 30(4), 669–689.