KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 17 July 2025
Revised 12 November 2025
Accepted 18 November 2025
Initial Published 18 November 2025
Final Publication 01 January 2026

KMAN Counseling & Psychology Nexus

Volume 4, pp 1-11

E-ISSN: 3041-9026

Effectiveness and Comparison of Transdiagnostic Therapy and Cognitive–Behavioral Therapy on Positive Meta-Emotions in Pregnant Women

Masoumeh. Vatandoost[1], Reza. Khakpour[2*], Rahim. Davari[3]

[1] Ph.D. Student in General Psychology, Department of Psychology, Ro.C., Islamic Azad University, Roudehen, Iran
[2] Department of Counseling, Ro.C., Islamic Azad University, Roudehen, Iran
[3] Department of Psychology, Ro.C., Islamic Azad University, Roudehen, Iran

*** Corresponding author email address**: reza.khakpour@iau.ac.ir

A r t i c l e I n f o

Article type:
Original Research
Section:
Clinical Psychology

How to cite this article:
Vatandoost, M., Khakpour, R., & Davari, R. (2026). Effectiveness and Comparison of Transdiagnostic Therapy and Cognitive–Behavioral Therapy on Positive Meta-Emotions in Pregnant Women. *KMAN Conseling and Psychology Nexus, 4*, 1-11.
http://doi.org/10.61838/kman.cp.psynexus.4773

A B S T R A C T

This study examined and compared the effectiveness of transdiagnostic therapy and cognitive–behavioral therapy on positive meta-emotions in pregnant women. The research employed an experimental design with pretest, posttest, and three-month follow-up measurements, along with a control group. The statistical population consisted of pregnant women who visited District 14 of Tehran between February 2025 and April 2025. A sample of 45 participants (15 in each group: transdiagnostic therapy, cognitive–behavioral therapy, and control) was selected using convenience and random sampling. The interventions consisted of eight weekly 90-minute sessions of transdiagnostic therapy and cognitive–behavioral therapy. The research instrument was the Meta-Emotion Scale (Mitmansgruber, 2009). Data were analyzed using repeated-measures ANOVA (with Greenhouse–Geisser correction due to violation of Mauchly's test of sphericity), Shapiro–Wilk test, Levene's test, and Bonferroni post hoc test in SPSS-27. Statistical assumptions (normality and homogeneity of variances) were confirmed. Both interventions produced significant effects on increasing positive meta-emotions compared to the control group, and follow-up results indicated stability of therapeutic effects. The Bonferroni test confirmed posttest and follow-up differences between the experimental groups and the control group ($p < .05$), although no significant difference was observed between transdiagnostic therapy and cognitive–behavioral therapy ($p < .05$). The effect of time was significant for all three variables ($p < .001$). The findings indicated that both transdiagnostic therapy and cognitive–behavioral therapy are effective and durable in improving positive meta-emotions, with neither demonstrating superiority over the other. These findings highlight the applicability of both approaches in pregnancy-related interventions. It is recommended that future studies focus on long-term follow-up and larger sample sizes.

Keywords: *Transdiagnostic therapy, cognitive–behavioral therapy, positive meta-emotions, pregnant women.*

1. Introduction

Pregnancy represents one of the most psychologically sensitive and neurobiologically dynamic periods in a woman's life, marked by significant emotional, cognitive, hormonal, and social transitions. These transformations create both opportunities for emotional enrichment and vulnerabilities to mental health difficulties. A large body of evidence demonstrates that psychological distress during pregnancy—including anxiety, depression, heightened stress sensitivity, and maladaptive emotion-regulation patterns—has substantial consequences for both maternal and infant well-being (Dunkel Schetter & Tanner, 2012; Kingston et al., 2014). These outcomes extend beyond transient emotional discomfort, influencing obstetric complications, fetal development, postpartum adjustment, and long-term child behavioral trajectories (Lähdepuro et al., 2023). Given the profound interconnection between maternal emotional functioning and child outcomes, research in recent years has increasingly emphasized strengthening positive emotion-regulation processes during pregnancy rather than merely reducing psychopathology (Nakamura et al., 2018). Within this emerging paradigm, the construct of positive meta-emotions—defined as individuals' thoughts, evaluations, and attitudes toward their own positive emotional states—has gained increasing attention in psychological science.

Meta-emotions are conceptualized as second-order emotional processes involving how individuals interpret, respond to, and regulate their emotional experiences (Gottman et al., 1996). Positive meta-emotions, in particular, pertain to one's capacity to appreciate, amplify, and integrate positive emotional states such as joy, hope, gratitude, and calmness into daily functioning. Evidence suggests that these processes not only support adaptive psychological functioning but also buffer against stress and emotional dysregulation (Meshram & Jaiswal, 2022). In pregnancy, where stress levels often fluctuate in response to physical changes, interpersonal shifts, and anticipatory concerns regarding childbirth and parenthood, positive meta-emotions may serve as a crucial psychological resource. Research indicates that positive emotional attitudes during pregnancy are associated with healthier fetal development, improved hormonal profiles, and enhanced postpartum bonding (Nakamura et al., 2018). Conversely, difficulties in meta-emotional appraisal—such as negative judgments about emotional expression or avoidance of positive affect—are associated with heightened distress and reduced psychological resilience (Haradhvala, 2016; Hogeveen & Grafman, 2021).

Emotion-regulation difficulties have long been recognized as core features underlying diverse emotional disorders. Meta-analytic and theoretical work demonstrates that maladaptive emotional-regulation strategies—including avoidance, rumination, suppression, and worry—contribute substantially to anxiety, depression, and stress across diagnostic categories (Aldao et al., 2010). These findings have inspired a shift in clinical science toward transdiagnostic frameworks that target underlying emotional processes rather than disorder-specific symptom clusters. The unified protocol and other transdiagnostic approaches propose that addressing shared mechanisms—particularly deficient emotion regulation—may produce broad therapeutic benefits across co-occurring conditions (Barlow, 2011; Norton & Roberge, 2017). This conceptualization is highly relevant for pregnant women, who often experience overlapping symptoms of anxiety and depression, fluctuating stress responses, and heightened emotional reactivity (Chauhan & Potdar, 2022). In this regard, transdiagnostic interventions have shown particular promise in addressing emotional vulnerabilities in perinatal populations (Dalgleish et al., 2020).

Transdiagnostic therapy has been evaluated in various clinical and subclinical populations, and its advantages have been widely documented. It emphasizes emotional awareness, cognitive flexibility, reduced emotional avoidance, and adaptive behavioral responses. Recent evidence demonstrates its utility in improving emotional functioning among pregnant women and other vulnerable groups. For example, integrated transdiagnostic therapy delivered online significantly reduced emotional distress and enhanced mindfulness and meta-emotional functioning among pregnant women (Goodarzi et al., 2021). Other studies confirm its efficacy for individuals experiencing emotional disorders, infertility-related stress, and complex comorbid conditions (Kargar et al., 2023; Mirtabar et al., 2024). Systematic reviews further highlight its broad effectiveness across anxiety, depression, and related disorders (Schaeuffele et al., 2024). Emerging digital transdiagnostic interventions for perinatal and postnatal women also show encouraging feasibility and outcomes (Roberge et al., 2025). Importantly, a major advantage of transdiagnostic therapy is its capacity to simultaneously target multiple psychological processes that are highly relevant during pregnancy, such as emotional acceptance, flexible cognitive appraisal, and adaptive coping (Mousavi

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

et al., 2023). These mechanisms are closely linked to the development and reinforcement of positive meta-emotions, making the transdiagnostic approach particularly suited for enhancing emotional well-being during pregnancy.

Cognitive-behavioral therapy (CBT), another well-established evidence-based intervention, has long been considered the gold standard treatment for a wide range of emotional disorders. CBT is grounded in the principle that dysfunctional thoughts and cognitive biases strongly influence emotional experiences and behavioral patterns (Beck, 2021). By modifying maladaptive thought patterns and reinforcing adaptive behaviors, CBT aims to reduce emotional distress and improve coping capacities. Numerous systematic reviews confirm its effectiveness for perinatal depression, anxiety, and stress, with both face-to-face and digital CBT demonstrating significant clinical benefits (Li et al., 2022; Pettman et al., 2023; Wan Mohd Yunus et al., 2022). In clinical practice, CBT has been widely applied to pregnant populations to address anxiety symptoms, intrusive worries, fear of childbirth, and mood instability. Moreover, CBT's structured, skills-based format—emphasizing thought monitoring, cognitive restructuring, and behavioral activation—makes it highly accessible and suitable for group-based interventions often offered in prenatal health settings (Tolin, 2024).

Although CBT and transdiagnostic therapy both target emotion-regulation processes, they differ in conceptual emphasis and applied mechanisms. Transdiagnostic therapy emphasizes emotional exposure, emotional awareness, experiential acceptance, and reductions in avoidance behaviors. CBT, by contrast, places stronger emphasis on cognitive restructuring and behavioral modification. These differences may have distinct implications for the development of positive meta-emotions during pregnancy. For instance, enhancing emotional awareness and reducing avoidance (core components of transdiagnostic therapy) may facilitate healthier engagement with positive affective experiences and contribute to the ability to appreciate or sustain them (Mitmansgruber et al., 2009). Similarly, cognitive restructuring—central to CBT—may reduce negative appraisals of positive emotions, such as guilt over feeling happy or anxiety about expressing joy, thereby supporting more adaptive meta-emotional patterns (Koush et al., 2019). The conceptual link between cognitive-behavioral processes and positive emotional engagement is further supported by research showing that cognitive flexibility enhances emotional reactivity to positive events (LaBar & Cabeza, 2020) and promotes greater integration of positive affective experiences (Branjerdporn et al., 2017).

Furthermore, the broader literature on psychological functioning during pregnancy underscores that emotional experience is shaped not only by stress or psychopathology but also by the presence and regulation of positive emotions. Positive psychological processes play a critical role in maternal resilience, stress recovery, and interpersonal functioning, particularly in the context of childbirth preparation and early motherhood (Lähdepuro et al., 2023). Positive meta-emotions contribute to strengthening emotional bonding with the fetus, improving coping with pregnancy-related physical discomfort, reducing perceived pain during labor, and enhancing postpartum adjustment (Nakamura et al., 2018). Conversely, negative meta-emotions—such as guilt or shame about emotional expression—may intensify distress and contribute to maladaptive coping (Haradhvala, 2016). Research also suggests that the ability to activate and sustain positive meta-emotions is linked to emotional intelligence and overall psychological functioning (Rezaei et al., 2014). Therefore, interventions that effectively enhance positive meta-emotions may serve as protective factors against perinatal stress and emotional dysregulation.

Despite this growing body of evidence, little is known about the comparative effectiveness of transdiagnostic therapy and CBT specifically on positive meta-emotions in pregnant women. While existing studies support the general efficacy of both therapies for improving emotional well-being and reducing psychological distress, few investigations have directly examined their impact on second-order emotional processes such as meta-emotional attitudes, emotional appraisals, and positive emotion regulation. This gap is particularly notable given that pregnancy represents a period in which emotional processing plays a foundational role in shaping maternal behaviors, mother–infant attachment, and long-term developmental outcomes in children. Furthermore, as transdiagnostic therapy becomes more widely implemented in clinical practice and digital health platforms, understanding how its outcomes compare with the well-established CBT framework is essential for informing evidence-based approaches for prenatal mental health care (Roberge et al., 2025; Schaeuffele et al., 2024).

Addressing this gap is especially relevant in psychological services for pregnant women in Iran, where research on meta-emotions remains limited and where interventions to enhance emotional functioning are

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

increasingly needed given rising rates of perinatal anxiety and stress. Recent local studies highlight the importance of Farahijan (meta-emotional functioning) in predicting psychological adjustment and regulating stress responses (Eskandari, 2019). Yet, despite its significance, interventions targeting positive meta-emotions during pregnancy remain scarce. Existing evidence demonstrates that both transdiagnostic therapy and CBT can improve emotion regulation, resilience, and quality of life in diverse populations, including children, adolescents, and women facing infertility or pregnancy complications (Kargar et al., 2023; Mousavi et al., 2023). However, whether these improvements extend to positive meta-emotional capacities among pregnant women has yet to be systematically explored.

Given these considerations, there is a clear need for research that directly compares transdiagnostic therapy and CBT in their ability to enhance positive meta-emotions during pregnancy. Understanding their relative effectiveness may help clinicians select the most appropriate intervention for promoting emotional well-being in this uniquely sensitive period. Therefore, the aim of this study is to compare the effectiveness of group-based transdiagnostic therapy and group-based cognitive-behavioral therapy on positive meta-emotions among pregnant women.

2. Methods and Materials

2.1. Study Design and Participants

The present study was an experimental research project using a pretest–posttest design with a three-month follow-up and a control group. In terms of purpose, this study was applied; in terms of data collection, it was experimental; and regarding data type, it belonged to quantitative research. The statistical population consisted of pregnant women who visited District 14 of Tehran in 2025. Among the target population—189 pregnant women who referred to the Tasnim Center in Aahang Neighborhood, District 14, between February 2025 and April 2025—45 women who volunteered and met the inclusion criteria were selected using convenience sampling and randomly assigned to three groups of 15 participants each. The study consisted of two experimental groups and one control group. The first experimental group received eight weekly 90-minute sessions of transdiagnostic therapy, and the second experimental group received eight weekly 90-minute sessions of cognitive–behavioral therapy. The control group was placed on a waiting list. Intervention sessions were held at the Aahang Neighborhood Community Center in District 14 of Tehran.

Inclusion Criteria

• Pregnant women visiting District 14 of Tehran.

• Gestational age of at least 12 weeks and no more than 28 weeks.

• Willingness and informed consent to participate in the study.

• Ability to attend weekly therapeutic sessions.

• Absence of severe mental disorders (based on screening session or self-report).

• No simultaneous participation in other psychological treatments during the study period.

Exclusion Criteria

• Absence from more than two intervention sessions.

• Voluntary withdrawal at any stage of the study.

• Development of severe physical or psychological illness during the study, preventing further participation.

• Failure to complete the pretest, posttest, or follow-up questionnaires.

The statistical population consisted of pregnant women who visited the Tasnim Center in Aahang Neighborhood, District 14 of Tehran, between February 2025 and April 2025. Among the 189 pregnant women in this period, 45 participants who met the inclusion criteria and voluntarily provided consent were selected through convenience sampling. They were then randomly assigned to three equal groups of 15 participants: two experimental groups and one control group. Sampling was conducted in a way that ensured participants could attend weekly therapeutic sessions and had no severe mental disorders or concurrent treatments. Participant assessments occurred at three stages: pretest, immediately after the intervention sessions (posttest), and three months after the end of interventions (follow-up). At each stage, all participants in the experimental and control groups were assessed using the standardized Meta-Emotion Scale. These assessments aimed to evaluate the impact of transdiagnostic and cognitive–behavioral therapies on the study variables. The control group received no intervention during the study and remained on the waiting list; however, after data collection at the follow-up stage, they received the transdiagnostic therapy intervention for ethical considerations.

2.2. Measures

Meta-Emotion Scale: One of the validated tools for assessing individuals' attitudes and emotional regulation

KMAN-CPN KMAN-Counseling & Psychology Nexus E-ISSN: 3041-9026

toward their own emotions, designed by Mitmansgruber et al. in 2009. This scale includes 20 items scored on a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). It evaluates three core components of meta-emotion: emotional awareness, emotional acceptance, and emotion regulation. The construct validity of this instrument has been supported through confirmatory factor analysis and convergent validity with related scales, and its reliability has been reported with Cronbach's alpha ranging from .80 to .90 for the total scale (Mitmansgruber et al., 2009). In Iran, Rezaei et al. (2014) reported reliability using Cronbach's alpha at .78 and confirmed two main dimensions of positive and negative meta-emotions through factor analysis. They also assessed concurrent validity with the Emotional Intelligence Scale and found desirable correlations, particularly between positive meta-emotions and emotional intelligence components. In the present study, reliability of the measurement tool was calculated using Cronbach's alpha, which yielded .71, indicating acceptable reliability for the sample.

2.3. Interventions

The transdiagnostic intervention followed a 12-session group protocol based on Harvey et al. (2004), beginning with familiarizing participants with treatment goals, expectations, and the fundamental importance of emotion regulation. Early sessions focused on emotion education, helping participants identify emotional cues in daily life and recognize maladaptive cognitive patterns associated with anxiety and stress. Subsequent sessions emphasized cognitive strategies for challenging negative thoughts, followed by training in basic emotion-regulation skills such as deep breathing, relaxation, and mindfulness practices. The protocol then addressed stress- and anxiety-management techniques, including effective coping strategies and resilience-building methods to enhance psychological endurance under pressure. Additional sessions targeted problem-solving and decision-making skills, alongside methods for identifying and controlling intense emotional reactions to prevent maladaptive behaviors. Communication skills, help-seeking strategies, and strengthening social support networks were also taught. The final sessions involved reviewing learned skills, practicing their application in real-life situations, and developing personalized maintenance plans to prevent relapse and sustain therapeutic gains.

The cognitive–behavioral therapy (CBT) protocol, adapted from Beck (2011), consisted of 12 structured group sessions beginning with an introduction to CBT principles, treatment goals, and the triangle linking thoughts, emotions, and behaviors. Early sessions trained participants to identify negative automatic thoughts and monitor emotional and cognitive responses to stressful situations using structured thought-record tools. Mid-treatment sessions centered on evaluating the accuracy of negative thoughts through cognitive restructuring techniques, replacing distorted cognitions with more realistic and adaptive alternatives. Participants then learned behavioral coping skills, including exposure-based strategies to reduce avoidance, followed by instruction in relaxation techniques such as diaphragmatic breathing and progressive muscle relaxation to decrease physiological arousal. Further sessions focused on emotional management, regulating behavioral responses to stress, and strengthening problem-solving skills for everyday challenges. Positive activity scheduling and motivation-enhancing strategies were added to foster constructive behaviors. In the final stages, all cognitive and behavioral skills were reviewed and practiced to enhance self-efficacy, and each participant developed an individualized maintenance plan aimed at consolidating treatment achievements and preventing symptom relapse.

2.4. Data analysis

Statistical analysis was conducted at descriptive and inferential levels. At the descriptive level, means and standard deviations were used, and at the inferential level, repeated-measures ANOVA was employed. Assumptions were examined using appropriate tests such as the Shapiro–Wilk test, Levene's test, and Mauchly's test. Data analysis was performed using SPSS version 27.

3. Findings and Results

The mean age of participants in the transdiagnostic therapy, cognitive–behavioral therapy, and control groups was 31.27, 30.8, and 30.2 years, respectively, and no significant difference was found between the groups' mean ages. Regarding educational level, in the transdiagnostic therapy group, 26.7% had less than a high school diploma, 26.7% had a high school diploma, 33.3% had an associate degree, and 13.3% held a bachelor's degree or higher. In the cognitive–behavioral therapy group, 31.3% had less than a high school diploma, 6.7% had a diploma, 18.8% had an associate degree, and 43.8% had a bachelor's degree or

KMAN-CPN KMAN-Counseling & Psychology Nexus E-ISSN: 3041-9026

higher. In the control group, 6.7% had less than a diploma, 46.7% had a diploma, 26.7% had an associate degree, and 20% had a bachelor's degree or higher. Additionally, the majority of women in all three groups were in their first pregnancy (46.7% in transdiagnostic therapy, 56.3% in cognitive–behavioral therapy, and 66.7% in the control group), with the percentages for second, third, and fourth pregnancies decreasing accordingly.

Table 1 presents the mean and standard deviation of positive meta-emotions among participants across study groups in the pretest, posttest, and follow-up stages.

Table 1

Mean and Standard Deviation of Positive Meta-Emotions by Study Group (Pretest, Posttest, Follow-up)

Assessment Stage	Transdiagnostic TherapyMean	SD	Cognitive-Behavioral TherapyMean	SD	ControlMean	SD	TotalMean	SD
Pretest	44.07	10.26	45.20	13.77	46.27	6.20	45.18	10.34
Posttest	54.80	8.95	54.87	11.21	46.07	6.52	51.91	9.82
Follow-Up	55.07	8.65	55.27	10.51	45.73	6.55	52.02	9.64

To examine the effectiveness of the two therapeutic methods and test the study hypothesis, parametric statistical assumptions were first evaluated as reported below.

To assess normality of the distribution, the Shapiro–Wilk test was used; results indicated that all studied variables across all groups and levels were normally distributed (at the significance level of .01). Additionally, Levene's test was used to assess homogeneity of variances in the posttest, and the nonsignificant result for positive meta-emotions confirmed equality of variances among groups. To evaluate the assumption of equality of covariance matrices for repeated-measures data, Mauchly's test of sphericity was conducted, indicating violation of this assumption; therefore, the Greenhouse–Geisser correction was applied to adjust degrees of freedom appropriately.

Given that parametric assumptions were met, repeated-measures ANOVA was used to test the hypotheses.

Table 2 presents the repeated-measures ANOVA results with adjusted degrees of freedom for examining the main effects of group, time, and the interaction between time and group on pregnant women's positive meta-emotions.

Table 2

Results of Repeated-Measures ANOVA for Main and Interaction Effects on Positive Meta-Emotions Among Pregnant Women

Source of Variation	SS	df	MS	F	p	Effect Size
Group Effect	919.75	2	459.87	1.84	.172	.08
Time Effect	1382.95	1.41	981.92	70.01	< .001	.62
Time × Group Interaction	775.32	2.82	275.25	19.62	< .001	.48

Table 2 shows that the main effect of time was significant ($p < .001$), while the main effect of group was not significant ($p = .172$). Additionally, the interaction effect of time and group was significant ($p < .001$). The significant effect of time indicates meaningful differences between pretest, posttest, and follow-up scores. The effect size for the group main effect suggests that 8% of the variance in positive meta-emotions among pregnant women is attributable to group membership. The effect size for the time main effect indicates that 62% of variance in positive meta-emotions is due to temporal changes. The effect size for the interaction between time and group shows that 48% of variance in positive meta-emotions results from temporal variation in at least one group level.

To investigate pairwise differences in mean positive meta-emotions across the three assessment stages, the Bonferroni post hoc test was used, as shown in Table 3.

Table 3

Bonferroni Test Results for Positive Meta-Emotions Among Pregnant Women

Reference Stage	Comparison Stage	Mean Difference	Standard Error	p
Pretest	Posttest	–6.73	0.78	< .001

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

	Follow-Up	–6.84	0.75	< .001
Posttest	Follow-Up	–0.11	0.39	1.00

As shown in Table 3, the difference between pretest and posttest was significant ($p < .001$). Based on the mean differences, posttest scores increased substantially compared to pretest scores. Furthermore, the difference between posttest and follow-up was not significant ($p = 1.00$), indicating stability of changes.

Since the group effect was calculated using the combined scores of the three assessment stages and the main effects of time and group as well as their interaction were significant, a more detailed examination of differences among the three groups was conducted using Bonferroni post hoc tests across all stages. Table 4 presents the differences in mean positive meta-emotions across the three assessment stages among the three groups.

Table 4

Group Differences in Mean Positive Meta-Emotions Among Pregnant Women Across Three Assessment Stages

Stage	Group I	Group J	Mean Difference (I–J)	Standard Error	p
Pretest	Transdiagnostic	Cognitive-Behavioral	–1.13	3.85	1.00
Pretest	Transdiagnostic	Control	–2.20	3.85	1.00
Pretest	Cognitive-Behavioral	Control	–1.07	3.85	1.00
Posttest	Transdiagnostic	Cognitive-Behavioral	–0.07	3.32	1.00
Posttest	Transdiagnostic	Control	8.73	3.32	.036
Posttest	Cognitive-Behavioral	Control	8.80	3.32	.034
Follow-Up	Transdiagnostic	Cognitive-Behavioral	–0.20	3.18	1.00
Follow-Up	Transdiagnostic	Control	9.33	3.18	.016
Follow-Up	Cognitive-Behavioral	Control	9.53	3.18	.014

As shown in Table 4, Bonferroni post hoc results indicated no significant differences among the study groups (transdiagnostic therapy, cognitive–behavioral therapy, and control) in the pretest stage for positive meta-emotions. However, in the posttest and follow-up stages, significant differences were found between both treatment groups and the control group ($p < .05$). In other words, referring to the mean scores, the level of positive meta-emotions among pregnant women in both experimental groups (transdiagnostic therapy and cognitive–behavioral therapy) increased markedly in the posttest and follow-up stages compared to the control group. Additionally, results showed no significant differences in mean positive meta-emotions between the two treatment groups across pretest, posttest, and follow-up ($p > .05$).

Therefore, in response to the research hypothesis, results indicated that both experimental groups were effective and durable in increasing positive meta-emotions among pregnant women; however, their effectiveness did not differ significantly. Hence, the study hypothesis is rejected.

4. Discussion and Conclusion

The findings of the present study demonstrated that both transdiagnostic therapy and cognitive–behavioral therapy (CBT) significantly enhanced positive meta-emotions among pregnant women, with improvements sustained throughout the three-month follow-up period. These results, which indicated no statistically significant difference between the two therapeutic approaches, correspond to the broader literature emphasizing the central role of emotional regulation mechanisms in perinatal psychological functioning. Emotional processes during pregnancy are critically shaped by cognitive appraisals, emotional flexibility, and the ability to tolerate and regulate both positive and negative affective states (Dunkel Schetter & Tanner, 2012; Kingston et al., 2014). Consistent with these perspectives, the present results highlight that interventions rooted in strengthening emotion regulation—whether through a transdiagnostic framework or cognitive restructuring methods—effectively enhance meta-emotional capacities in this vulnerable population.

The observed improvement in positive meta-emotions across both treatment groups aligns with theoretical accounts suggesting that meta-emotional evaluation plays a central role in affective functioning. Meta-emotions shape how individuals interpret their internal emotional experiences, influencing whether emotional states are accepted, suppressed, amplified, or integrated into adaptive coping

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

behaviors (Gottman et al., 1996). Positive meta-emotions, in particular, contribute to resilience, psychological flexibility, and stress recovery—all of which are vital for maternal well-being during pregnancy (Meshram & Jaiswal, 2022; Nakamura et al., 2018). This study's finding that transdiagnostic and CBT interventions increased positive meta-emotions supports the view that interventions targeting emotional awareness, cognitive appraisal, and experiential acceptance meaningfully modify pregnant women's capacity to respond constructively to their emotional experiences.

The outcomes related to the transdiagnostic intervention are congruent with the theoretical foundation of unified and integrative transdiagnostic models, which emphasize shared emotional mechanisms across psychiatric symptoms (Barlow, 2011; Dalgleish et al., 2020; Norton & Roberge, 2017). These models argue that maladaptive emotional responses—including avoidance, suppression, and heightened threat perception—contribute to emotional disorders across diagnoses. By targeting these mechanisms, transdiagnostic therapy intends to increase emotional awareness and reduce patterns of experiential avoidance. Research has repeatedly shown its efficacy in reducing anxiety, depression, and distress in various populations, including perinatal women (Goodarzi et al., 2021; Kargar et al., 2023; Mirtabar et al., 2024). The present study's findings reaffirm these observations by showing significant gains in positive meta-emotional functioning in pregnant women undergoing transdiagnostic treatment. The maintenance of therapeutic gains at follow-up further aligns with earlier systematic reviews demonstrating that transdiagnostic interventions produce durable changes in emotional functioning (Schaeuffele et al., 2024).

Similarly, the positive effects of CBT on meta-emotional functioning are aligned with previous work showing the efficacy of cognitive restructuring, behavioral activation, and exposure techniques in modifying distorted cognitions and maladaptive emotional responses (Beck, 2021; Tolin, 2024). Numerous meta-analyses and systematic reviews confirm that CBT is one of the most effective treatments for perinatal depression, anxiety, and stress (Li et al., 2022; Pettman et al., 2023; Wan Mohd Yunus et al., 2022). Although the present study's primary outcome focused on positive meta-emotions rather than psychopathology, the findings support the hypothesis that CBT's influence on cognitive appraisal and emotional awareness naturally extends to higher-order emotional processes such as meta-emotional evaluation. The increase in positive meta-emotions following CBT is consistent with evidence indicating that cognitive restructuring reduces negative meta-beliefs about emotions and supports more adaptive emotional regulation (Haradhvala, 2016; Koush et al., 2019).

The similarity of outcomes between the two treatments suggests that both may affect emotional processes through partially overlapping mechanisms. While transdiagnostic therapy emphasizes emotional exposure, acceptance, and reduction of avoidance behaviors, CBT centers on cognitive reframing and modification of dysfunctional beliefs. Despite these procedural differences, both interventions enhance emotional awareness and foster adaptive self-evaluation, which are essential components of positive meta-emotions. Theoretical accounts on emotional memory and affective neuroscience support this overlap. For example, emotional experiences are encoded, retrieved, and integrated through networks involving both cognitive and emotional processing regions (LaBar & Cabeza, 2020). Interventions that modify either cognitive appraisals or emotional responses may therefore converge in their effects on meta-emotional functioning. This may help explain why both transdiagnostic and CBT interventions produced equivalent improvements in the present study.

Additionally, the findings resonate with growing recognition that perinatal mental health cannot be adequately addressed through disorder-specific interventions alone. Pregnancy involves complex emotional transitions influenced by biological, psychological, and environmental factors. High comorbidity rates of anxiety and depression in pregnant women further underscore the need for approaches that address underlying emotional vulnerabilities rather than surface symptoms (Abdelhafez et al., 2023; Chauhan & Potdar, 2022). Transdiagnostic therapy is designed specifically for such complexity, as it targets common emotional mechanisms. CBT, in turn, provides structured strategies to modify dysfunctional thoughts and behaviors. The success of both interventions in improving meta-emotions suggests that the perinatal period may benefit from a flexible range of therapeutic approaches, provided they robustly target emotion regulation.

The improvement in positive meta-emotions is particularly important considering the strong predictive relationship between maternal emotional functioning and child developmental outcomes. Positive emotional states during pregnancy are associated with healthier fetal development, better maternal–infant bonding, and reduced risk of postpartum depression (Lähdepuro et al., 2023; Nakamura et al., 2018). Strengthening positive meta-

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

emotions may therefore serve as a protective maternal resource. Moreover, meta-emotions influence parenting behaviors and emotional socialization practices after childbirth (Branjerdporn et al., 2017; Johnson, 2023). By enhancing pregnant women's internal representations of emotion, both interventions may contribute to healthier family dynamics during the postpartum period.

The absence of significant differences between the two treatments suggests that both approaches can be applied effectively within prenatal settings. This aligns with literature showing the general equivalence of different evidence-based psychotherapies when they target common therapeutic mechanisms. For example, systematic reviews comparing transdiagnostic and CBT approaches often conclude that both yield comparable outcomes for emotional disorders (Mousavi et al., 2023; Schaeuffele et al., 2024). The present findings extend this equivalence to meta-emotional outcomes during pregnancy.

It is also noteworthy that positive meta-emotions increased significantly in both treatment groups compared with the control group, which showed no meaningful change. This emphasizes the need for structured psychological interventions in maternal health services and illustrates that such improvements do not occur automatically as part of the pregnancy experience. Contrary to earlier assumptions that pregnancy naturally enhances emotional well-being, contemporary research shows that many women experience heightened stress, emotional instability, or decreased emotional confidence during this period (Chauhan & Potdar, 2022; Dunkel Schetter & Tanner, 2012). The present results highlight that deliberate interventions are necessary to strengthen emotional resources such as positive meta-emotions.

Finally, the outcomes of this study support the relevance of meta-emotions as a meaningful psychological construct in perinatal mental health research. The concept, which originated from work on family emotional life (Gottman et al., 1996), has more recently been integrated into models of emotional regulation (Mitmansgruber et al., 2009) and stress tolerance (Eskandari, 2019). The successful modification of positive meta-emotions through both therapeutic approaches in this study demonstrates the potential for integrating meta-emotional measures into routine perinatal mental health screenings and interventions.

The study was limited by its relatively small sample size, which may reduce the generalizability of the findings. The use of self-report questionnaires introduces the possibility of response biases, especially in a population sensitive to psychological evaluation. The intervention was delivered in group format, which may influence individual outcomes due to group dynamics, peer interaction, or differences in participation. Additionally, the follow-up period was limited to three months, preventing assessment of long-term sustainability of treatment effects. The study also relied on a convenience sampling method drawn from a single urban region, which may not fully represent pregnant women from other demographic, cultural, or socioeconomic contexts. Furthermore, the absence of an active control condition limits interpretation of whether improvements were due to therapeutic content or nonspecific treatment factors.

Future studies should incorporate larger and more diverse samples drawn from multiple healthcare settings to enhance generalizability. It would be beneficial to include long-term follow-up periods of six months, one year, or longer to determine whether gains in positive meta-emotions persist throughout pregnancy and into postpartum. Comparative studies examining individual versus group formats of these interventions could clarify the role of delivery modality. Additionally, the use of multimethod assessments—including physiological measures, clinician ratings, and observational protocols—would provide a richer understanding of meta-emotional changes. Future research may also explore how improvements in positive meta-emotions influence childbirth outcomes, maternal–infant bonding, or parenting behavior. Investigating culturally tailored adaptations of these interventions could further enhance their effectiveness in diverse populations.

Clinicians working with pregnant women should consider incorporating structured emotional regulation interventions, such as transdiagnostic therapy or CBT, into routine prenatal care. Mental health professionals may benefit from integrating psychoeducation on meta-emotions into counseling sessions to help mothers better understand and manage their emotional experiences. Healthcare providers should screen for both negative and positive emotional experiences during prenatal visits to identify women who may benefit from early psychological support. Developing accessible group-based interventions in community health centers and digital platforms may increase engagement and reduce barriers to care. Finally, practitioners should emphasize the importance of strengthening positive emotional processes, not only reducing distress, to promote holistic maternal well-being.

Authors' Contributions

Authors contributed equally to this article.

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.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. This study was reviewed and approved by the Ethics Committee of Islamic Azad University, Roudehen Branch, under the ethics code IR.IAU.R.REC.1404.028

References

Abdelhafez, M. M. A., Ahmed, K. A. M., Ahmed, N. A. M., Ismail, M. H., Mohd Daud, M. N. B. M., Pang, T. P. N., Eldiasty, A. M., Amri, M. F. B., Jeffree, M. S., Kadir, F., Baharuddin, D. M. P. G., Bolong, M. F. B., Hayati, F., Azizan, N. B., Sumpat, D., Syed Abdul Rahim, S. S., & Abdel Malek, E. H. (2023). Psychiatric illness and pregnancy: A literature review. *Heliyon*, *9*(11), e20958. https://doi.org/10.1016/j.heliyon.2023.e20958

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical psychology review*, *30*(2), 217–237. https://doi.org/10.1016/j.cpr.2009.11.004

Barlow, D. H. (2011). *Unified protocol for transdiagnostic treatment of emotional disorders: Workbook*. Oxford University Press. https://doi.org/10.1037/e556572013-126

Beck, J. S. (2021). *Cognitive behavior therapy: Basics and beyond*. Guilford Press. https://psycnet.apa.org/record/2020-66930-000

Branjerdporn, G., Meredith, P., Strong, J., & Green, M. (2017). Mindfulness and its relation to emotional regulation and parenting in perinatal women: A systematic review. *BMC Pregnancy and Childbirth*, *17*(1), 316. https://doi.org/10.1186/s12884-017-1498-0

Chauhan, A., & Potdar, J. (2022). Maternal mental health during pregnancy: A critical review. *Cureus*, *14*(10), e30656. https://doi.org/10.7759/cureus.30656

Dalgleish, T., Black, M., Johnston, D., & Bevan, A. (2020). Transdiagnostic approaches to mental health problems: Current status and future directions. *Journal of consulting and clinical psychology*, *88*(3), 179–197. https://doi.org/10.1037/ccp0000472

Dunkel Schetter, C., & Tanner, L. (2012). Anxiety, depression and stress in pregnancy: Implications for mothers, children, research, and practice. *Current Opinion in Psychiatry*, *25*(2), 141–148. https://doi.org/10.1097/YCO.0b013e3283503680

Eskandari, H. (2019). *The role of Farahijan in inhibiting academic motivation and tolerating distress in students* https://jhpbd.com/index.php/hpbd/article/view/136?articlesBySimilarityPage=2

Goodarzi, M., Gholamrezaei, S., & Amraei, K. (2021). Effectiveness of online integrated transdiagnostic therapy on psychological distress, mindfulness, Farahijan, and psychological empowerment in pregnant women. *Journal of Cognitive Psychology and Psychiatry*, *8*(1), 88–105. https://doi.org/10.32598/shenakht.8.1.88

Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology*, *10*(3), 243–268. https://doi.org/10.1037/0893-3200.10.3.243

Haradhvala, N. (2016). *Meta-emotions in daily life: Associations with emotional awareness and depression* https://openscholarship.wustl.edu/art_sci_etds/978/

Hogeveen, J., & Grafman, J. (2021). Alexithymia. In *Handbook of clinical neurology* (Vol. 183, pp. 47–62). Elsevier. https://doi.org/10.1016/B978-0-12-822290-4.00004-9

Johnson, H. J. (2023). *Teachers' meta-emotion profiles and their relationship quality with high- and low-compliant students* https://figshare.mq.edu.au/ndownloader/files/43173883

Kargar, K., Vaziri, S., Lotfi Kashani, F., Nasri, M., & Shahabizadeh, F. (2023). Effectiveness of integrative transdiagnostic therapy on emotional expressivity and sexual functioning in infertile women. *Health Psychology*, *12*(46), 23–40. https://hpj.journals.pnu.ac.ir/article_9839.html?lang=en

Kingston, D., McDonald, S., Austin, M. P., & Tough, S. (2014). Association between prenatal and postnatal psychological distress and maternal and infant health: A systematic review. *JAMA Pediatrics*, *168*(2), 131–139. https://doi.org/10.1001/jamapediatrics.2013.4073

Koush, Y., Pichon, S., Eickhoff, S. B., Van De Ville, D., Vuilleumier, P., & Scharnowski, F. (2019). Brain networks for engaging oneself in positive-social emotion regulation. *NeuroImage*, *189*, 106–115. https://doi.org/10.1016/j.neuroimage.2018.12.043

LaBar, K. S., & Cabeza, R. (2020). Cognitive neuroscience of emotional memory. *Nature Reviews Neuroscience*, *7*(1), 54. https://doi.org/10.1038/nrn1825

Lähdepuro, A., Lahti-Pulkkinen, M., Pyhälä, R., Tuovinen, S., Lahti, J., Heinonen, K., & Räikkönen, K. (2023). Positive maternal mental health during pregnancy and mental and behavioral disorders in children: A prospective pregnancy cohort study. *Journal of Child Psychology and Psychiatry*, *64*(5), 807–816. https://doi.org/10.1111/jcpp.13762

Li, X., Laplante, D. P., Paquin, V., Lafortune, S., Elgbeili, G., & King, S. (2022). Effectiveness of cognitive behavioral therapy

for perinatal maternal depression, anxiety and stress: A systematic review and meta-analysis of randomized controlled trials. *Clinical psychology review*, *92*, 102129. https://doi.org/10.1016/j.cpr.2022.102129

Meshram, S., & Jaiswal, A. K. (2022). Effects of positive metacognitions and positive meta-emotions on perceived stress in adolescents. *Indian Journal of Positive Psychology*, *13*(3). https://www.researchgate.net/publication/364377124_Effects_of_positive_metacognitions_and_positive_meta-emotions_on_perceived_stress_in_adolscents

Mirtabar, S. M., Barat, S., Kheirkhah, F., Mostafazadeh, A., Shirafkan, H., Pahlavan, Z., & Faramarzi, M. (2024). Effectiveness of an Internet-Based Transdiagnostic Unified Protocol Intervention for the Treatment of Depressive and Anxiety Disorders in Women with Threatened Abortion: A Feasibility Study. *International Journal of Psychiatry and Behavioral Sciences*, *18*(4), e147292. https://doi.org/10.5812/ijpbs-147292

Mitmansgruber, H., Beck, T. N., Höfer, S., & Schüßler, G. (2009). When you don't like what you feel: Experiential avoidance, mindfulness, and meta-emotion in emotion regulation. *Personality and individual differences*, *46*(4), 448–453. https://doi.org/10.1016/j.paid.2008.12.013

Mousavi, S. E., Ahmadi, G., Javadi, V., Salek Ebrahimi, L., & Ghasemzadeh, S. (2023). Comparing the effectiveness of integrative transdiagnostic therapy and cognitive-behavioral therapy on emotion regulation and quality of life in working children. *Journal of Clinical Psychology and Psychiatry Research*, *10*(4), 143–160. https://childmentalhealth.ir/browse.php?a_id=1224&sid=1&slc_lang=en&ftxt=0

Nakamura, Y., Sato, M., & Watanabe, I. (2018). Positive emotion and its changes during pregnancy: Adjunct study of Japan Environment and Children's Study in Miyagi Prefecture. *The Tohoku journal of experimental medicine*, *245*(4), 223–230. https://doi.org/10.1620/tjem.245.223

Norton, P. J., & Roberge, P. (2017). Transdiagnostic therapy. *Psychiatric Clinics of North America*, *40*(4), 675–687. https://doi.org/10.1016/j.psc.2017.08.003

Pettman, D., O'Mahen, H., Blomberg, O., Svanberg, A. S., von Essen, L., & Woodford, J. (2023). Effectiveness of cognitive behavioural therapy-based interventions for maternal perinatal depression: A systematic review and meta-analysis. *BMC psychiatry*, *23*(1), 208. https://doi.org/10.1186/s12888-023-04658-2

Rezaei, N., Parsaei, A., Nejati, A., Nikamal, M., & Hashemi Rezini, S. (2014). Psychometric properties of the Farahijan scale in university students. *Quarterly Journal of Psychological Research*, *6*(23), 111–124. https://ensani.ir/fa/article/download/427391

Roberge, P., Vasiliadis, H. M., Chapdelaine, A., Battista, M. C., Beaulieu, M. C., Chomienne, M. H., Cumyn, A., Drapeau, M., Durand, C., Girard, A., Gosselin, D., Grenier, J., Hardy, I., Hudon, C., Koszycki, D., Labelle, R., Lesage, A., Lussier, M. T., Mahoney, A., . . . Shiner, C. T. (2025). Transdiagnostic internet cognitive behavioural therapy for anxiety and depressive symptoms in postnatal women: Protocol of a randomized controlled trial. *BMC psychiatry*, *25*(1), 237. https://doi.org/10.1186/s12888-025-05528-7

Schaeuffele, C., Meine, L. E., Schulz, A., Weber, M. C., Moser, A., Paersch, C., Recher, D., Boettcher, J., Renneberg, B., Flückiger, C., & Kleim, B. (2024). A systematic review and meta-analysis of transdiagnostic cognitive behavioural therapies for emotional disorders. *Nature Human Behaviour*, *8*(3), 493–509. https://doi.org/10.1038/s41562-023-01746-2

Tolin, D. F. (2024). *Doing CBT*. Guilford Publications. https://psycnet.apa.org/record/2024-37228-000

Wan Mohd Yunus, W. M. A., Matinolli, H. M., Waris, O., Upadhyaya, S., Vuori, M., Korpilahti-Leino, T., & Sourander, A. (2022). Digitalized cognitive behavioral interventions for depressive symptoms during pregnancy: Systematic review. *Journal of medical Internet research*, *24*(2), e33337. https://doi.org/10.2196/33337

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026