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# Comparison of Emotion-Focused Therapy Approach and Meta-Diagnostic Protocol on Emotion Regulation in Adolescents with Borderline Personality Disorder

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**ABSTRACT**

**Objective:** This study aims to evaluate the effectiveness of an emotion-focused therapy approach and a meta-diagnostic protocol in improving emotion regulation among adolescents with borderline disorder.

**Methods and Materials:** The study was a quasi-experimental design utilizing a pre-test-post-test and follow-up approach (three months later) with both control and experimental groups. The statistical population for this research comprised young individuals with borderline personality disorder seeking treatment at psychological clinics in Tehran from July to October 2023. A sample of 39 individuals was purposefully selected to participate in the study. The intervention, which consisted of six sessions conducted twice a week by a clinical psychologist, took place at one of the clinics involved in the study. The Cognitive Emotion Regulation Questionnaire (CERQ) was utilized as the measurement tool in this research. Data collected was analyzed using the Kruskal-Wallis H test, repeated measures ANCOVA, and Bonferroni's post hoc test with a p-value set at 0.05. Statistical analysis was performed using SPSS version 27 and JASP version 18.1.0 software.

**Findings:** The findings of this study indicated that the component of other blame showed a significant difference between the Emotion-focused therapy group and the control group during the follow-up phase (p<0.001). Similarly, there was no notable difference between the Meta-diagnostic therapy group and the control group during the follow-up phase (p=1.000). Additionally, there was a significant distinction between the Emotion-focused therapy group and the Meta-diagnostic group during the follow-up phase (p<0.001). The variables of Self-blame and Rumination were observed to have significant variances between the Emotion-focused therapy group and the Meta-diagnostic, as well as the control group, during the post-test and follow-up phases (P<0.01. The study did not find any noteworthy distinction between the Meta-diagnostic therapy group and the control group (P>0.05).

**Conclusion:** These findings suggest that therapists should consider tailoring interventions to the emotional needs of adolescents with BPD, with EFT potentially offering a more targeted approach. The results of this study offer valuable insights for clinicians working with adolescents with BPD, guiding future treatment choices for this challenging condition.

**Keywords:** Emotion-Focused Therapy, Meta-Diagnostic Therapy, Emotion Regulation, Borderline Personality Disorder, Adolescents

## Introduction

Borderline personality disorder (BPD) among adolescents is described as one year of immature personality growth involving at least five of the following areas: Strong abandonment, unstable relationships, identity disturbance, impulsivity, suicide or self-mutilation behavior, emotional instability, constant feelings of emptiness, intense anger, and transient stress-related paranoid (Leichsenring et al., 2024). BPD typically starts during adolescence (after age 12) and is often correlated to symptoms of internalizing disorders (depression, anxiety), externalizing disorders (conduct problems, hyperactivity, substance use), or both. It is also connected to various negative outcomes such as poor academic and occupational success, heightened conflict with partners, risky sexual behavior, low social support, and decreased life satisfaction (Bohus et al., 2021). Research has indicated that BDP affects around 0.7 to 2.7% of adults and is related to functional impairment and increased medical service utilization (Leichsenring et al., 2023). Studies have found a high occurrence of comorbidity between BPD and generalized anxiety disorder (GAD), leading to more severe symptoms of BPD, impulsivity, anger, and hopelessness (Shah et al., 2023).

In addition, difficulties in emotion regulation are common in BPD. Emotion regulation refers to how individuals manage and respond to their emotions, including physiological, social, and cognitive processes (Beheshti Motlagh et al., 2022). In people with BPD, emotional dysregulation can lead to difficulties in recognizing, accepting, and controlling emotions, which affects their interpersonal functioning (Miano et al., 2021). Research has shown that adolescents with BPD tend to have different emotional regulation strategies compared to healthy individuals, such as lower self-compassion and less effective coping mechanisms (Salgó et al., 2021). Furthermore, studies suggest that BPD symptoms are indirectly linked to a higher risk of self-injury through triggering emotional difficulties (Gratz et al., 2022).

Individuals diagnosed with borderline personality disorder often struggle with emotion processing, regulation, feelings of emptiness, dissociation, and difficulty in self-soothing. Emotion-focused therapy has proven to be an effective treatment for individuals dealing with severe emotional issues like complex trauma (Babapour et al., 2023). This therapy approach emphasizes emotional regulation, reprocessing experiences, and creating skills and insights to regulate emotions (Afsar et al., 2021). Research indicates that emotion-focused therapy can enhance distress tolerance and cognitive emotions regulation (CER) (Parham et al., 2023). Additionally, studies have shown that this therapy is successful in improving positive CER (Zarieh et al., 2023).

One of the latest treatment methods for emotional disorders in children and adolescents is the integrated protocol. The Meta-Diagnostic Protocol is an integrated approach that focuses on common factors in emotional disorders, such as emotional experiences and maladaptive emotion regulation strategies (Pouladi et al., 2022). It is based on the idea that emotional disorders share more similarities than differences and addresses vulnerability factors contributing to these disorders (Hatamian et al., 2023). Unlike Emotion Focused Therapy which emphasizes emotional expression and processing, the Meta-Diagnostic Protocol targets maladaptive emotion regulation patterns and aims to generalize therapeutic outcomes across various emotional disorders (Afsar et al., 2021). It focuses on improving emotional recognition, regulation, and psychological resilience (Mozaffari et al., 2020). Research shows that this approach can enhance emotion regulation and resilience, while also reducing negative emotions (Rahimi & Bahramipour, 2024).

Borderline personality disorder is associated with significant functional impairments and high social costs. It is also closely linked to other mental health conditions, including depression, substance abuse, PTSD, ADHD, bipolar disorder, bulimia nervosa, and other personality disorders (Leichsenring et al., 2024). While emotion regulation is crucial in treating BPD, there is limited research comparing the effectiveness of Emotion-Focused Therapy and the Meta-Diagnostic Protocol in adolescents with this disorder. Comparing these two therapies is important as they offer distinct approaches to treating BPD. EFT focuses on processing emotions, while the Meta-Diagnostic Protocol addresses maladaptive emotion regulation strategies. This comparison could help identify the most effective therapy for adolescents with BPD and determine the best treatment setting, ultimately leading to better outcomes.

This study aims to directly compare these therapies to better understand their impact on emotional regulation in adolescents with borderline personality.

## Methods and Materials

### Study Design and Participants

The current study was designed as an applied and semi-experimental research, utilizing follow-up phase (three months later) with one control group and two experimental groups.

The intervention methods utilized were emotion-focused and meta-diagnostic therapeutic approaches, with emotion regulation in adolescents as the dependent variable in the post-test and follow-up stages. The research targeted adolescents with BPD attending psychological clinics in Tehran between October and January of 2023, confirmed by consulting experts. A total of 45 individuals (15 in each of the two experimental groups and 15 in the control group) were selected using purposive sampling and randomly assigned to groups via coin tossing.

The sample size was determined using G*Power software, with an alpha level of 0.05, effect size of 0.25, power of 0.90, and three groups.

**Figure 1**

*Sample size calculation with G*Power software*
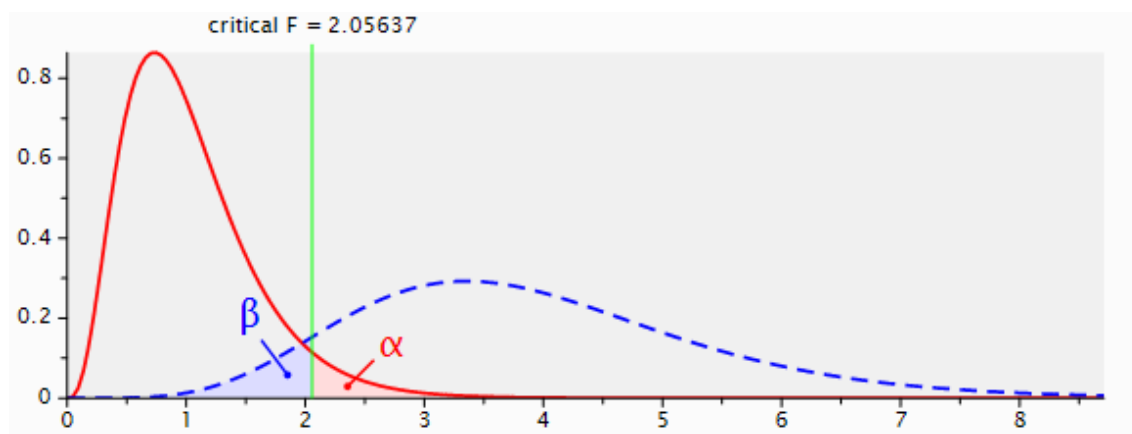


To be eligible, adolescents and their parents provided informed consent, demonstrated sufficient understanding to complete survey questions, and had a diagnosis of BPD. Exclusion criteria included: being aged outside the 15-18 range, having a physical condition that prevented participation, failing to answer more than ten questions on surveys, skipping two or more intervention sessions, arriving late to two sessions, or expressing unwillingness to continue participation.

The research was initiated by securing necessary permissions from the researcher's university, followed by collaboration with two psychological clinics in Tehran, facilitated by university professors. Participants were identified by visiting these clinics and subsequently contacting parents of adolescents with borderline disorders either through social media or directly reaching out to the clinics. Upon explaining the reason for the study and the steps involved, parents who showed interest in enrolling their children were given information about the research and guaranteed that their identities would be kept confidential, and they could choose to stop participating at any time. Due to logistical constraints, the data collection process involving the completion of questionnaires in the presence of adolescents and their parents spanned four months. Following recruitment, participants were divided randomly into three groups, each comprising 15 individuals.

Participants in the initial experimental group attended six sessions following a meta-diagnostic approach (Akhondi Yazdi et al., 2024), while individuals in the second experimental group took part in five sessions focusing on emotion-focused therapy training (Ardestani et al., 2021). Meanwhile, the control group members were placed on a waiting list for training. To adhere to ethical standards, the researcher also held a

session for the control group following the completion of the study.

Due to the specific needs of adolescents, the researcher decided to reduce the number of sessions compared to standard educational protocols.

The intervention was overseen by a clinical psychologist twice a week at a clinic within the research site. In the end, 39 out of the initial 45 participants in the study continued until the follow-up phase. The research followed ethical protocols to allow participants the option to withdraw from the study at any point. Furthermore, Figure below displays the CONSORT flow diagram.

**Figure 2**

*The flow diagram of the study*
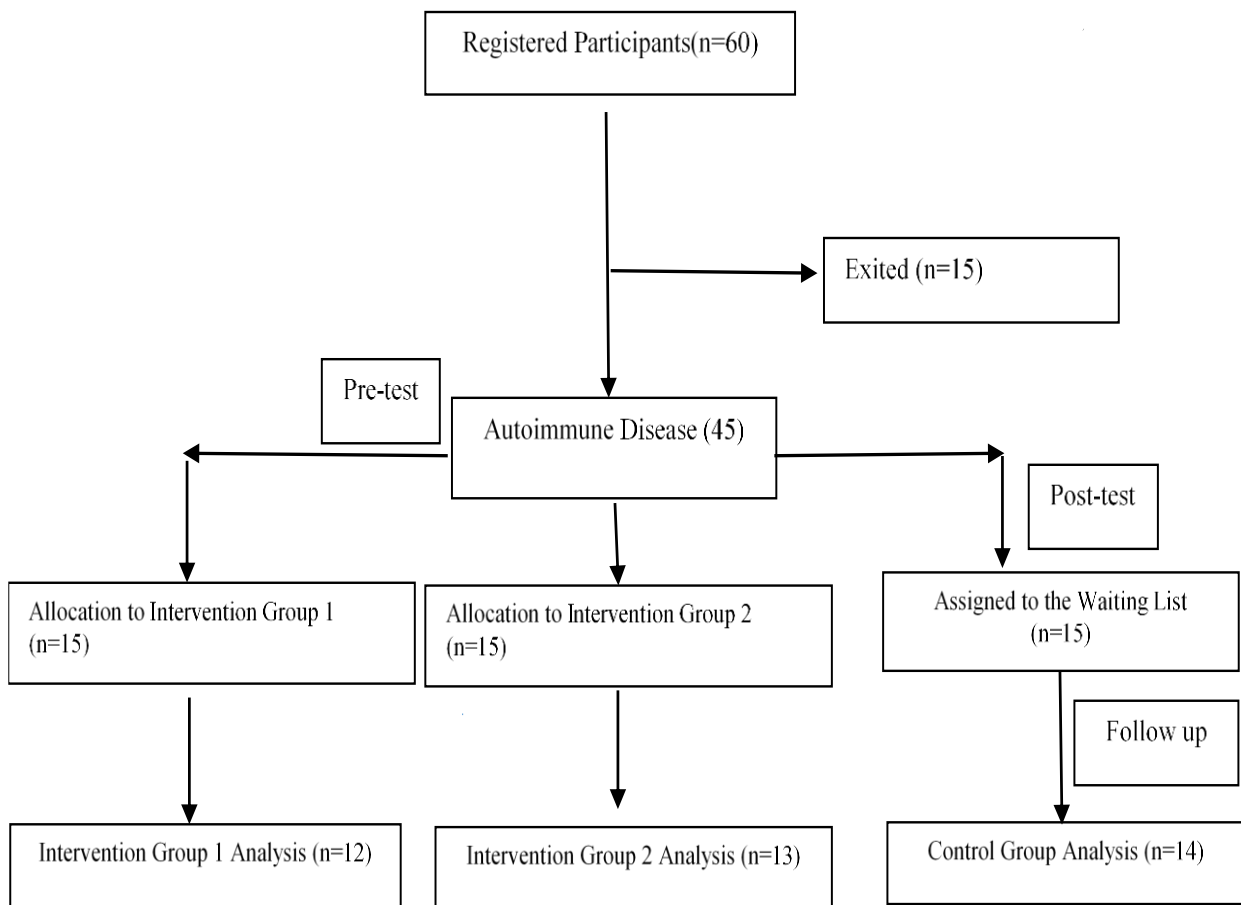


*Instruments*

**Cognitive Emotion Regulation Questionnaire (CERQ):** In 2002, Garnowski developed a self-report questionnaire to assess cognitive emotion regulation in individuals (Garnefski et al., 2009). The questionnaire consists of 36 items and uses a 5-point Likert scale ranging from always to never. In Iran, the questionnaire was confirmed to be valid after identifying seven primary factors (Samani & Sadeghi, 2010). These factors include Self-blame (3 questions), Other blame (4 questions), Rumination (5 questions), Catastrophizing (4 questions), Acceptance (4 questions) as negative factors, and Positive refocusing (8 questions) and Positive reappraisal (4 questions) as positive factors. Each factor is calculated independently in the questionnaire. The scale in this study had a Cronbach's alpha coefficient of 0.89 when tested in Iran (Mizani et al., 2021). During the study, the researcher found a Cronbach's alpha coefficient of 0.71 for the scale.

*Interventions*

**Meta-Diagnostic Approach for Emotion Regulation**

**Session One: Introduction and Emotion Recognition**: In the first session, participants are introduced to the group, and rapport is established through interactive discussions. The primary objective is to help adolescents recognize and comprehend their emotions while understanding their impact on behavior. The therapist introduces the concept of meta-diagnostic therapy and explains the significance of emotion regulation in managing symptoms of borderline personality disorder (BPD). Additionally, confidentiality boundaries are outlined, and informed consent is obtained from the participants. To promote familiarity among group members, an ice-breaking activity is conducted. As an initial exercise, adolescents are encouraged to document their daily emotions in an emotion journal and write about thrilling experiences to enhance emotional awareness.

**Session Two: Identification and Evaluation of Feelings**: This session focuses on improving adolescents' ability to analyze and comprehend their emotions by introducing the ABC model, which links thoughts, emotions, and behaviors. The therapist guides participants in identifying situations that trigger intense emotional responses and evaluating their reactions. Through guided discussions, adolescents learn to assess the role of thoughts in shaping their emotional and behavioral responses. A practical exercise is conducted where participants identify and express core emotions by matching body language and behaviors, reinforcing their understanding of emotional cues.

**Session Three: Enhancement of Emotional Regulation Skills**: The third session is dedicated to training adolescents in emotional regulation skills. The therapist introduces and demonstrates various emotion regulation techniques, including deep breathing exercises and progressive muscle relaxation, to help manage emotional distress effectively. Participants are guided through physical relaxation and mindfulness techniques to enhance their ability to regulate emotions in stressful situations. Adolescents practice these techniques during the session and are encouraged to document their experiences and outcomes in their journals for later discussion.

**Session Four: Facing and Overcoming Pessimistic Thinking Patterns**: This session focuses on cognitive restructuring, enabling adolescents to recognize and modify negative thoughts that contribute to emotional distress. The therapist provides training on cognitive restructuring techniques to transform negative thought patterns into positive, adaptive ones. Adolescents engage in an exercise examining the evidence behind their pessimistic thoughts, learning to challenge irrational beliefs. They then apply cognitive reconstruction techniques to real-life situations and document their experiences, promoting a shift toward more constructive emotional responses.

**Session Five: Strengthening the Sense of Control and Self-Awareness**: In this session, adolescents learn to enhance their emotional regulation and behavioral responses by developing self-control techniques. The therapist introduces problem-solving and decision-making strategies, empowering participants to handle emotional challenges effectively. Personalized self-care routines and uplifting strategies are discussed, emphasizing mental well-being. Adolescents engage in the implementation of self-care techniques tailored to their needs and document their experiences to assess their impact on emotional stability.

**Session Six: Prevention of Relapse and Consolidation of Skills**: The final session focuses on consolidating learned skills and ensuring their long-term application. Adolescents review all acquired strategies and explore ways to integrate them into their daily lives. The therapist guides participants in identifying potential triggers for negative emotions and developing personalized relapse prevention strategies. A practical exercise is conducted where adolescents utilize their newly acquired skills in challenging situations and share their experiences in the next meeting. The session concludes with the administration of a post-test to evaluate progress and reinforce the importance of maintaining emotional regulation skills in the future.

**Emotion-Focused Therapy (EFT) for Adolescents**

**Session One: Recognition and Understanding of Emotions**: In the first session, participants are introduced to the principles of Emotion-Focused Therapy (EFT) and the importance of emotions in shaping adolescent behavior. The therapist explains the distinction between primary emotions (such as sadness or fear) and secondary emotions (such as anger), helping

participants recognize and understand their emotional complexity. Adolescents learn techniques for emotional regulation to reduce intensity and instability, along with strategies to enhance emotional self-awareness and processing. Confidentiality boundaries are discussed to ensure a safe and supportive environment. As a practical exercise, participants document their daily emotions and reflect on how these emotions influence their behavior, fostering a deeper understanding of their emotional experiences.

**Session Two: Identifying and Challenging False Thoughts and Beliefs**: This session focuses on helping adolescents recognize and challenge negative automatic thoughts that contribute to emotional distress. The therapist guides participants in identifying irrational beliefs that hinder effective emotional management, particularly those that amplify intense emotions. Through cognitive restructuring techniques, adolescents learn to evaluate the accuracy of their negative thoughts and replace them with more rational, constructive ones. As a practical exercise, participants engage in recording negative thoughts and systematically substituting them with positive, adaptive alternatives, reinforcing their ability to manage distressing emotions.

**Session Three: Emotional Processing**: In this session, adolescents are encouraged to address and process suppressed or unstable emotions. The therapist facilitates discussions on emotional expression and helps participants confront emotions that have been overlooked or suppressed due to fear or avoidance. Using EFT techniques, participants practice accepting and working through their emotions rather than suppressing them. Emotional exposure exercises are implemented, where adolescents reflect on personal emotional encounters, recognize hidden or disregarded feelings, and share their experiences within a safe therapeutic environment to promote emotional healing.

**Session Four: Emotional Regulation**: This session is dedicated to training adolescents in emotional regulation techniques to decrease the intensity of emotional responses. The therapist introduces techniques such as deep breathing, progressive muscle relaxation, and mindfulness practices to help manage emotional distress. Participants are guided in implementing at least one emotional regulation strategy daily during stressful situations and documenting its effects on their emotional state. Additionally, impulse control techniques are introduced, encouraging adolescents to pause and reflect on their emotions before acting on impulsive urges, fostering self-regulation and emotional stability.

**Session Five: Developing Positive Emotions and Reinforcing Abilities While Avoiding Setbacks**: The final session focuses on fostering positive emotions and strengthening the skills learned throughout the intervention. The therapist introduces methods to enhance positive emotions, such as practicing gratitude exercises and focusing on uplifting experiences. Adolescents engage in activities designed to create positive emotional moments, such as identifying opportunities for happiness and transforming past negative experiences into optimistic beliefs. Additionally, a plan is developed to prevent setbacks by identifying potential emotional triggers and devising strategies to manage them effectively. The intervention concludes with an assessment of acquired skills and their application in daily life, followed by the administration of a post-test to evaluate overall progress.

*Data Analysis*

Descriptive statistics (mean, standard deviation) were used for summarizing data, and inferential statistics included repeated measures ANCOVA, Kruskal-Wallis H test, and Bonferroni's post hoc test ($p < 0.05$). SPSS version 27 and JASP version 18.1.0 were used for all analyses. The Shapiro-Wilk test assessed normality, and Levene's test checked homogeneity of variances

Findings and Results

The study collected data from adolescents in three stages: pre-test, post-test, and follow-up, across the Emotion-focused therapy, Meta-diagnostic therapy, and control groups. Initially, the researcher explored and elucidated the demographic characteristics of the study. The participants were sorted into three different age groups: 15 to 16 years old, 16 to 17 years old, and 17 to 18 years old. Additionally, they were classified based on gender into boys and girls. The results of the Kruskal-Wallis H test indicated no significant difference among the groups regarding demographic variables (P>0.05). The researcher also analyzed the mean and standard deviation of the research variables within the research groups as shown in Table 1.

**Table 1**

*Description of research variables*

| Variable | TIME | Groups | M | SD | Skewness | Kurtosis | Min | Max |
|---|---|---|---|---|---|---|---|---|
| Self-blame | Pre-test | EFT | 8.833 | 1.030 | -0.211 | -1.142 | 7 | 10 |
| | | Meta-diagnostic therapy | 8.846 | 0.987 | -0.262 | -0.912 | 7 | 10 |
| | | Control | 8.429 | 0.852 | 0.694 | 0.103 | 7 | 10 |
| | Post-test | EFT | 6.500 | 1.087 | 0.764 | 1.579 | 5 | 9 |
| | | Meta-diagnostic therapy | 8.000 | 0.707 | 0.000 | -0.618 | 7 | 9 |
| | | Control | 8.429 | 0.938 | 0.240 | -0.491 | 7 | 10 |
| | Follow up | EFT | 6.333 | 0.888 | 0.139 | -0.254 | 5 | 8 |
| | | Meta-diagnostic therapy | 7.846 | 0.689 | 0.203 | -0.496 | 7 | 9 |
| | | Control | 8.429 | 0.938 | 0.240 | -0.491 | 7 | 10 |
| Other blame | Pre-test | EFT | 13.583 | 1.165 | -0.241 | -1.352 | 12 | 15 |
| | | Meta-diagnostic therapy | 13.615 | 1.261 | -0.307 | -1.627 | 12 | 15 |
| | | Control | 13.357 | 1.216 | 0.089 | -1.626 | 12 | 15 |
| | Post-test | EFT | 12.417 | 0.996 | 0.274 | -0.654 | 11 | 14 |
| | | Meta-diagnostic therapy | 13.385 | 1.446 | -0.218 | -1.568 | 11 | 15 |
| | | Control | 13.357 | 1.082 | 0.004 | -1.246 | 12 | 15 |
| | Follow up | EFT | 10.500 | 0.798 | 1.289 | 0.150 | 10 | 12 |
| | | Meta-diagnostic therapy | 13.769 | 1.166 | -0.594 | -1.020 | 12 | 15 |
| | | Control | 13.357 | 1.082 | 0.004 | -1.246 | 12 | 15 |
| Rumination | Pre-test | EFT | 16.917 | 1.621 | -0.455 | -0.798 | 14 | 19 |
| | | Meta-diagnostic therapy | 17.154 | 1.463 | -0.877 | 0.510 | 14 | 19 |
| | | Control | 16.357 | 1.692 | 0.231 | -1.086 | 14 | 19 |
| | Post-test | EFT | 14.500 | 0.522 | 0.000 | -2.444 | 14 | 15 |
| | | Meta-diagnostic therapy | 16.462 | 1.613 | -0.200 | -1.052 | 14 | 19 |
| | | Control | 16.500 | 1.653 | 0.000 | -0.938 | 14 | 19 |
| | Follow up | EFT | 14.333 | 0.492 | 0.812 | -1.650 | 14 | 15 |
| | | Meta-diagnostic therapy | 16.692 | 1.750 | -0.325 | -1.178 | 14 | 19 |
| | | Control | 16.571 | 1.742 | -0.139 | -1.340 | 14 | 19 |
| Catastrophizing | Pre-test | EFT | 13.667 | 1.435 | -1.065 | 0.206 | 11 | 15 |
| | | Meta-diagnostic therapy | 13.462 | 1.391 | -0.345 | -1.236 | 11 | 15 |
| | | Control | 13.286 | 1.204 | -0.333 | -0.695 | 11 | 15 |
| | Post-test | EFT | 12.750 | 1.422 | -0.156 | -1.319 | 11 | 15 |
| | | Meta-diagnostic therapy | 13.615 | 1.325 | -0.674 | -0.554 | 11 | 15 |
| | | Control | 13.286 | 1.204 | -0.333 | -0.695 | 11 | 15 |
| | Follow up | EFT | 12.083 | 1.165 | 0.225 | -1.866 | 11 | 14 |
| | | Meta-diagnostic therapy | 13.846 | 1.214 | -0.648 | -1.122 | 12 | 15 |
| | | Control | 13.500 | 1.225 | -0.586 | -0.312 | 11 | 15 |
| Acceptance | Pre-test | EFT | 13.500 | 1.314 | -1.153 | 0.654 | 11 | 15 |
| | | Meta-diagnostic therapy | 13.154 | 1.463 | -0.500 | -1.156 | 11 | 15 |
| | | Control | 13.071 | 1.328 | -0.610 | -0.896 | 11 | 15 |
| | Post-test | EFT | 15.250 | 0.866 | -0.567 | -1.446 | 14 | 16 |
| | | Meta-diagnostic therapy | 13.385 | 1.325 | -0.849 | -0.224 | 11 | 15 |
| | | Control | 13.071 | 1.328 | -0.610 | -0.896 | 11 | 15 |
| | Follow up | EFT | 15.083 | 0.996 | -0.192 | -2.254 | 14 | 16 |
| | | Meta-diagnostic therapy | 13.923 | 1.256 | -0.727 | 1.497 | 11 | 16 |
| | | Control | 13.143 | 1.351 | -0.736 | -0.875 | 11 | 15 |
| Positive refocusing | Pre-test | EFT | 30.167 | 1.586 | -0.653 | -0.065 | 27 | 32 |
| | | Meta-diagnostic therapy | 29.308 | 1.251 | 0.820 | 0.196 | 28 | 32 |
| | | Control | 28.929 | 1.592 | 0.135 | 0.007 | 26 | 32 |
| | Post-test | EFT | 30.333 | 1.670 | -0.776 | -0.231 | 27 | 32 |
| | | Meta-diagnostic therapy | 29.462 | 1.664 | 0.015 | -0.841 | 27 | 32 |
| | | Control | 29.357 | 1.823 | -0.177 | -0.732 | 26 | 32 |
| | Follow up | EFT | 30.667 | 1.155 | -0.063 | -1.473 | 29 | 32 |
| | | Meta-diagnostic therapy | 28.769 | 1.739 | 0.305 | -0.608 | 26 | 32 |
| | | Control | 29.357 | 1.823 | -0.177 | -0.732 | 26 | 32 |
| Positive reappraisal | Pre-test | EFT | 13.667 | 1.435 | -1.065 | 0.206 | 11 | 15 |
| | | Meta-diagnostic therapy | 13.154 | 1.345 | -0.813 | -0.583 | 11 | 15 |
| | | Control | 13.000 | 1.414 | -0.571 | -1.210 | 11 | 15 |
| | Post-test | EFT | 14.500 | 0.798 | -1.289 | 0.150 | 13 | 15 |
| | | Meta-diagnostic therapy | 13.308 | 1.437 | -0.838 | -0.598 | 11 | 15 |
| | | Control | 13.286 | 1.383 | -0.802 | -0.469 | 11 | 15 |
| | Follow up | EFT | 14.417 | 1.165 | -2.661 | 7.731 | 11 | 15 |
| | | Meta-diagnostic therapy | 13.385 | 1.502 | -0.784 | -0.726 | 11 | 15 |
| | | Control | 13.286 | 1.383 | -0.802 | -0.469 | 11 | 15 |

Table 1 displays the mean and standard deviation of the participant's scores in the research variables. The mean of the Self-blame variable in the EFT, Meta-diagnostic therapy, and control groups was similar in the Pre-test phase. However, the scores decreased in the experimental groups in the Post-test and Follow-up stages compared to the control group. The mean of Other blame, Rumination, and Catastrophizing variables did not differ much among the groups in the Pre-test phase. Yet, the scores decreased in the EFT group in the Post-test and Follow-up stages compared to the control and Meta-diagnostic therapy groups. The mean of Acceptance and Positive reappraisal variables showed no significant differences among the EFT, Meta-diagnostic therapy, and control groups during the Pre-test phase. However, the scores increased in the EFT group in the Post-test and Follow-up stages compared to the control and Meta-diagnostic therapy groups. There was no major difference in the Positive Refocusing variable across groups and stages. Additionally, the researcher conducted Levene's test in Table 2, confirming the assumption in all cases except one. To obtain accurate results, the researcher also utilized the Welch test to assess the differences between groups in the Rumination component.

**Table 2**

*Test for Equality of Variances (Levene's)*

|  |  | F | df1 | df2 | p |
|---|---|---|---|---|---|
| Self-blame | Post-test | 1.634 | 2 | 36 | 0.209 |
|  | Follow up | 1.139 | 2 | 36 | 0.331 |
| Other blame | Post-test | 1.756 | 2 | 36 | 0.187 |
|  | Follow up | 1.178 | 2 | 36 | 0.320 |
| Rumination | Post-test | 9.232 | 2 | 36 | < .001 |
|  | Follow up | 8.135 | 2 | 36 | 0.001 |
| Catastrophizing | Post-test | 0.848 | 2 | 36 | 0.437 |
|  | Follow up | 0.324 | 2 | 36 | 0.726 |
| Acceptance | Post-test | 1.934 | 2 | 36 | 0.159 |
|  | Follow up | 0.709 | 2 | 36 | 0.499 |
| Positive refocusing | Post-test | 0.101 | 2 | 36 | 0.904 |
|  | Follow up | 1.322 | 2 | 36 | 0.279 |
| Positive reappraisal | Post-test | 1.492 | 2 | 36 | 0.238 |
|  | Follow up | 0.674 | 2 | 36 | 0.516 |

The researcher analyzed the results of the repeated measures analysis of covariance test in Table 3. the results of the covariance analysis, showing significant effects for Self-blame, Rumination, and Acceptance, indicating the influence of the interventions.

**Table 3**

*Covariance analysis test*

| Variable | Source | | SS | MS | F | P-value | Eta Squared |
|---|---|---|---|---|---|---|---|
| Self -blame | Within Subjects Effects | TIME | 0.076 | 0.076 | 0.229 | 0.636 | 0.006 |
|  |  | TIME ✳ Pre-test | 0.106 | 0.106 | 0.322 | 0.574 | 0.009 |
|  |  | TIME ✳ Group | 0.070 | 0.035 | 0.105 | 0.900 | 0.006 |
|  | Between Subjects Effects | Pre-test | 0.049 | 0.049 | 0.038 | 0.846 | 0.001 |
|  |  | Group | 53.818 | 26.909 | 21.170 | < .001 | 0.547 |
| Other blame | Within Subjects Effects | TIME | 0.504 | 0.504 | 0.423 | 0.520 | 0.012 |
|  |  | TIME ✳ Pre-test | 0.268 | 0.268 | 0.225 | 0.638 | 0.006 |
|  |  | TIME ✳ Group | 18.951 | 9.475 | 7.947 | 0.001 | 0.312 |
|  | Between Subjects Effects | Pre-test | 16.750 | 16.750 | 18.921 | < .001 | 0.351 |
|  |  | Group | 65.460 | 32.730 | 36.973 | < .001 | 0.679 |
| Rumination | Within Subjects Effects | TIME | 2.669 | 2.669 | 2.234 | 0.144 | 0.060 |
|  |  | TIME ✳ Pre-test | 2.632 | 2.632 | 2.203 | 0.147 | 0.059 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | TIME ＊ Group | 0.711 | 0.355 | 0.297 | 0.745 | 0.017 |
| | Between Subjects Effects | Pre-test | 0.563 | 0.563 | 0.190 | 0.665 | 0.005 |
| | | Group | 76.500 | 38.250 | 12.925 | < .001 | 0.425 |
| Catastrophizing | Within Subjects Effects | TIME | 0.046 | 0.046 | 0.045 | 0.833 | 0.001 |
| | | TIME ＊ Pre-test | 0.034 | 0.034 | 0.033 | 0.857 | $9.471 \times 10^{-4}$ |
| | | TIME ＊ Group | 3.317 | 1.658 | 1.629 | 0.211 | 0.085 |
| | Between Subjects Effects | Pre-test | 2.620 | 2.620 | 1.207 | 0.280 | 0.033 |
| | | Group | 24.300 | 12.150 | 5.595 | 0.008 | 0.242 |
| Acceptance | Within Subjects Effects | TIME | 11.081 | 11.081 | 9.424 | 0.004 | 0.212 |
| | | TIME ＊ Pre-test | 10.761 | 10.761 | 9.152 | 0.005 | 0.207 |
| | | TIME ＊ Group | 1.133 | 0.567 | 0.482 | 0.622 | 0.027 |
| | Between Subjects Effects | Pre-test | 4.685 | 4.685 | 3.332 | 0.077 | 0.087 |
| | | Group | 52.188 | 26.094 | 18.558 | < .001 | 0.515 |
| Positive refocusing | Within Subjects Effects | TIME | 3.796 | 3.796 | 3.103 | 0.087 | 0.081 |
| | | TIME ＊ Pre-test | 3.905 | 3.905 | 3.193 | 0.083 | 0.084 |
| | | TIME ＊ Group | 4.948 | 2.474 | 2.022 | 0.148 | 0.104 |
| | Between Subjects Effects | Pre-test | 5.375 | 5.375 | 1.261 | 0.269 | 0.035 |
| | | Group | 32.120 | 16.060 | 3.767 | 0.033 | 0.177 |
| Positive reappraisal | Within Subjects Effects | TIME | 0.002 | 0.002 | $9.00 \times 10^{-4}$ | 0.976 | $2.572 \times 10^{-5}$ |
| | | TIME ＊ Pre-test | 0.002 | 0.002 | $9.53 \times 10^{-4}$ | 0.976 | $2.724 \times 10^{-5}$ |
| | | TIME ＊ Group | 0.075 | 0.038 | 0.021 | 0.979 | 0.001 |
| | Between Subjects Effects | Pre-test | 3.352 | 3.352 | 2.016 | 0.165 | 0.054 |
| | | Group | 24.401 | 12.200 | 7.336 | 0.002 | 0.295 |

According to the results of the covariance analysis presented in Table 3, the P-value for Between-Subjects Effects in Self-blame (F=21.170 , p<0.001), Rumination (F=12.925 , p<0.001), and Acceptance (F=18.558, p<0.001) variables was found to be significant. This shows that there was a significant distinction among the study groups when accounting for the impacts of the Pre-test stage. The significance was also observed for the Other blame variable (F=36.973, p<0.001), showing a significant difference between research groups. The Within-Subjects Effects for this variable also showed significance in the interactive effects between groups and stages (p=0.001). within-subject effects represent the variability of a particular value for individuals in a sample. Additionally, the Between-Subjects Effects for the Catastrophizing variable were found to be significant (p=0.008). The Within-Subjects Effects for the Acceptance variable over time also showed significance (p=0.004). The Positive Refocusing variable also showed significant Between-Subjects Effects (p=0.033). The Positive reappraisal variable demonstrated significant Between-Subjects Effects (p=0.002), highlighting a difference between research groups. Similarly, Eta squared showed moderate levels of between-group effects. Eta squared is a measure of effect size for

ANCOVA models. It is a standardized estimate of an effect size, meaning that it is comparable across outcome variables measured using different units. In essence,The Eta Squared values indicate the effect size of the intervention on each variable. For Self-blame, the Eta Squared value of 0.547 suggests a large effect size, indicating that the intervention accounted for a significant portion of the variance in the scores. For Rumination, the Eta Squared value of 0.425 indicates a moderate effect size, suggesting that the intervention had a moderate impact on reducing rumination. For Acceptance , the Eta Squared value of 0.515 indicates a moderate effect size.

In Table 4, the researcher analyzed the pairwise interaction effects between stages and groups for the Other blame component of the study.

The analysis presented in Table 4 indicates a significant positive relationship between resilience and both self-compassion and psychological well-being. Furthermore, self-compassion is shown to positively impact psychological well-being, with its mediating role between resilience and psychological well-being also demonstrating a significant positive effect. The research model accounts for 42% of the variance in psychological well-being and 36% in self-compassion.
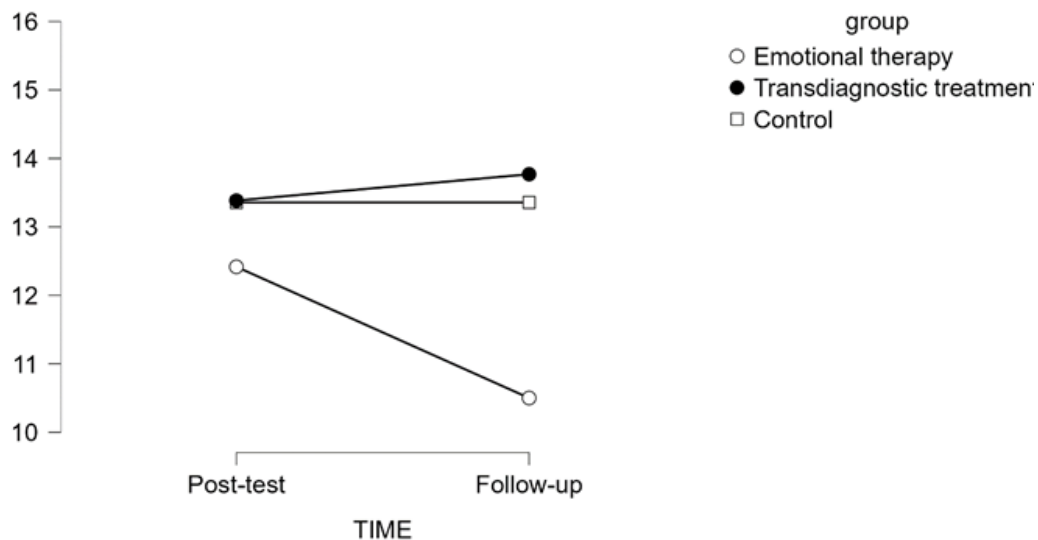
**Table 4**

*Post Hoc Comparisons - Group ✳ TIME*

| Variable | | | MD | SE | t | p$_{bonf}$ |
|---|---|---|---|---|---|---|
| Other blame | EFT, Post-test | Meta-diagnostic therapy, Post-test | -0.982 | 0.431 | -2.279 | 0.260 |
| | | Control, Post-test | -0.839 | 0.425 | -1.975 | 0.393 |
| | | EFT, Follow up | 1.924 | 0.446 | 4.313 | 0.001 |
| | | Meta-diagnostic therapy, Follow up | -1.357 | 0.409 | -3.314 | 0.021 |
| | | Control, Follow up | -0.855 | 0.403 | -2.120 | 0.329 |
| | Meta-diagnostic therapy, Post-test | Control, Post-test | 0.143 | 0.416 | 0.343 | 1.000 |
| | | EFT, Follow up | 2.906 | 0.407 | 7.131 | < .001 |
| | | Meta-diagnostic therapy, Follow up | -0.374 | 0.429 | -0.873 | 1.000 |
| | | Control, Follow up | 0.127 | 0.394 | 0.323 | 1.000 |
| | Control, Post-test | EFT, Follow up | 2.763 | 0.400 | 6.911 | < .001 |
| | | Meta-diagnostic therapy, Follow up | -0.517 | 0.392 | -1.318 | 1.000 |
| | | Control, Follow up | -0.016 | 0.414 | -0.038 | 1.000 |
| | EFT, Follow up | Meta-diagnostic therapy, Follow up | -3.280 | 0.384 | -8.552 | < .001 |
| | | Control, Follow up | -2.779 | 0.378 | -7.349 | < .001 |
| | Meta-diagnostic therapy, Follow up | Control, Follow up | 0.502 | 0.371 | 1.353 | 1.000 |

**Figure 3**

*Interaction effects between time and group in the Other blame variable*



A significant difference in the Other blame component between the EFT and control groups was observed in the follow-up phase, as shown in Table 6 and Figure 3 (p<0.001). The mean difference between the two groups suggested that the amount of Other blame statistically significant decrease in the EFT group. During the follow-up phase, there was no notable distinction between the Meta-diagnostic therapy group and the control group (p=1.000). However, there was a noticeable contrast between the EFT group and the Meta-diagnostic treatment group during the follow-up phase (p<0.001). The mean difference indicated that the amount of Other blame was statistically significant decrease in the EFT group compared to the Meta-diagnostic therapy group, suggesting that EFT was effective while Meta-diagnostic therapy was not. Additionally, a significant difference was noted in the EFT group between the post-test and follow-up stages, indicating the lasting effects of the EFT method. The EFT group showed significant improvements in emotional regulation (Self-blame, Other Blame, and Rumination) at both post-test and follow-up stages, compared to both the control group and the Meta-Diagnostic Therapy group. The researcher conducted pairwise comparisons between the research groups in Table 5.

**Table 5**

*Bonferroni's post hoc test to examine differences between groups*

| Variables | TIME | (I) Group | (J) Group | MD | Std. Error | P-value |
|---|---|---|---|---|---|---|
| Self-blame | Post-test | EFT | Meta-diagnostic therapy | -1.500* | 0.373 | 0.001 |
|  |  |  | Control | -1.934* | 0.373 | < .001 |
|  |  | Meta-diagnostic therapy | Control | -0.434 | 0.365 | 0.729 |
|  | Follow up | EFT | Meta-diagnostic therapy | -1.514* | 0.343 | < .001 |
|  |  |  | Control | -2.068* | 0.342 | < .001 |
|  |  | Meta-diagnostic therapy | Control | -0.554 | 0.336 | 0.322 |
| Rumination | Post-test | EFT | Meta-diagnostic therapy | -1.920* | 0.555 | 0.004 |
|  |  |  | Control | -2.098* | 0.550 | 0.002 |
|  |  | Meta-diagnostic therapy | Control | -0.178 | 0.545 | 1.000 |
|  | Follow up | EFT | Meta-diagnostic therapy | -2.374* | 0.601 | 0.001 |
|  |  |  | Control | -2.202* | 0.596 | 0.002 |
|  |  | Meta-diagnostic therapy | Control | 0.172 | 0.590 | 1.000 |
| Catastrophizing | Post-test | EFT | Meta-diagnostic therapy | -0.891 | 0.530 | 0.305 |
|  |  |  | Control | -0.584 | 0.524 | 0.818 |
|  |  | Meta-diagnostic therapy | Control | 0.308 | 0.510 | 1.000 |
|  | Follow up | EFT | Meta-diagnostic therapy | -1.795* | 0.482 | 0.002 |
|  |  |  | Control | -1.477* | 0.476 | 0.011 |
|  |  | Meta-diagnostic therapy | Control | 0.318 | 0.463 | 1.000 |
| Acceptance | Post-test | EFT | Meta-diagnostic therapy | 1.703* | 0.416 | 0.001 |
|  |  |  | Control | 1.978* | 0.410 | < .001 |
|  |  | Meta-diagnostic therapy | Control | 0.275 | 0.398 | 1.000 |
|  | Follow up | EFT | Meta-diagnostic therapy | 1.193 | 0.495 | 0.064 |
|  |  |  | Control | 1.982* | 0.488 | 0.001 |
|  |  | Meta-diagnostic therapy | Control | 0.788 | 0.474 | 0.316 |
| Positive refocusing | Post-test | EFT | Meta-diagnostic therapy | 0.895 | 0.720 | 0.666 |
|  |  |  | Control | 1.010 | 0.730 | 0.525 |
|  |  | Meta-diagnostic therapy | Control | 0.115 | 0.678 | 1.000 |
|  | Follow up | EFT | Meta-diagnostic therapy | 2.190* | 0.642 | 0.005 |
|  |  |  | Control | 1.732* | 0.650 | 0.035 |
|  |  | Meta-diagnostic therapy | Control | -0.459 | 0.604 | 1.000 |
| Positive reappraisal | Post-test | EFT | Meta-diagnostic therapy | 1.270 | 0.508 | 0.052 |
|  |  |  | Control | 1.315* | 0.503 | 0.039 |
|  |  | Meta-diagnostic therapy | Control | 0.045 | 0.483 | 1.000 |
|  | Follow up | EFT | Meta-diagnostic therapy | 1.113 | 0.552 | 0.155 |
|  |  |  | Control | 1.236 | 0.547 | 0.091 |
|  |  | Meta-diagnostic therapy | Control | 0.123 | 0.526 | 1.000 |

Based on Table 5, there was a significant difference in the variables of Self-blame and Rumination between the EFT group and the Meta-diagnostic therapy and control groups during the post-test and follow-up stages (P<0.01). However, the Meta-diagnostic therapy and control groups did not show a significant difference from each other (P>0.05). This indicates that EFT had an impact on Self-blame and Rumination, while Meta-diagnostic therapy was not effective. Regarding the Catastrophizing variable, there was a significant difference between the EFT group and the Meta-diagnostic therapy and control groups during the follow-up phase (P<0.01). Similarly, the Meta-diagnostic therapy and control groups did not differ significantly (P>0.05). Therefore, EFT affected Catastrophizing, whereas Meta-diagnostic therapy was not effective. A

notable difference was noted in the Acceptance variable between the EFT group and the Meta-diagnostic therapy group in the post-test and follow-up stages (P<0.01). Nevertheless, there was no significant distinction between the Meta-diagnostic therapy group and the control group (P>0.05).

The positive rejection variable was found to have a significant difference between the Emotional therapy group, the Transdiagnostic treatment group, and the control group only at the follow-up stage (P<0.01). However, there was no significant difference between the Transdiagnostic treatment group and the control group (P= 1.000). As a result, it can be confirmed that the emotional therapy intervention approach in the present study has an effect on the positive rejection variable and increases it, but transdiagnostic treatment was not

effective. The positive reappraisal variable was found to have a significant difference between the emotional therapy group and the control group only at the post-test stage (P= 0.039). However, there was no significant difference between the transdiagnostic treatment group and the control group (P= 1.000). As a result, it can be confirmed that the emotional therapy intervention approach in the present study has an effect on the positive reappraisal variable and increases it, but this effect was not lasting.

In summary, both Emotion-Focused Therapy (EFT) and Meta Diagnostic Therapy showed significant effects on emotion regulation in adolescents with BPD, with EFT proving more effective in reducing Self-blame, Other Blame, and Rumination. The Meta-Diagnostic Therapy approach showed more moderate improvements, particularly in Other Blame. There was no significant change in Positive Refocusing or Positive Reappraisal for either intervention.

Discussion and Conclusion

The current research was carried out to compare the effectiveness of an EFT approach and a meta-diagnostic protocol on emotion regulation in adolescents diagnosed with borderline disorder. The study found that EFT significantly reduced Other Blame, Self-Blame, Rumination, and Catastrophizing, while promoting higher levels of Acceptance, Positive Refocusing, and Positive Reappraisal. On the other hand, the meta-diagnostic therapy did not demonstrate considerable success in enhancing emotion control among the subjects.

The current study's results, which demonstrated the effectiveness of EFT on emotion regulation in adolescents with borderline personality disorder, are in line with previous research (Afsar et al., 2021; Babapour et al., 2023; Parham et al., 2023; Zarieh et al., 2023). Previous research has shown that EFT is effective in treating individuals with borderline personality disorder (Babapour et al., 2023). A study by Afsar et al. (2021) also found that EFT can be an effective treatment for borderline personality disorder (Afsar et al., 2021). Research has also shown that EFT can improve distress tolerance and CER (Parham et al., 2023). Additionally, a study found that EFT can enhance positive CER (Zarieh et al., 2023) On the other hand, Meta-Diagnostic Therapy

did not significantly improve emotion regulation in adolescents with BPD, which contrasts with previous studies suggesting its effectiveness in improving Cognitive Emotion Regulation (CER) and psychological resilience (Mozaffari et al., 2020; Rahimi & Bahramipour, 2024). Research has suggested that integrated meta-diagnostic therapy can effectively enhance CER and psychological resilience (Mozaffari et al., 2020). The study also found that integrated meta-diagnostic therapy enhances emotional awareness, CER, and negative mood (Rahimi & Bahramipour, 2024).

The discrepancy in findings between our study and previous research can be attributed to differences in study populations. For example, Mozaffari et al. (2020) focused on cognitive emotion regulation in adults, while our study targeted adolescents. Furthermore, Rahimi et al. (2024) studied the effects of meta-diagnostic therapy on anxious children, which might explain the differing results (Mozaffari et al., 2020). Variations in research methods and evaluation tools used in these studies could also contribute to these discrepancies (Mozaffari et al., 2020; Rahimi & Bahramipour, 2024). Emotion-focused therapy, which concentrates on processing emotions and coping mechanisms, aims to help individuals understand and manage their emotions effectively. This therapeutic approach is particularly beneficial for adolescents with borderline disorders, as it can assist in reducing negative emotions such as self-blame, rumination, and catastrophizing.

Several studies have indicated that this form of treatment has a notable impact on enhancing social relationships and diminishing negative emotions like blame and rumination (Timulak & Keogh, 2020). The meta-diagnostic approach addresses a wide range of psychological symptoms, such as anxiety and depression, common in various disorders. However, it may be less effective for BPD, which is marked by intense emotional instability. EFT, by contrast, specifically targets emotion regulation, making it more suited for adolescents with BPD, who often experience complex and fluctuating emotions (Pouladi et al., 2022). The disparity between these treatments might be related to the unique characteristics of Adolescents with borderline disorder and the specific nature of this disorder. Adolescents with BPD often experience extreme emotional highs and lows, making traditional therapies that focus on general psychological symptoms less effective. EFT, however, is

designed to address and process these intense emotions, which is why it may be more effective in managing the emotional dysregulation characteristic of BPD (Hatamian et al., 2023; Javidnia et al., 2022). In contrast, the effectiveness of Meta-Diagnostic Therapy was less pronounced, which warrants further investigation into its potential limitations for BPD treatment.

Despite the significant implications of the current study, it is important to acknowledge certain limitations. First, the research was conducted on Iranian adolescents with borderline personality disorder, which limits the generalizability of the findings to other cultural contexts. Future studies should consider conducting multicenter research in diverse regions and populations to improve the external validity of the results. Additionally, the reliance on self-reports for data collection raises concerns about the potential biases introduced by the subjective nature of self-reported emotional experiences. Incorporating observational data or indirect measurement tools in future research could enhance the reliability and validity of the findings. Another limitation of this study is the lack of control over variables such as the presence of teachers, the commuting of other students during measurement, and various social and cultural factors within families. Future studies should aim to control these variables and create environments free from interference. Moreover, cultural influences can affect emotion regulation and response to treatment, making it important to adapt treatment protocols and data analysis methods to different cultural contexts. **"Performing research with larger and more diverse geographic and cultural groups is recommended to improve the applicability of the findings."**

In conclusion, Emotion-Focused Therapy (EFT) has shown significant effectiveness in improving emotion regulation in adolescents with Borderline Personality Disorder. However, Meta Diagnostic Therapy did not lead to significant improvements in emotional adjustment or regulation. These findings suggest that therapists should consider tailoring interventions to the emotional needs of adolescents with BPD, with EFT potentially offering a more targeted approach. The results of this study offer valuable insights for clinicians working with adolescents with BPD, guiding future treatment choices for this challenging condition. "Tailoring treatments to address the unique emotional needs of these individuals can lead to more rapid and effective recovery." Emotion-focused therapy, which targets particular emotions, can be extremely beneficial for adolescents coping with complex emotional problems." Based on the study's outcomes, it is advisable to prioritize emotion-focused therapy for adolescents with borderline personality disorders who require assistance with emotion regulation. The recommendation is to concentrate on personalized interventions tailored to the unique characteristics of each adolescent to enhance the effectiveness of treatment, instead of depending only on group therapy sessions. Given these findings, clinicians should carefully consider the emotional regulation challenges faced by adolescents with BPD and select interventions accordingly.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

All authors equally contributed to this study.

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