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Comparing the Effectiveness of Schema Therapy and Cognitive-Behavioral Therapy on the Regulation of Primary Emotions in Young Girls with Body Deformity Disorder

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A B S T R A C T

Purpose: The study aimed to compare the effectiveness of schema therapy and cognitive-behavioral therapy (CBT) on the regulation of primary emotions in young women with body dysmorphic disorder (BDD).

Methodology: This quasi-experimental study utilized a pretest-posttest design with a control group and a three-month follow-up. The participants were 51 women aged 25 to 35 years, diagnosed with BDD through clinical interviews based on DSM-5-TR criteria. They were randomly assigned to three groups: schema therapy, CBT, and control (17 participants each). The Difficulties in Emotion Regulation Scale (DERS) was administered at three stages: pretest, posttest, and follow-up. Data were analyzed using repeated measures ANOVA to evaluate the differences in emotion regulation across groups and time points.

Findings: The results showed that both schema therapy and CBT significantly improved emotion regulation compared to the control group. However, schema therapy demonstrated superior effectiveness, with significant and sustained improvements from pretest to posttest and follow-up ($p < .05$). The interaction effect between group and time was significant ($F = 127.50$, $p = .001$, $\eta^2 = .842$), indicating that schema therapy had a more enduring impact on emotion regulation than CBT. In contrast, the CBT group's improvements, while significant, were less stable over time.

Conclusion: Schema therapy was found to be more effective than CBT in regulating primary emotions in young women with BDD, with sustained benefits observed three months post-intervention. These findings suggest that schema therapy offers a promising alternative to CBT for treating BDD, particularly in cases where deeper cognitive and emotional factors are at play.

Keywords: *Schema therapy, Cognitive-behavioral therapy, Body dysmorphic disorder, Emotion regulation, Psychological intervention.*

1. Introduction

Body dysmorphic disorder (BDD) is a severe mental health condition characterized by an obsessive focus on perceived flaws or defects in one's physical appearance, which are either minor or not observable to others. This preoccupation often leads to significant distress, impairment in social, occupational, and other areas of functioning, and can result in behaviors such as excessive grooming, mirror checking, or even seeking unnecessary cosmetic procedures (Björnsson et al., 2010; Caponnetto, 2024). BDD is closely linked to anxiety, depression, and other mental health disorders, making it a complex condition to treat effectively (Stein, Carey, & Warwick, 2006).

Historically, cognitive-behavioral therapy (CBT) has been the most widely researched and utilized treatment for BDD, showing considerable effectiveness in reducing symptoms by addressing maladaptive thoughts and behaviors (Geremia & Neziroglu, 2001; Prazeres et al., 2013). CBT focuses on identifying and challenging distorted cognitions, such as overemphasis on physical appearance and perfectionism, and encourages the development of healthier thought patterns and behaviors. The efficacy of CBT for BDD has been supported by numerous studies, including both individual therapy sessions and guided internet-based interventions (Drüge et al., 2022; Enander et al., 2016).

However, despite the effectiveness of CBT, there are limitations to this approach. Some patients with BDD do not respond adequately to CBT, and relapse rates can be high (Rosen et al., 1995). This has led to the exploration of alternative therapeutic approaches, such as schema therapy, which may offer additional benefits for individuals with more deeply rooted psychological issues, such as early maladaptive schemas (Aflakian, 2023; Aflakian et al., 2020; Sabet et al., 2016).

Schema therapy, developed by Young (Kellogg & Young, 2006), is an integrative approach that combines elements of cognitive-behavioral, experiential, interpersonal, and psychoanalytic therapies. It is particularly effective for individuals with chronic psychological disorders and personality disorders, where maladaptive schemas formed in early childhood continue to affect current functioning (Leppänen et al., 2014). These schemas are deeply ingrained patterns of thought and behavior that can perpetuate distress and maladaptive coping mechanisms, making them a critical target in the treatment of BDD (Botter et al., 2022).

The rationale for using schema therapy in treating BDD lies in its focus on these underlying schemas that may drive the obsessions and compulsions characteristic of the disorder. By addressing these schemas, schema therapy aims to achieve more profound and lasting changes in patients' cognitive and emotional regulation, potentially reducing the likelihood of relapse (Aflakian et al., 2020). This approach has been shown to be effective in other chronic conditions, such as obsessive-compulsive disorder (OCD), which shares some symptomatic overlap with BDD (Sij et al., 2018).

Recent research has begun to explore the comparative effectiveness of schema therapy versus CBT for BDD and other related disorders. A study by Aflakian (2023) highlighted that schema therapy might be more effective than CBT in reducing early maladaptive schemas and anxiety in patients with OCD, suggesting that similar benefits could be extended to BDD (Aflakian, 2023). Moreover, schema therapy's emphasis on emotion regulation and addressing unmet emotional needs provides a comprehensive framework for treating the complex emotional and cognitive patterns seen in BDD (Faßbinder et al., 2016).

In addition to its effectiveness in clinical settings, schema therapy has also been adapted for use in various contexts, such as in group therapy for eating disorders (Calvert et al., 2018) and in the treatment of body image concerns associated with chronic skin conditions (Affleck et al., 2013). These adaptations underscore the versatility of schema therapy and its potential applicability to BDD, where body image disturbances are central to the disorder.

The integration of schema therapy with other therapeutic modalities has also shown promise. For instance, Zand (2023) explored the effectiveness of a transdiagnostic educational package that combined schema therapy, CBT, and meaning therapy, finding significant improvements in psychological well-being and reductions in marital burnout among women experiencing emotional divorce (Zand, 2023). Such integrative approaches could be particularly beneficial for BDD patients who present with comorbid conditions, allowing for a more tailored and holistic treatment approach (Caponnetto, 2024).

Despite the growing body of evidence supporting schema therapy, there is a need for more direct comparisons between schema therapy and CBT in the treatment of BDD. While CBT remains the gold standard, especially for its ability to provide immediate relief from symptoms, schema therapy may offer more sustainable long-term benefits by addressing

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the deeper cognitive and emotional structures that contribute to the persistence of BDD symptoms (Barooti, 2024).

Moreover, the potential for combining schema therapy with emerging technological interventions, such as smartphone-based CBT applications, offers exciting new avenues for treatment. Bernstein (2024) highlighted the use of coaching in smartphone app-based CBT for BDD, emphasizing the importance of integrating traditional therapeutic techniques with modern technology to enhance accessibility and adherence to treatment. This integration could potentially be expanded to include schema therapy elements, further broadening the scope of treatment options for BDD (Bernstein, 2024).

Given the complexity of BDD and the varying degrees of response to different therapies, it is crucial to continue exploring and refining therapeutic approaches to ensure that patients receive the most effective care possible. Studies like those conducted by Ariska (2023) and Peng, Liu, Mi, & Shi (2023) on the effects of social cognitive therapy and the influence of social media on BDD, respectively, underscore the importance of understanding the broader social and psychological factors that contribute to the disorder. Integrating these insights with schema therapy could provide a more comprehensive treatment framework that addresses both individual psychological factors and the external influences that exacerbate BDD symptoms. In conclusion, while CBT has been the cornerstone of BDD treatment, schema therapy offers a promising alternative, particularly for individuals with deeply entrenched maladaptive schemas. The current study aimed to compare the effectiveness of schema therapy and cognitive-behavioral therapy (CBT) on the regulation of primary emotions in young women with body dysmorphic disorder (BDD).

2. Methods and Materials

2.1. Study Design and Participants

This study is applied in terms of its objective and is a quasi-experimental research with a pretest-posttest design, including a control group and a three-month follow-up. The statistical population consisted of all female clients diagnosed with body dysmorphic disorder who visited counseling and psychological services centers in District 1 of Tehran. Considering potential dropout, 51 individuals were selected through purposive sampling based on inclusion criteria (females aged 25 to 35, having at least a high school diploma, and diagnosed with body dysmorphic disorder through a clinical interview based on DSM-5-TR) and exclusion criteria (receiving concurrent psychological treatments, taking psychiatric medications, undergoing cosmetic surgery during the study, missing more than two sessions, or having any other psychological disorder). The participants were then randomly assigned to two experimental groups and a control group.

To implement the study, three psychological centers in District 1 of Tehran were selected through convenience sampling, and announcements regarding the formation of sessions related to the research topic and initial registration conditions were communicated to potential participants. Eligible participants (based on inclusion and exclusion criteria) were selected as the sample group. The selected sample (51 individuals) was randomly assigned through a lottery to three groups of 17 participants each: Experimental Group 1 (17 participants), Experimental Group 2 (17 participants), and Control Group (17 participants). After explaining the research objectives, emphasizing the importance of psychological treatments, and ensuring the confidentiality of personal information, the Difficulties in Emotion Regulation Scale was administered to all three groups as a pretest (T1). Experimental Group 1 then received schema therapy, Experimental Group 2 received cognitive-behavioral therapy, and the Control Group received no treatment. The interventions were conducted individually and face-to-face by the researcher in a psychological clinic located in District 1 of Tehran. After the treatments were completed in both experimental groups, the aforementioned questionnaires were administered again to all participants in the three groups as a posttest (T2). Finally, after three months, a follow-up test was conducted in all three groups (T3).

2.2. Measures

2.2.1. Emotion Regulation

The Difficulties in Emotion Regulation Scale (DERS) is a 36-item tool that measures individual deficiencies in emotion regulation across six domains on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always). The six domains include nonacceptance of negative emotions, difficulties in engaging in goal-directed behaviors under distress, impulse control difficulties under distress, limited access to effective emotion regulation strategies, lack of emotional awareness, and lack of emotional clarity. The total score for difficulties in emotion regulation is calculated by summing the scores of the six subscales. Higher scores on each subscale and the overall scale indicate greater

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difficulties in emotion regulation. The psychometric properties of the DERS, including internal consistency, test-retest reliability, and construct and predictive validity, have been confirmed in both clinical and non-clinical samples in international studies. The minimum score on this scale is 36, and the maximum is 180, with scores between 36 and 72 indicating a low level of difficulty in emotion regulation. Research by Besharat (2016) and Besharat and Bozazian (2014) demonstrated that the Persian version of the DERS could differentiate between clinical and non-clinical samples, indicating its discriminant validity. In these studies, Cronbach's alpha coefficients for the subscales ranged from .73 to .88 for nonacceptance of negative emotions, .72 to .89 for difficulties in engaging in goal-directed behaviors under distress, .75 to .90 for impulse control difficulties, .76 to .85 for limited access to effective emotion regulation strategies, .72 to .86 for lack of emotional awareness, .77 to .90 for lack of emotional clarity, and .79 to .92 for the total scale score (Abbasian Hadadan, 2024; Enayati Shabkolai et al., 2023; Roghani et al., 2022).

2.3. Interventions

2.3.1. Schema Therapy

The schema therapy method used in this study was based on the therapeutic protocol by Young, Klosko, and Weishaar (2003) and was conducted in 8 weekly 60-minute face-to-face sessions (Abbasian Hadadan, 2024; Aliasgari et al., 2024; Hosseini, 2024).

Session 1: The initial session focuses on building rapport and establishing a positive therapeutic relationship with the client. The importance and objectives of the therapy are explained, and the client's problems are formulated within the framework of schema therapy. This session sets the foundation for the therapeutic process by helping clients understand how their schemas influence their thoughts, emotions, and behaviors.

Session 2: This session involves examining and discussing the evidence that supports or contradicts the client's schemas, using both past and present life experiences. The discussion includes identifying both healthy and maladaptive schemas, helping the client to recognize how these schemas manifest in their current life and contribute to their difficulties.

Session 3: Cognitive techniques are introduced in this session, including schema validity testing, which involves reevaluating the evidence that supports the client's existing schemas. The client is also guided in assessing the advantages and disadvantages of their coping styles, fostering a more balanced perspective on their thought processes.

Session 4: The focus shifts to reinforcing the concept of a healthy self by identifying unmet emotional needs and providing strategies for expressing emotions. Techniques such as healthy communication skills and imaginary dialogues are taught to help clients process unresolved emotional issues and improve their relationships.

Session 5: Experiential techniques are the focus of this session, with clients being guided through imagery exercises that involve confronting distressing situations and schemas. These techniques are designed to help clients gain emotional insight and develop healthier responses to triggering situations.

Session 6: This session is dedicated to exploring therapeutic relationships and the dynamics of relationships with significant others in the client's life. Role-playing exercises are used to help clients practice new ways of interacting with important people in their lives, aiming to improve relational patterns.

Session 7: The session involves practicing healthy behaviors and introducing new behavioral patterns. Clients are encouraged to evaluate the benefits and drawbacks of healthy versus unhealthy behaviors, and strategies are provided to help them overcome obstacles to behavioral change.

Session 8: The final session involves a review of the previous sessions and reinforces the strategies learned throughout the therapy. Clients practice the skills and techniques they have acquired, ensuring they feel prepared to implement these strategies in their daily lives moving forward.

2.3.2. Cognitive-Behavioral Therapy

The cognitive-behavioral therapy (CBT) method in this study was based on the therapeutic protocol by Beck (2011) and was conducted in 8 weekly 60-minute face-to-face sessions (Aliasgari et al., 2024; Kashmari et al., 2024; Kiani Rad, 2024; Rajaeinia, 2022).

Session 1: The first session introduces the basic principles of cognitive-behavioral therapy (CBT), explaining the foundational concepts of the therapy. The session includes setting up the session schedule and discussing the rules and expectations for the therapy process, laying the groundwork for future sessions.

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Session 2: This session involves setting the agenda and evaluating the conceptualization of the client's issues through a formulation process. Clients work on filling out a worksheet that helps them understand how their thoughts, emotions, and behaviors are interconnected, providing a clear framework for the therapy.

Session 3: The focus is on goal-setting, where clients collaborate with the therapist to establish therapeutic goals. A specific therapy notebook is introduced, and activity planning is discussed, helping clients to begin organizing their thoughts and actions in alignment with their therapy goals.

Session 4: This session is dedicated to identifying and recognizing automatic thoughts. Clients are trained to record their thoughts and are given homework to practice this skill, which is crucial for understanding and eventually modifying negative thinking patterns.

Session 5: The focus is on modifying and challenging automatic thoughts. The technique of cognitive restructuring is introduced, helping clients replace irrational thoughts with more logical alternatives. A weekly activity log is introduced as a homework assignment to reinforce this skill.

Session 6: The agenda includes identifying cognitive distortions and reviewing evidence for and against these distorted thoughts. Clients are also introduced to coping cards, which serve as quick references for challenging cognitive distortions in real-time.

Session 7: The session involves designing graded assignments and using imagery exposure techniques. These techniques are intended to help clients confront feared situations in a controlled and systematic way, gradually reducing their avoidance behaviors.

Session 8: The final session reviews the content of previous sessions, reinforcing the strategies and techniques learned. Clients practice applying these strategies to ensure they are equipped to manage their thoughts and behaviors independently after the therapy concludes.

2.4. Data Analysis

The data analysis in this study was conducted using repeated measures analysis of variance (ANOVA) to assess the effectiveness of the interventions (schema therapy and cognitive-behavioral therapy) on emotion regulation among participants across three time points: pretest, posttest, and follow-up. Repeated measures ANOVA was chosen to account for the within-subject correlation and to determine whether there were statistically significant differences in the outcomes over time within each group and between the different groups (experimental and control). The analysis also included post hoc comparisons to identify specific time points where significant changes occurred. Assumptions of normality, sphericity, and homogeneity of variance were checked and addressed as needed. The significance level was set at $p < .05$ for all analyses. Statistical analyses were performed using SPSS software (version 27), ensuring robust and reliable interpretation of the data.

3. Findings and Results

In this study, the mean and standard deviation of primary emotion regulation scores for participants in the schema therapy group at the pretest, posttest, and follow-up stages were 111.23 (10.80), 85.05 (10.44), and 83.88 (9.99), respectively. For the cognitive-behavioral therapy (CBT) group, the scores were 111.52 (9.70), 97.64 (8.65), and 97.82 (8.76), respectively. In the control group, the scores were 112.17 (10.28), 112.00 (7.33), and 112.52 (10.08), respectively.

Table 1

Means (Standard Deviations) of Primary Emotion Regulation Scores in Pretest, Posttest, and Follow-up Stages

Variable	Group	Pretest	Posttest	Follow-up
Primary Emotion Regulation	Schema Therapy	111.23 (10.80)	85.05 (10.44)	83.88 (9.99)
	Cognitive-Behavioral Therapy	111.52 (9.70)	97.64 (8.65)	97.82 (8.76)
	Control	112.17 (10.28)	112.00 (7.33)	112.52 (10.08)

In this study, the Shapiro-Wilk test was used to assess the assumption of normality for the primary emotion regulation scores in each group across the three stages: pretest, posttest, and follow-up. The results indicated that the Shapiro-Wilk values for primary emotion regulation in all three groups and at all three stages were nonsignificant at the 0.05 level, suggesting that the distribution of primary emotion regulation scores in all groups and stages was normal.

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Table 2

Results of Repeated Measures ANOVA Explaining the Effect of Independent Variables on Primary Emotion Regulation

Variable	Effects	Sum of Squares	Mean Square	F	p	Partial η²
Total Score	Group Effect	9119.58	4559.79	16.30	.001	.401
	Time Effect	6161.73	5391.20	380.75	.001	.880
	Group × Time Interaction	4126.81	1717.65	127.50	.001	.842

Table 2 shows that the interaction effect of group × time for primary emotion regulation ($F = 127.50$, $p = .001$, $\eta^2 = .842$) was significant at the 0.01 level. These findings indicate that at least one of the independent variables has a significantly different effect on primary emotion regulation compared to the other independent variable or the control group. Table 3 presents the results of the Bonferroni post hoc test for primary emotion regulation scores across the three groups and stages.

Table 3

Bonferroni Post Hoc Test Results for Pairwise Comparisons of Group and Time Effects on Primary Emotion Regulation

Variable	Comparison 1	Comparison 2	Mean Difference	Standard Error	p
Primary Emotion Regulation	Pretest	Posttest	13.35	0.640	.001
	Pretest	Follow-up	13.56	0.70	.001
	Posttest	Follow-up	0.22	0.21	.973
Primary Emotion Regulation	Schema Therapy	Cognitive-Behavioral Therapy	-8.941	3.312	.029
	Schema Therapy	Control	-18.90	3.312	.001
	Cognitive-Behavioral Therapy	Control	-9.96	3.312	.013

The results of the Bonferroni post hoc test in Table 3 indicate that both schema therapy and cognitive-behavioral therapy, compared to the control group, resulted in improved primary emotion regulation at the posttest and follow-up stages. Additionally, the results show that the mean difference in primary emotion regulation scores between the schema therapy and control groups was significant at the pretest-posttest and pretest-follow-up stages but nonsignificant at the posttest-follow-up stage. This finding suggests that the changes resulting from schema therapy in primary emotion regulation among individuals with body dysmorphic disorder persisted three months after the treatment ended. Therefore, it was concluded that both schema therapy and cognitive-behavioral therapy effectively regulate primary emotions in individuals with this disorder. Moreover, the results showed a significant difference ($p = .029$) between the effects of schema therapy and cognitive-behavioral therapy on primary emotion regulation, with schema therapy leading to a greater reduction in the mean scores of primary emotion regulation. Thus, it was concluded that schema therapy is a more effective method than cognitive-behavioral therapy for regulating primary emotions in individuals with this disorder.

4. Discussion and Conclusion

The present study aimed to compare the effectiveness of schema therapy and cognitive-behavioral therapy (CBT) in regulating primary emotions in young women with body dysmorphic disorder (BDD). The findings indicate that both schema therapy and CBT significantly improved emotion regulation compared to the control group. However, schema therapy demonstrated superior effectiveness in reducing difficulties in primary emotion regulation, with the effects persisting three months post-intervention. These results contribute to the growing body of evidence supporting the efficacy of schema therapy as a potent intervention for complex psychological disorders, particularly those involving deeply rooted cognitive and emotional dysfunctions.

The significant improvement in emotion regulation observed in the schema therapy group aligns with previous research, which has highlighted the efficacy of schema therapy in addressing maladaptive schemas and enhancing emotional processing. For example, Aflakian, Atashpour, and Khayatan (2020) found that schema therapy significantly reduced early maladaptive schemas and anxiety in patients with obsessive-compulsive disorder, suggesting that the approach is effective in treating conditions where cognitive distortions and emotional dysregulation are prevalent (Aflakian et al., 2020). Similarly, Faßbinder et al.

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(2016) reported that schema therapy effectively improved emotion regulation, particularly by targeting unmet emotional needs and maladaptive coping mechanisms, which are often deeply entrenched in individuals with BDD (Faßbinder et al., 2016).

The sustained impact of schema therapy on emotion regulation three months post-intervention is particularly noteworthy. This finding suggests that schema therapy not only provides immediate relief from emotional dysregulation but also facilitates long-term changes in cognitive and emotional patterns. This outcome is consistent with the findings of Leppänen et al. (2014), who observed that schema therapy led to lasting changes in the cognitive schemas of patients with borderline personality disorder, another condition characterized by severe emotional dysregulation (Leppänen et al., 2014). The enduring nature of these changes underscores the potential of schema therapy to effect meaningful and lasting improvements in patients with BDD, who often struggle with persistent and chronic symptoms.

In contrast, while CBT also led to significant improvements in emotion regulation, the effects were less pronounced and did not persist as strongly at the follow-up stage. This outcome may be due to the more symptom-focused nature of CBT, which primarily addresses distorted thoughts and behaviors without necessarily targeting the underlying cognitive schemas that may drive these issues. Previous research has documented the effectiveness of CBT in treating BDD and other related disorders, particularly through techniques such as cognitive restructuring and exposure therapy (Enander et al., 2016; Prazeres et al., 2013). However, these studies also acknowledge that CBT's impact may be limited in cases where the patient's issues are rooted in deeper, more entrenched cognitive structures, which schema therapy is specifically designed to address.

The interaction effect between group and time observed in this study further supports the superiority of schema therapy in maintaining improvements in emotion regulation over time. The Bonferroni post hoc test revealed that the schema therapy group exhibited significant improvements in emotion regulation from pretest to posttest and from pretest to follow-up, with no significant differences between posttest and follow-up. This finding suggests that the benefits of schema therapy are not only immediate but also sustainable, a crucial consideration for treating chronic conditions like BDD (Caponnetto, 2024; Kellogg & Young, 2006). In contrast, the CBT group's improvements, while significant, were less stable, indicating a potential need for booster sessions or additional interventions to maintain the gains achieved during therapy.

The findings of this study also align with research on the mechanisms of change in schema therapy. Kellogg and Young (2006) emphasized that schema therapy's effectiveness lies in its ability to address both the cognitive and emotional components of psychological disorders, particularly by modifying maladaptive schemas and enhancing emotional awareness and regulation (Kellogg & Young, 2006). This dual focus is particularly relevant for BDD, where patients often experience intense emotional distress related to their perceived physical flaws, which are driven by deeply ingrained cognitive distortions (Björnsson et al., 2010). By targeting these underlying schemas, schema therapy may offer a more comprehensive and effective treatment approach compared to CBT, which primarily focuses on surface-level cognitive distortions.

Furthermore, the results of this study have important implications for the treatment of BDD. Given that BDD is often associated with high levels of comorbidity, including anxiety, depression, and obsessive-compulsive symptoms, a treatment approach that can address the broader cognitive and emotional landscape of the disorder is essential (Fang et al., 2013; Sij et al., 2018). Schema therapy's ability to produce lasting changes in emotion regulation suggests that it may be particularly well-suited to treating BDD, especially in cases where patients have not responded adequately to CBT or other standard interventions. This potential for broader and more sustained impact highlights the need for clinicians to consider schema therapy as a viable and effective option for treating BDD and related conditions.

The study's findings also contribute to the ongoing debate about the relative effectiveness of different therapeutic approaches for complex psychological disorders. While CBT remains the gold standard for many conditions, including BDD, the growing evidence supporting schema therapy suggests that it may be more effective in cases where traditional CBT falls short (Aflakian, 2023; Aflakian et al., 2020; Barooti, 2024). This study adds to the literature by demonstrating that schema therapy not only outperforms CBT in the short term but also produces more durable improvements in emotion regulation, which is a critical component of recovery for patients with BDD.

Despite the significant contributions of this study, several limitations should be acknowledged. First, the sample size was relatively small, which may limit the generalizability of the findings. While the study was adequately powered to detect significant differences between the groups, a larger

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sample size would provide more robust results and enhance the external validity of the findings. Future studies should aim to replicate these results with larger and more diverse populations to confirm the generalizability of the findings across different demographic and clinical groups.

Second, the study relied on self-report measures for assessing emotion regulation, which may be subject to biases such as social desirability or recall bias. Although the measures used in this study, such as the Difficulties in Emotion Regulation Scale (DERS), have been validated in previous research, the inclusion of additional objective measures, such as physiological assessments or clinician-rated scales, would provide a more comprehensive evaluation of the impact of the interventions on emotion regulation.

Third, the study did not include a long-term follow-up beyond three months, which limits the ability to assess the durability of the treatment effects over an extended period. While the three-month follow-up provided valuable insights into the sustainability of the interventions, longer follow-up periods are necessary to determine whether the benefits of schema therapy and CBT persist over time and to identify any potential relapse patterns.

Given the limitations of the current study, future research should focus on several key areas to build on these findings. First, as mentioned, larger-scale studies with more diverse populations are needed to confirm the generalizability of the results. This includes exploring the effectiveness of schema therapy and CBT across different age groups, genders, and cultural backgrounds, as well as in individuals with varying degrees of BDD severity.

Second, future research should incorporate a wider range of assessment tools to capture the full spectrum of changes in emotion regulation and other relevant outcomes. This could include the use of neuroimaging techniques to examine changes in brain activity associated with the interventions, as well as ecological momentary assessment (EMA) to track fluctuations in emotion regulation in real-time, providing a more dynamic picture of treatment effects.

Third, longitudinal studies with extended follow-up periods are essential to understand the long-term impact of schema therapy and CBT on BDD. Such studies should investigate the factors that contribute to the maintenance of treatment gains, as well as those that may lead to relapse. Additionally, research could explore the potential benefits of combining schema therapy with other therapeutic modalities, such as pharmacotherapy or mindfulness-based interventions, to enhance treatment outcomes.

Finally, future research should investigate the mechanisms of change in schema therapy and CBT more closely. While this study provides evidence of the effectiveness of schema therapy in improving emotion regulation, further research is needed to identify the specific therapeutic processes that contribute to these changes. This could involve dismantling studies that isolate different components of schema therapy to determine which elements are most effective in producing positive outcomes.

The findings of this study have several important implications for clinical practice. First, clinicians should consider incorporating schema therapy into their treatment repertoire for BDD, particularly for patients who have not responded adequately to CBT. Given the superior effectiveness of schema therapy in regulating primary emotions and its potential for long-term impact, it may be especially beneficial for individuals with complex and chronic forms of BDD.

Second, when implementing schema therapy, clinicians should focus on the dual objectives of modifying maladaptive schemas and enhancing emotion regulation. This dual focus is crucial for achieving lasting therapeutic change, as it addresses both the cognitive and emotional aspects of BDD. Clinicians should also be prepared to provide ongoing support and follow-up, as the sustainability of treatment effects may depend on continued engagement with therapeutic principles and techniques.

Third, given the limitations of CBT in addressing deeper cognitive and emotional structures, clinicians should consider integrating schema therapy with other interventions to create a more comprehensive treatment plan. For example, combining schema therapy with mindfulness-based strategies or pharmacotherapy could help address the full range of symptoms experienced by individuals with BDD, leading to more robust and enduring treatment outcomes.

Finally, the study highlights the importance of individualized treatment planning. Not all patients with BDD will respond equally to a given therapeutic approach, so clinicians should be prepared to tailor their interventions based on the specific needs and characteristics of each patient. This may involve a flexible approach that combines elements of schema therapy and CBT, or the inclusion of additional therapeutic modalities as needed to optimize treatment outcomes.

In conclusion, this study provides compelling evidence for the effectiveness of schema therapy in regulating primary emotions in individuals with BDD, offering a promising alternative to CBT for this complex and challenging

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disorder. The findings underscore the importance of addressing both cognitive and emotional factors in treatment and suggest that schema therapy may offer more sustainable benefits compared to traditional CBT. Future research and clinical practice should continue to explore and refine the use of schema therapy for BDD, with the goal of improving the lives of individuals affected by this debilitating condition.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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