

EMOTIONAL DYSREGULATION IN EATING DISORDERS: A COMPARATIVE ANALYSIS OF AFFECTIVE PROCESSES IN ANOREXIA, BULIMIA AND BINGE EATING

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Case Report

Received: 01 Aug 2025 | Accepted: 01 Sep 2025 | Published: 27 Nov 2025

Abstract. Eating disorders (EDs) significantly affect physical and emotional health. Initial emotional dysregulation is associated with less progress in treatment, whereas advances in emotional regulation (ER) lead to reduced symptoms. This study compared the emotional specificities between anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED) to develop more effective therapeutic interventions. Through an exploratory and descriptive review of 13 scientific articles (2019-2024) and 3 books, patterns of emotional dysregulation and strategies for ED were analyzed. In AN there is less use of adaptive ER strategies, associated with low body weight and high levels of alexithymia. In BN, there is a direct relationship between anxiety, stress, and compulsion-purging behaviors, with the use of maladaptive strategies. In BED, compulsion acts as a maladaptive strategy to relieve negative emotions, especially guilt. It is concluded that emotional dysregulation affects AN, BN, and BED in specific ways. Interventions such as CBT, DBT, and emotion regulation training reduced symptoms and compulsions. Adaptive strategies, such as mindfulness and self-compassion, improved emotional management and decreased self-criticism, promoting effective therapeutic outcomes.

Keywords — Anorexia nervosa. Bulimia nervosa. Emotions. Emotional regulation. Binge-eating disorder.

1 Introduction

Eating disorders (EDs) are psychiatric conditions that significantly impact the physical, psychological, emotional, and social health of individuals. The main types of ED include Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED) [1]. It is common for people with these disorders to have difficulty identifying, understanding, and healthily managing their emotions [2]. High levels of emotional dysregulation are often associated with the greatest challenges for treating EDS. On the other hand, when emotional regulation (ER) skills are developed, individuals become more engaged in interventions, resulting in a reduction in dysfunctional eating behaviors used as an emotional coping mechanism [3].

These disorders involve dysfunctional patterns of food intake, compulsive behaviors, and a severe distortion of self-image, as well as being associated with high mortality rates and health complications, such as obesity and the consequences of starvation. The prevalence of EDs is higher in women, varying according to the type of disorder, and they are distinguished by differences in course, outcome, and therapeutic approach [1].

AN is characterized by severe calorie restriction, intense fear of gaining weight, and a distorted perception of one's own body, with two subtypes: Anorexia Nervosa - Restrictive Type (AN-R), characterized by food restriction, and Anorexia Nervosa - Compulsive-Purging Type (AN-CP), characterized by food intake behavior followed by compensatory behavior. The severity of AN is assessed by the Body Mass Index (BMI), and emotional dysregulation is greater in individuals with a lower BMI, which contributes to an increase in the number of suicides. BN and BED share episodes of binge eating, but differ in compensatory behaviors: while BN involves purging after binge episodes, BED does not show these behaviors [1].

Although BN, BED and AN are distinct disorders, they share several common behaviors, psychological, and emotional aspects. Understanding the differences and equivalences is fundamental for the diagnosis and appropriate treatment of each disorder. The emotional and cognitive aspects are presented in different ways in each type of EDs. In AN, irritability, mood instability, concentration difficulties, depression, anxiety, and sometimes obsessive behavior are common. In BN, the main difference with AN is that repeated episodes of binge eating, followed by purging, interrupt attempts to limit food intake, keeping individuals with a BMI within the normal range and reducing the psychosocial and physical effects of low weight. However, depressive and anxious aspects are higher in BN and BED. Substance use and self-injury are present in BN, AN-CP and BED. These groups are often also diagnosed with borderline personality disorder [4].

Leahy [2] points out that the difficulty in managing and responding appropriately to emotions is a fundamental aspect of eating disorders. This perspective is corroborated by recent reviews of the literature, which indicate that inadequate management of emotions not only contributes to the development but also to the maintenance of these disorders. Furthermore, studies show that therapeutic interventions focused on emotion regulation (ER) have shown significant clinical efficacy [5–7].

The understanding of these conditions is further deepened when integrating Leahy's [2] concepts of ER with Barlow's [4] vision, which affirms the overvaluation of body image as a central aspect in BN, AN, and, in more than 50% of cases in TCA. Leahy [2] adds that emotional dysregulation aggravates these dysfunctional behaviors, since the absence of

adaptive emotional regulation skills is at the root of both compulsive behaviors and rigid control of food intake.

Since emotions reflect individual needs and values, the lack of skills to understand, accept, and solve problems, as well as the inability to recognize what emotions signal, leads to the frequent use of maladaptive strategies such as suppression, avoidance, and rumination. Although these actions can temporarily control the emotional effects, promoting relief, in the long term, they tend to cause a lot of damage, amplifying the deregulation of emotions, intensifying them, or suppressing them inappropriately. The difficulty in identifying, differentiating, and associating emotions with specific events, called alexithymia, is related to a number of disorders, including AD [2]. In AN, nutritional deficits are reflected in high levels of alexithymia. Low body weight and starvation not only affect the physical state but also significantly impact brain functions, particularly in the areas of the brain responsible for emotional regulation [7], contributing to the individual losing social motivation – becoming more isolated [4].

Four systematic reviews evaluated emotional dysregulation and possible treatment interventions in people with EDS, highlighting different aspects and populations. Henderson *et al.* [5] carried out a qualitative meta-synthesis to discuss the emotional development of ASDs. Puttevils *et al.* [7] explored the differences in adaptive and maladaptive ER strategies between AN and BN. Wayda Zalewska *et al.* [6] investigated the dynamics and regulation of emotions in AN through ecological momentary assessment (EMA) studies. Rozakou-Soumalia, Dârvari and Sjögren [8] investigated the effects of Dialectical Behavior Therapy (DBT) on the emotional regulation of ADs, compared to control groups in active therapy or on a waiting list.

These reviews show important advances; however, none of them directly compared the differences in emotional manifestations between the main eating disorders in a single study. Therefore, this literature review aims to fill this gap by carrying out a comparative analysis and seeking to answer the research question: “What are the emotional specificities that differentiate the main groups of eating disorders: anorexia nervosa, bulimia nervosa and binge eating disorder, and how can these specificities contribute to the development of more individualized and effective therapeutic interventions?”

2 Case Report

Exploratory and descriptive literature review: The study aims to search for documents available in databases to identify patterns of emotional dysregulation in the main eating disorders and possible interventions.

The sample for this literature review consisted of 13 scientific articles and 3 books, which explored the relationship between emotional dysregulation and eating disorders, specifically anorexia nervosa, bulimia nervosa, and binge eating. The articles were chosen for their relevance and contribution to understanding the emotional dynamics that affect individuals with these eating disorders. The studies selected include: systematic reviews, randomized clinical trials, observational, cohort, and experimental studies.

Inclusion criteria: studies with free access to the full text, which aim to investigate the relationship between emotional dysregulation and one of the three main eating disorders: anorexia nervosa, bulimia nervosa, and binge eating disorder.

Exclusion criteria: all studies that do not report specific empirical data on the interaction between emotional regulation and the main eating disorders: anorexia nervosa, bulimia nervosa, and binge eating, as well as those that do not detail the effects or correlations between emotional regulation strategies and the clinical manifestations of these disorders.

For the bibliographic review in the context of the course completion work, a search was carried out in databases covering the period from 2019/05/02 to 2024/07/18. The search terms were used based on the Medical Subject Headings (MeSH): anorexia nervosa; bulimia nervosa; binge eating; emotions; emotional regulation, combined with the Boolean operators AND or OR.

Parts of this text were revised and organized with the help of the ChatGPT language model (OpenAI), used as a tool to support textual clarity and cohesion. The translation into English was carried out using the tools DeepL and Grammarly. The authors take full responsibility for the content.

A thorough reading of the texts was carried out in order to identify and extract patterns related to the themes, and a narrative was developed integrating the results of the different studies, discussing the relationships and contributions to the understanding of emotions in each group studied. In addition to identifying themes and developing an integrative narrative, an analysis was carried out of the treatment strategies described in the studies as effective for managing emotional dysregulation in patients with eating disorders.

3 Discussion

The studies analyzed were of high methodological quality and contributed significantly to achieving the objectives proposed by this review: identifying the emotional specificities that differentiate the main groups of eating disorders, as well as understanding how these specificities can contribute to the development of more individualized and effective therapeutic interventions.

After searching the PubMed and Cochrane Library databases and applying the established inclusion and exclusion criteria, 13 articles were selected and included in this review. In addition, three books of theoretical relevance were incorporated to support the fundamental concepts: (I) Diagnostic and Statistical Manual of Mental Disorders 5 (revised text), (II) Clinical Manual of Psychological Disorders: Step-by-Step Treatment (sixth edition), and (III) Emotional Regulation in Psychotherapy: A Therapist's Guide.

The selected articles include four systematic reviews, two randomized clinical trials, three cross-sectional observational studies, a one-year longitudinal study, an experimental study, a cohort study, and a momentary ecological evaluation study. All the studies were published between 2019 and 2024, except the 2013 book Emotional Regulation in Psychotherapy.

The set of studies included approximately 8,775 participants, of which around 7,000 were included in the systematic reviews. Of this total, 87% were female. The most frequent diagnosis among the participants was AN, followed by BN and TCA, which were also commonly investigated. Emotional dysregulation and deficits in adaptive

emotion regulation (ER) strategies were identified as important factors in these conditions, influencing both the frequency and intensity of participants' dysfunctional behaviors in all studies [5, 7, 8].

Table 1: Summary of studies on emotional regulation in eating disorders

| Authors | Objectives | Results | Type of Study | Participants |
|-------------------------------------|--|--|--|-------------------------|
| Henderson <i>et al.</i> [5] | Understanding emotions in eating disorders in development and maintenance. | Negative emotional environments in childhood hinder the adaptive expression of emotions, leading to disordered eating behaviors as maladaptive coping. | Systematic Review and Qualitative Meta-Synthesis | 203 with AN, BN and BED |
| Benzerouk <i>et al.</i> [9] | To identify factors related to BED in obese people seeking bariatric surgery. | Patients with BED show greater emotional dysregulation and impulsivity, associated with emotional eating and bulimic symptoms due to limited strategies. | Cross-sectional observational study | 121 with BED |
| Hazzard <i>et al.</i> [10] | To examine predictors of durability of psychotherapy for BED focusing on ER. | Reductions in negative self-directed style and emotional dysregulation reduced binge eating and improved depressive and anxiety symptoms after six months. | Randomized Clinical Trial | 112 with BED |
| Hessler-Kaufmann <i>et al.</i> [11] | To investigate the immediate effects of ER strategies in patients with BN. | Mindfulness and self-compassion outperformed cognitive restructuring in improving emotional and eating symptoms, increasing body acceptance and self-esteem. | Experimental Study | 48 with BN |
| Schaefer <i>et al.</i> [12] | Examining patterns of affect in binge eating episodes in BED. | An increase in negative affect and guilt before compulsions and a decrease after compulsions indicate a maladaptive strategy to relieve negative emotions. | Ecological Momentary Evaluation Study | 112 with BED |
| Meneguzzo <i>et al.</i> [13] | Evaluating the effects of intensive treatment on ER in eating disorders. | After 60 days of treatment, emotional regulation and alexithymia improved, but remained significant in many patients. | Intervention Study (Co-hort) | 67 with AN, BN and BED |
| Puttevils <i>et al.</i> [7] | To investigate differences in ER strategies between AN, BN and healthy controls. | Patients with AN used fewer adaptive emotion regulation strategies than BN, both with greater difficulties than controls. | Systematic Review and Meta-analysis | 5,868 with AN and BN |
| Rozakou-Soumalia <i>et al.</i> [8] | To investigate the effect of DBT on emotional dysregulation in eating disorders. | DBT improved general emotional dysregulation in BED and BN, reducing depressive symptoms and BMI, but not specific emotional regulation related to food. | Systematic Review and Meta-analysis | 669 with BED and BN |
| Berking <i>et al.</i> [14] | Evaluating ER training in patients with BED. | Emotional regulation training significantly reduced binge eating and achieved 34.4% remission, compared to 7.5% in the control group. | Randomized Controlled Clinical Trial | 40 with BED |

Continued on the next page

Table 1 (continued)

| Authors | Objectives | Results | Type of Study | Participants |
|----------------------------------|---|---|-------------------------------------|--|
| Cassoli <i>et al.</i> [3] | Evaluate the interaction between emotional dysregulation and childhood trauma in AN treatment. | Emotional dysregulation predicted lower treatment efficacy in AN and mediated childhood trauma, with less improvement in psychopathology after one year. | 1-Year Study | Longitudinal 120 with AN; 81 controls |
| Mariani <i>et al.</i> [15] | Analyzing emotional dysregulation and linguistic patterns in AN narratives. | AN showed greater emotional dysregulation and specific linguistic patterns, indicating difficulties in symbolizing and expressing emotions. | Comparative Observational Study | 29 with AN; 36 controls |
| Wayda-Zalewska <i>et al.</i> [6] | Review research on EMA to understand emotional dynamics in AN. | AN displays altered emotional dynamics and maladaptive strategies such as suppression, associated with severe symptoms, highlighting interventions in emotional regulation. | Systematic Review | not informed |
| Azzi <i>et al.</i> [16] | To examine the indirect effect of difficulties in ER on the relationship between BN and mental health problems. | Difficulties in emotional management mediated anxiety, stress and depression with BN severity, directly increasing the severity of BN. | Cross-sectional observational study | 1,175 with BN |

Source: Prepared by the author (2025).

When exploring the differences between AN AND BN in the use of adaptive and maladaptive strategies Puttevils *et al.* [7] found studies that did not identify significant differences in the use of strategies such as problem solving, acceptance and cognitive reappraisal between the groups, other studies have found that patients with AN have additional difficulty in the use of acceptance and reappraisal strategies. This difference may be related to the factors of low body weight, starvation and high levels of alexithymia. In addition, it has been observed that these patients tend to use more maladaptive strategies such as rumination, avoidance, and suppression compared to individuals without eating disorders, which is associated with more severe symptoms and a higher risk of self-injury and suicide attempts.

Wayda-Zalewska *et al.* [6] identified that individuals with AN have altered emotional dynamics, with high instability and high negative affect. Emotional lability is associated with restrictive behaviors, while strategies such as excessive exercise act as a temporary ER. In addition, high levels of alexithymia and difficulties in emotional identification in their social contexts contribute to social isolation and ongoing emotional challenges in these patients. Studies in groups with BN have observed similar emotional conditions, in which increased anxiety and stress were directly related to increased compulsion-purging behaviors, leading them to experience a cycle of emotional intolerance and maladaptive ER strategies [16]. In BED, the lack of healthy emotion regulation strategies, such as acceptance and reappraisal, makes these individuals more vulnerable to binge episodes, and a cycle of ineffective strategies leaves the individual trapped in thought and behavior patterns that increase the likelihood of binge eating episodes [9].

Binge eating seems to act as a maladaptive emotional regulation strategy used to relieve negative emotional states. The reduction in negative affect and guilt after episodes suggests that this behavior is negatively reinforced, increasing the chance of new episodes in response to negative emotions. Guilt stands out as an essential factor in this dynamic:

its increase before the episodes and reduction after the compulsion indicate that it can function both as a precursor and as a key reinforcer of behavior in individuals with BED. In contrast, emotions such as fear, hostility, and sadness remained stable before and after episodes, suggesting that they may not play a significant and immediate role in precipitating or maintaining binge eating in BED [12].

Henderson *et al.* [5] showed that the inability to differentiate, identify, and deal with negative emotions, such as anger, sadness, guilt, worry, loneliness, shame, depression, and frustration, brings confusing feelings, reflecting in increased alexithymia. In addition, this study points out that people with eating disorders grow up in poor emotional environments, marked by a lack of expression or an excess of negative emotions, contributing to individuals using their disorders as maladaptive strategies for dealing with intense emotions. Mariani *et al.* [15] reinforce these findings by describing specific linguistic patterns in AN-R patients, suggesting that metabolic impairment can affect the linguistic ability to transform internal experiences into words that express complex emotions. These patients use a more concrete and literal language, linked to the body and psychological suffering, which reveals how AN can impair cognitive processes, making it difficult to elaborate and express emotions. Interventions focused on autobiographical narratives and directly addressing the identification and expression of emotions in patients with AN can help develop the ability to recognize affective states, improving emotional regulation and the clinical picture of AD [13, 15].

Meneguzzo *et al.* [13] pointed out that specialized multidisciplinary interventions, such as Cognitive-Behavioral Therapy (CBT), with psychological techniques adapted to the specific needs of each case, can significantly improve emotional regulation, dissociation, and alexithymia. Even so, the improvement in alexithymia occurred only in cases with very high symptomatology and remained clinically significant in several participants after treatment, suggesting that alexithymia may be a stable personality trait and should be investigated across the spectrum of ADs. Another study, which also looked at multidisciplinary interventions including CBT, revealed significant improvements in Body Mass Index (BMI) in patients with AN. However, high levels of emotional dysregulation proved challenging for CBT and could make it difficult to continue treatment [3]. Another study showed that the use of Dialectical Behavioral Therapy (DBT) can be an effective approach to emotional regulation in general, in which cases a reduction in depressive symptoms was observed in patients with BED and BN, as well as helping to reduce BMI, especially in cases of BED. However, DBT did not show significant improvements in specific emotional regulation related to eating behaviors, indicating the need for complementary approaches to address this aspect more directly [8].

A previous study indicated that during treatment with CBT adapted for BED, an improvement was observed in the ability to deal with emotions and a reduction in the negative self-directed style, characterized by self-criticism, which contributes to maintaining treatment results in the long term. Among these factors, changes in negative self-directed style stood out as the main predictor of success in reducing binge eating episodes, while emotional regulation capacity was an important predictor of the durability of various aspects of treatment. Thus, the study suggests that it is important to work on these specific areas to improve the durability of results in individuals with binge eating [10].

Berking *et al.* [14] showed that a transdiagnostic group-focused ER skills training incorporating contextual approaches such as integrated CBT, DBT, emotion-focused and compassion-focused therapy, as well as mindfulness-based interventions, proved effective in

reducing binge eating episodes, general eating psychopathology and symptoms of depression in individuals with BED, when compared to a wait-list control group. Based on this model, seven ER skills were developed, each designed to help the individual disengage from processes that maintain negative affective states. These skills include: muscle and respiratory relaxation to relieve physical tension; perception and description of one's feelings without judgment; acceptance and tolerance in the face of unwanted emotions; compassionate self-support when confronting these feelings; analysis of the factors that precede negative emotions; and active modification of personal emotional responses. To strengthen these skills, patients learn a specific set of exercises and are encouraged to dedicate themselves to these skills daily.

The results of the study also indicated that improved ER skills partially mediated the reduction of BED symptoms, suggesting that deficits in ER play a significant role in the maintenance of the disorder. The efficacy of ER training was shown to be close to the remission rates and effect sizes observed in standard treatments for BED, such as specific CBT-based therapies, suggesting that ER training may be a viable alternative, especially in a group format. However, future research should compare ER training with other treatments to validate its efficacy and assess its applicability to other mental health conditions [14].

Contributing to these findings, Hessler-Kaufmann *et al.* [11] showed that contextual strategies, especially self-compassion, were highly effective in improving emotional regulation and other aspects related to emotional well-being, and were particularly beneficial in the treatment of BN. Self-compassion had a positive impact on several emotional variables, standing out as the most effective strategy, followed by mindfulness, which also showed significant benefits. In comparison, cognitive restructuring was relatively less effective, which can be explained by the difficulty patients have in applying it during intense emotional states, as well as the fact that it requires more time and psychoeducation on the cognitive model to be fully assimilated. In this way, the results suggest that incorporating strategies such as self-compassion and mindfulness into clinical treatments can be advantageous, as they are easy to apply in everyday life and promote greater autonomy for patients in managing their emotions, helping to control BN symptoms.

4 Conclusion

This study aimed to identify the emotional specificities that differentiate the main groups of eating disorders: AN, BN, and BED, and to understand how these particularities can contribute to the development of more individualized and effective therapeutic interventions.

The literature review revealed that emotional dysregulation is a common factor in all three disorders, but manifests itself in different ways in each one. In AN, patients use significantly fewer adaptive emotion regulation strategies, such as cognitive reappraisal and acceptance. This deficiency is possibly related to factors such as low body weight, starvation, and high levels of alexithymia, which make it difficult to identify and express emotions. The inability to recognize emotional signals in the social context contributes to isolation and the maintenance of the disorder.

In BN, there is a direct relationship between increased anxiety, stress, and the

frequency of compulsion-purging behaviors. Individuals tend to experience a cycle of emotional intolerance, using maladaptive emotional regulation strategies such as suppression and rumination, which perpetuates the symptoms of the disorder. The difficulty in dealing with intense negative emotions leads to the use of disordered eating behaviors as a form of temporary relief.

In BED, binge eating functions as a maladaptive emotional regulation strategy to relieve negative emotional states, especially guilt. The lack of healthy emotion regulation strategies makes individuals more vulnerable to binge episodes, reinforcing patterns of thoughts and behaviors that increase the likelihood of relapse.

Understanding these emotional specificities is fundamental to the development of effective and individualized therapeutic interventions. Interventions that focus on developing emotional regulation skills have shown promise. In AN, approaches that include adapted Cognitive-Behavioral Therapy (CBT), with an emphasis on identifying and expressing emotions, can help improve emotional regulation and reduce alexithymia. In BN and BED, strategies such as self-compassion and mindfulness are effective in immediately improving emotional outcomes and reducing eating disorder-related symptoms.

In addition, group training in emotional regulation skills, with contextual and transdiagnostic approaches, is effective in reducing binge eating episodes and improving the general psychopathology of individuals with BED. These interventions not only address the specific symptoms of the eating disorder, but also promote emotional well-being and the ability to deal with negative emotions adaptively.

In short, the emotional specificities identified between AN, BN, and BED highlight the need for personalized therapeutic interventions that consider the particularities of emotions in each disorder. Approaches focused on improving emotion regulation skills have the potential to increase the effectiveness of treatments and contribute to the long-term recovery of affected individuals. Future studies should continue to investigate these differences and develop interventions that directly address the specific emotional needs of each group, with the aim of improving therapeutic results and patients' quality of life.

This review highlights important clinical applications for the treatment of eating disorders such as AN, BN, and BED, by showing that interventions focused on the emotional specificities of each disorder can make therapeutic results more efficient.

ER appears as a central focus, since deficits in this area have been identified as a significant factor in many aspects of EDs. Specific training in ER skills, especially in a group format, is effective in reducing binge eating episodes and depressive symptoms. In addition, they benefit patients with mood and anxiety comorbidities, improving the durability of results, and can be used as an alternative treatment.

In AN, CBT focuses on CR strategies and cognitive re-evaluation is recommended, as it directly addresses rigid thought patterns and distorted body perceptions. For patients with high levels of alexithymia, the incorporation of self-compassion and mindfulness practices can facilitate the recognition and expression of emotions, enhancing the effectiveness of CBT.

In the case of BN, interventions that act on emotional intolerance and the use of maladaptive strategies are particularly relevant. DBT has proved useful in reducing the symptoms of compulsion and purging by developing emotional coping skills. In addition, self-compassion and mindfulness techniques can help patients achieve greater emotional

acceptance and autonomy.

The inclusion of self-compassion and mindfulness practices in interventions, especially in BN and BED, can promote a more balanced relationship with emotions and increase the ability to cope with them in everyday life. These approaches are easy to apply and accessible, helping to control symptoms by promoting patient autonomy in emotional management.

These clinical applications suggest that personalized interventions, which take into account the specific emotional characteristics of each disorder, are fundamental to improving therapeutic results and maintaining long-term gains.

The strengths of this review include the quality of the studies selected, which used standardized and validated instruments and measures, ensuring the reliability and validity of the results obtained. In addition, the methodological designs were appropriate to the proposed objectives, covering randomized clinical trials, longitudinal studies, and systematic reviews, which reinforces the robustness of the evidence found. The researchers demonstrated scientific rigor when discussing the limitations and clinical implications of their findings, allowing for a critical and informed interpretation of the results.

However, some common limitations were identified among the studies analyzed. The reliance on self-reports may have introduced social desirability, and predominantly female samples limit the generalization of the results to the male population, considering that eating disorders also affect men. Finally, the small sample sizes of some studies may have reduced statistical power, making it difficult to detect significant effects and extrapolate the findings to larger populations.

Data Availability

Data and materials are not applicable, as this is a single case report.

Ethics Approval

Informed consent was obtained from the patient for publication of the clinical information and images. The study followed the principles of the Declaration of Helsinki.

Funding

This work received no specific funding.

Supplementary Information

No supplementary files are available.

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