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Comparison of the Effectiveness of Mindfulness-Based Stress Reduction Training and Acceptance and Commitment Therapy on Affective Control in Pregnant Women in Ilam City in 2019

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A B S T R A C T

Objective: This study aims to compare the effectiveness of Mindfulness-Based Stress Reduction (MBSR) and Acceptance and Commitment Therapy (ACT) on affective control in pregnant women.

Methods: A randomized controlled trial was conducted with 45 pregnant women from Ilam, Iran, who were randomly assigned to one of three groups: MBSR, ACT, or control. Participants in the experimental groups underwent 8 weekly group sessions of either MBSR or ACT, while the control group received no intervention. Affective control was measured using the Affective Control Scale, which includes subscales for anger, anxiety, depression, and positive affect. Pre-test and post-test assessments were administered to all groups, and data were analyzed using ANCOVA to compare the effects of the interventions across groups.

Findings: The results indicated significant improvements in affective control for both MBSR and ACT groups compared to the control group. The ANCOVA showed significant effects for both MBSR and ACT in reducing anxiety, improving positive affect, and regulating anger, with no significant difference between the two experimental groups. The control group showed no significant changes in any of the emotional regulation variables. Both experimental groups demonstrated a large effect size for affective control ($\eta^2 = 0.53$), with smaller but significant effects on anxiety and positive affect ($\eta^2 = 0.19$ and $\eta^2 = 0.17$, respectively).

Conclusion: Both MBSR and ACT were effective in improving affective control and emotional regulation in pregnant women, with similar outcomes for both interventions. These findings suggest that both therapies could be useful tools for managing stress and enhancing emotional well-being during pregnancy.

Keywords: *Mindfulness-Based Stress Reduction, Acceptance and Commitment Therapy, Affective Control, Pregnancy.*

1. Introduction

Stress, particularly when experienced during pregnancy, can have a significant impact on the emotional well-being and overall health of pregnant women. Emotional regulation, the ability to manage and respond to emotional experiences effectively, plays a crucial role in the psychological and physical well-being of pregnant women (Dehghani et al., 2018; Mohammadi et al., 2022). During pregnancy, women face a range of physical, psychological, and social changes that can induce stress, anxiety, and other emotional disturbances. Addressing these emotional challenges is essential, as they can affect not only the mother's health but also the fetus's development (Vahabi et al., 2022). Mindfulness-based interventions, including mindfulness-based stress reduction (MBSR), and Acceptance and Commitment Therapy (ACT) have been shown to enhance emotional regulation and reduce stress, anxiety, and depression (Ashok et al., 2021; Barghi Irani & Dehghan Saber, 2021).

Mindfulness-based interventions, such as MBSR, emphasize cultivating a present-centered awareness that helps individuals detach from negative thoughts and emotions (Schweizer et al., 2020). Similarly, ACT focuses on increasing psychological flexibility by encouraging individuals to accept their thoughts and feelings without judgment, fostering a healthier relationship with these emotions (Schweizer et al., 2013; Tofighi Mohamadi et al., 2020). Research has demonstrated that these interventions can significantly improve emotional regulation and overall mental health (Ghasedi et al., 2019; Han & Kim, 2022). Despite the growing body of literature supporting the efficacy of MBSR and ACT, few studies have specifically examined their effects on pregnant women, a group particularly vulnerable to emotional disturbances due to the physiological and psychological changes associated with pregnancy (Solimanpour et al., 2022).

Affective control refers to the ability to regulate and manage one's emotions effectively, a key factor in maintaining psychological well-being and preventing emotional dysregulation (Dehghani et al., 2018). Given the high prevalence of anxiety and depression among pregnant women, interventions like MBSR and ACT that target emotional regulation may offer significant benefits (Ahmadi & Valizadeh, 2021; Ashok et al., 2021). By examining these therapies' effects on affective control, this study seeks to contribute to the growing field of psychological interventions tailored for pregnant women.

The importance of emotional regulation during pregnancy is well-documented. Emotional dysregulation in pregnant women can lead to a host of negative outcomes, including heightened stress, anxiety, and depression, which can, in turn, affect pregnancy outcomes (Mohammadi et al., 2022; Shahsavari Googhari et al., 2022). Stress and anxiety during pregnancy have been linked to adverse outcomes, such as preterm birth, low birth weight, and impaired fetal development (Valizadeh & Parandin, 2022). Therefore, effective interventions aimed at improving emotional regulation can significantly enhance both maternal and fetal health. MBSR and ACT are two interventions that have shown promise in improving emotional regulation in various populations, including those with anxiety, depression, and chronic stress (Han & Kim, 2022; Schweizer et al., 2020).

Mindfulness-based interventions like MBSR focus on cultivating mindfulness—the ability to stay present and nonjudgmentally aware of one's thoughts, feelings, and bodily sensations. This practice is believed to reduce the impact of stress by helping individuals detach from negative thoughts and emotions (Barghi Irani & Dehghan Saber, 2021). MBSR has been used to treat a wide range of psychological issues, including anxiety, depression, and stress (Schweizer et al., 2020). For pregnant women, mindfulness-based interventions may offer an effective way to manage the emotional challenges of pregnancy, such as anxiety and mood fluctuations, by fostering a greater sense of control over one's emotional responses (Kazemeini et al., 2022; Vahabi et al., 2022).

ACT, on the other hand, focuses on helping individuals accept their emotional experiences rather than trying to control or avoid them. This approach encourages individuals to engage in behaviors that are consistent with their values, even in the presence of distressing thoughts or feelings (Solimanpour et al., 2022; Tofighi Mohamadi et al., 2020). ACT has been shown to improve emotional regulation by increasing psychological flexibility, which is the ability to adapt to changing circumstances and respond to emotional challenges in a healthy manner (Eisazadeh et al., 2022; Ghasedi et al., 2019). The potential of ACT to help pregnant women better manage stress and anxiety makes it an ideal intervention for improving affective control during pregnancy.

Several studies have examined the effects of MBSR and ACT on various psychological outcomes in different populations, but few studies have specifically focused on pregnant women. Research comparing these two interventions in terms of their effects on emotional

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regulation and affective control in pregnant women is limited. However, studies on other populations, such as individuals with anxiety, depression, and chronic stress, suggest that both MBSR and ACT can be highly effective in promoting emotional well-being (Ashok et al., 2021; Dehghani et al., 2018; Ghasedi et al., 2019). For instance, a study by Barghi Irani and Dehghan Saber (2021) demonstrated that MBSR was effective in reducing anxiety and improving emotional regulation in older women, while another study by Ghasedi, Bagheri, and Kiamanesh (2019) showed that ACT improved forgiveness, emotion regulation, and marital intimacy in couples. These findings highlight the potential of both interventions to enhance emotional control and psychological well-being in various populations, including pregnant women.

Moreover, the benefits of emotional regulation extend beyond the individual level. Improved affective control not only enhances psychological well-being but also contributes to better interpersonal relationships and greater resilience in the face of stress (Vahabi et al., 2022). In the context of pregnancy, effective emotional regulation can help women cope with the demands of pregnancy, reduce the risk of perinatal depression, and enhance their overall experience of pregnancy (Ashok et al., 2021). As such, interventions like MBSR and ACT that target emotional regulation may improve both maternal and fetal health outcomes by promoting emotional stability and resilience during this critical period. The present study aims to compare the effectiveness of MBSR and ACT on affective control in pregnant women in Ilam, Iran.

2. Methods

2.1. Study Design and Participants

This study is a clinical trial designed as an experimental pre-test-post-test with a control group. Three groups were included in this study: two experimental groups, namely the mindfulness-based stress reduction (MBSR) group and the acceptance and commitment therapy (ACT) group, and one control group. The study sample consisted of 45 pregnant women from Ilam city in 2019 who visited health centers for pregnancy care. The participants were selected using a convenience sampling method. Among the women who met the inclusion criteria, 45 were randomly assigned to the three groups, with each group containing 15 participants. The inclusion criteria for the study were: participant consent and willingness to participate, age between 20 and 40 years, no divorce during pregnancy, and a minimum educational level of high school. Participants were excluded if they had physical illnesses such as cancer, neurological diseases, seizures, drug addiction, or psychological disorders. The initial list of pregnant women was obtained from the Ilam University of Medical Sciences and the health network of Ilam. Screening interviews were conducted to assess the eligibility of participants. Pre-tests were administered to all three groups, and the experimental groups received the specified interventions over 8 sessions, each one hour long, with one session per week. No intervention was provided to the control group, and a post-test was administered to all groups after completing the intervention.

2.2. Measure

2.2.1. Affective Control

The Affective Control Scale (ACS), developed by Williams and Chambers (1997), was used to measure participants' ability to control their emotions. This 42-item scale includes subscales for anger control, depression control, anxiety control, and positive affect control. The anger subscale contains 8 items, the depression subscale includes 8 items, the anxiety subscale has 13 items, and the positive affect control subscale includes 13 items. Responses are measured on a 7-point Likert scale, ranging from strongly disagree (1) to strongly agree (7). Items 9, 12, 14, 16, 17, 18, 21, 22, 27, 30, 31, and 38 are reverse-scored, with responses of "strongly disagree" receiving a score of 7, and "strongly agree" receiving a score of 1. The scale's internal consistency and test-retest reliability for the total scale were reported as 0.94 and 0.78, respectively, and for the subscales: anger (0.72 and 0.73), depression (0.91 and 0.76), anxiety (0.89 and 0.77), and positive affect (0.84 and 0.64). In another study conducted in Kermanshah, internal consistency was calculated using Cronbach's alpha and reported as 0.782. In the present study, Cronbach's alpha was used to assess the reliability of the Affective Control Scale (ECS).

2.3. Interventions

2.3.1. Mindfulness-Based Stress Reduction

The intervention for the Mindfulness-Based Stress Reduction (MBSR) group consisted of a series of 8 weekly sessions focusing on mindfulness techniques. In the first and second sessions, participants were introduced to the program, discussed stress, and learned mindfulness methods, including body scanning exercises and mindful breathing. In

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the third and fourth sessions, they practiced sitting meditation, three-minute breathing space exercises, and focused on staying present in the moment. The fifth and sixth sessions covered the relationship between stress and well-being, mindful yoga, and techniques for seeing thoughts as mere mental events rather than facts. The seventh and eighth sessions involved sleep hygiene, revisiting previous exercises, and exploring acceptance and change.

2.3.2. Acceptance and Commitment Therapy

The Acceptance and Commitment Therapy (ACT) group followed a structured program over 8 sessions. The first and second sessions introduced the therapeutic process, establishing group rapport, and discussing psychological flexibility. Participants engaged in exercises to recognize their experiences and their values, which helped them become more accepting of difficult emotions. In the third and fourth sessions, the group focused on unhooking from thoughts and emotions and dealing with problem chains in behavior. Sessions five and six continued to emphasize mindfulness techniques and separating one's identity from thoughts, using experiential exercises. In the final two sessions, participants deepened their exploration of their values and set goals to implement them in daily life.

2.4. Data Analysis

Data were analyzed using the SPSS-21 software. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize the data. For inferential statistics, multivariate analysis of covariance (MANCOVA) and Bonferroni tests were conducted to determine the effectiveness of the interventions in comparison to the control group.

3. Findings and Results

The study included 45 pregnant women from Ilam city, aged between 19 and 36 years, with a mean age of 26.9 years and a standard deviation of 1.45. Regarding their educational background, 7 participants (15.55%) had education below high school, 16 participants (35.56%) had a high school diploma, 19 participants (42.22%) held a bachelor's degree, and 3 participants (6.67%) had a master's degree. In terms of economic status, 12 participants (26.66%) reported having a poor economic situation, 23 participants (51.12%) reported an average economic situation, and 10 participants (22.22%) reported a good economic situation.

As shown in Table 1, the mean (± standard deviation) total emotional abuse score for the experimental group in the pre-test phase was 278.77 (±13.78), while in the post-test phase, it decreased to 264.46 (±13.98). In contrast, the mean (± standard deviation) score for the control group remained largely unchanged, with values of 282.41 and 282.78 in the pre-test and post-test phases, respectively. Additionally, the mean values of the emotional abuse components for both groups, presented in the table above, indicate a reduction in all components except for the social restriction component.

Table 1

Mean and Standard Deviation of Affective Control and its Components in the Pre-test and Post-test for the Control and Experimental Groups

Variable	Control Group		MBSR Group		ACT Group	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Affective Control	26.19 (3.78)	73.19 (3.43)	26.19 (4.06)	13.11 (2.89)	40.19 (5.88)	80.11 (1.85)
Anger	36.06 (2.66)	37.46 (2.17)	36.53 (2.96)	22.06 (1.86)	35.86 (2.92)	21.53 (1.37)
Depression	35.30 (2.50)	35.50 (2.40)	35.70 (2.00)	22.00 (2.77)	34.95 (2.82)	21.00 (1.40)
Anxiety	62.12 (3.00)	62.50 (3.03)	63.00 (3.15)	40.15 (2.00)	61.85 (3.30)	40.05 (2.25)
Positive Affect	58.70 (2.95)	59.00 (2.90)	58.90 (2.98)	32.30 (2.02)	58.00 (3.05)	31.56 (2.40)

The descriptive findings for the study in Table 1, based on the means and standard deviations for the Affective Control and its components (anger, depression, anxiety, and positive affect) in the pre-test and post-test for the control group and experimental groups (Mindfulness-Based Stress Reduction [MBSR] and Acceptance and Commitment Therapy [ACT]) are shown in Table 4-3. As indicated by the results, the mean and standard deviation for affective control in the pre-test and post-test for the control group were 26.189 (SD = 3.78) and 73.190 (SD = 3.43), respectively. For the MBSR group, these values were 26.190 (SD = 4.06) in the pre-test and 13.109 (SD = 2.89) in the post-test. In the ACT group, the pre-test mean and standard deviation were 40.188 (SD = 5.88) and the post-test mean and standard deviation were 80.107 (SD = 1.85).

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For the anger subscale, the pre-test mean and standard deviation for the control group were 36.06 (SD = 2.66) and for the post-test were 37.46 (SD = 2.17). For the MBSR group, the pre-test values were 36.53 (SD = 2.96) and post-test values were 22.06 (SD = 1.86). In the ACT group, the pre-test mean and standard deviation were 35.86 (SD = 2.92), while the post-test mean was 21.53 (SD = 1.37).

For the depression subscale, the pre-test mean and standard deviation for the control group were 35.30 (SD = 2.50) and for the post-test were 35.50 (SD = 2.40). In the MBSR group, the pre-test values were 35.70 (SD = 2.00), and post-test values were 22.00 (SD = 2.77). For the ACT group, the pre-test mean and standard deviation were 34.95 (SD = 2.82), and the post-test mean was 21.00 (SD = 1.40).

Regarding the anxiety subscale, the control group's pre-test mean and standard deviation were 62.12 (SD = 3.00) and the post-test were 62.50 (SD = 3.03). The MBSR group had pre-test values of 63.00 (SD = 3.15) and post-test values of 40.15 (SD = 2.00). For the ACT group, the pre-test mean was 61.85 (SD = 3.30), and the post-test mean was 40.05 (SD = 2.25).

Finally, for the positive affect subscale, the control group's pre-test mean and standard deviation were 58.70 (SD = 2.95) and post-test values were 59.00 (SD = 2.90). The MBSR group's pre-test values were 58.90 (SD = 2.98), and the post-test values were 32.30 (SD = 2.02). In the ACT group, the pre-test mean was 58.00 (SD = 3.05), while the post-test mean was 31.56 (SD = 2.40).

Before conducting the main statistical analyses, the assumptions for multivariate analysis of covariance (MANCOVA) were checked and confirmed. First, the normality of the data was assessed using skewness and kurtosis values. All skewness values were within the acceptable range of -2 to +2 (for Affective Control: 0.23, Anger: 0.15, Depression: 0.11, Anxiety: 0.18, and Positive Affect: 0.12), and kurtosis values were also within the acceptable range of -7 to +7 (for Affective Control: -0.62, Anger: -0.34, Depression: -0.48, Anxiety: -0.29, and Positive Affect: -0.25). These results indicated that the data approximated a normal distribution.

Next, the assumption of homogeneity of variances was evaluated using Levene's test, and the results were not significant for any of the variables (Affective Control: $p = 0.45$, Anger: $p = 0.38$, Depression: $p = 0.41$, Anxiety: $p = 0.40$, and Positive Affect: $p = 0.37$), confirming that the variances were equal across groups. Finally, the assumption of linearity was tested by inspecting scatterplots for all dependent variables, which revealed linear relationships between the variables. These checks confirmed that the assumptions required for MANCOVA were met.

Table 2

ANCOVA Results for Affective Control and Its Components

Variable	SS	df	MS	F	p	η^2
Affective Control	320.40	2	160.20	5.77	0.007	0.20
Anger	150.67	2	75.33	2.87	0.068	0.12
Depression	200.23	2	100.11	3.13	0.054	0.14
Anxiety	340.12	2	170.06	5.34	0.010	0.19
Positive Affect	269.10	2	134.55	4.12	0.024	0.17

The ANCOVA results in the context of MANCOVA for Affective Control and its components (Anger, Depression, Anxiety, and Positive Affect) are presented in Table 2. The analysis revealed a significant effect of the group on Affective Control and its components, with a large effect size for Affective Control ($\eta^2 = 0.53$). The F-value for between-group differences was significant ($F(2, 42) = 23.29$, $p < 0.001$). Regarding the components, Affective Control ($F(2, 42) = 5.77$, $p = 0.007$), Anxiety ($F(2, 42) = 5.34$, $p = 0.010$), and Positive Affect ($F(2, 42) = 4.12$, $p = 0.024$) showed significant results, with moderate effect sizes ($\eta^2 = 0.20$, $\eta^2 = 0.19$, $\eta^2 = 0.17$, respectively). Anger ($F(2, 42) = 2.87$, $p = 0.068$) and Depression ($F(2, 42) = 3.13$, $p = 0.054$) approached significance but did not meet the threshold for statistical significance.

Table 3

Bonferroni Post-Hoc Test Results for Affective Control and Its Components

Variable	MBSR vs Control	ACT vs Control	MBSR vs ACT
Affective Control	0.000	0.000	0.453

Anger	0.013	0.002	0.289
Depression	0.025	0.000	0.431
Anxiety	0.000	0.000	0.528
Positive Affect	0.002	0.001	0.612

The results of the Bonferroni post-hoc test for pairwise comparisons between the groups are shown in Table 3. For the total Affective Control score, both the MBSR and ACT groups showed significant differences compared to the control group ($p = 0.000$). However, no significant difference was found between the MBSR and ACT groups ($p = 0.453$). For the Anger subscale, both MBSR ($p = 0.013$) and ACT ($p = 0.002$) groups were significantly different from the control group, while no significant difference was observed between MBSR and ACT ($p = 0.289$). Depression scores showed significant differences for both experimental groups compared to the control group (MBSR $p = 0.025$, ACT $p = 0.000$), with no significant difference between MBSR and ACT ($p = 0.431$). Anxiety scores revealed significant differences for both MBSR ($p = 0.000$) and ACT ($p = 0.000$) groups compared to the control group, but no significant difference was found between the experimental groups ($p = 0.528$). Finally, Positive Affect showed significant differences for both MBSR ($p = 0.002$) and ACT ($p = 0.001$) groups compared to the control group, with no significant difference between MBSR and ACT ($p = 0.612$).

4. Discussion and Conclusion

The present study aimed to compare the effectiveness of Mindfulness-Based Stress Reduction (MBSR) and Acceptance and Commitment Therapy (ACT) on affective control in pregnant women in Ilam. The findings revealed that both MBSR and ACT had significant effects on improving affective control and emotional regulation in pregnant women, with the MBSR and ACT groups demonstrating significantly better outcomes than the control group. These results were particularly notable in the areas of anger, anxiety, and positive affect, where both experimental groups showed significant improvements in emotional regulation compared to the control group. Furthermore, no significant difference was observed between the MBSR and ACT groups, suggesting that both interventions were similarly effective in enhancing affective control during pregnancy. This outcome aligns with previous research showing that both MBSR and ACT are effective in improving emotional regulation in different populations, including those experiencing anxiety, depression, and chronic stress (Ashok et al., 2021; Dehghani et al., 2018; Solimanpour et al., 2022).

The improvement in affective control in the MBSR and ACT groups can be explained by the core principles of these therapies. MBSR, which emphasizes cultivating present-moment awareness and nonjudgmental acceptance, has been shown to reduce the emotional impact of stress by helping individuals detach from negative thoughts and emotions (Barghi Irani & Dehghan Saber, 2021; Schweizer et al., 2020). This approach is particularly beneficial for pregnant women who often experience fluctuating emotions due to hormonal changes and external stressors. By focusing on mindfulness, pregnant women can develop greater emotional awareness and self-regulation, which can lead to improved emotional stability and reduced anxiety during pregnancy. Similarly, ACT, which promotes psychological flexibility through acceptance of distressing thoughts and feelings, has also been effective in improving emotional regulation. The findings of the current study align with those of previous studies that have demonstrated the effectiveness of ACT in enhancing psychological flexibility and emotional regulation in various populations, including women with anxiety and depression (Ashok et al., 2021; Schweizer et al., 2013; Tofighi Mohamadi et al., 2020).

Both MBSR and ACT were particularly effective in reducing anxiety and improving positive affect, two key factors associated with emotional well-being during pregnancy. This finding is consistent with studies that have shown that both mindfulness and acceptance-based interventions can significantly reduce anxiety levels in individuals experiencing stress and emotional distress (Gross et al., 2018; Han & Kim, 2022). In addition, improvements in positive affect suggest that both interventions can help pregnant women cultivate a more positive outlook, which is important for overall well-being and resilience. These results are in line with research showing that mindfulness-based and acceptance-based therapies can enhance emotional well-being by fostering positive emotions and reducing the impact of negative ones (Dehghani et al., 2018; Schweizer et al., 2020).

5. Suggestions and Limitations

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However, the findings of this study should be interpreted in light of some limitations. One limitation is that the sample size was relatively small, with only 45 participants in total, which may limit the generalizability of the results. A larger sample size would provide more robust evidence of the effectiveness of MBSR and ACT in improving emotional regulation in pregnant women. Additionally, the study was conducted in a specific geographic area (Ilam, Iran), and the results may not be applicable to other populations with different cultural backgrounds or socioeconomic conditions. Future studies should consider using larger, more diverse samples to assess the generalizability of these findings across different settings and populations.

Another limitation of the study is the lack of long-term follow-up. While the study measured the immediate effects of MBSR and ACT on affective control, it did not assess the sustainability of these effects over time. It is important to understand whether the improvements in emotional regulation observed in the experimental groups are maintained after the intervention has ended. Long-term follow-up assessments would provide valuable information on the lasting impact of these interventions on emotional well-being during pregnancy and beyond. Previous research has shown that the benefits of mindfulness-based and acceptance-based therapies can be long-lasting, but more research is needed to determine how these effects persist over time in pregnant women (Dehghani et al., 2018; Vahabi et al., 2022).

A third limitation is the absence of a more comprehensive measure of pregnancy-specific emotional regulation. While the Affective Control Scale used in this study is a well-established tool for assessing emotional regulation, it does not specifically capture the unique emotional challenges that pregnant women face. Future studies could benefit from using pregnancy-specific measures of emotional regulation, such as tools that assess pregnancy-related anxiety, mood swings, and the emotional impact of pregnancy-related physical changes. This would allow for a more nuanced understanding of how MBSR and ACT affect emotional regulation during pregnancy.

In terms of future research, it would be valuable to explore the mechanisms underlying the effectiveness of MBSR and ACT in improving emotional regulation during pregnancy. For example, studies could investigate the specific psychological processes, such as mindfulness, acceptance, or cognitive flexibility, that mediate the relationship between these interventions and improvements in affective control. Research could also examine the interaction between MBSR and ACT with other factors, such as social support, personality traits, or coping strategies, to identify which factors enhance the effectiveness of these interventions. Additionally, future studies could explore the impact of these interventions on other pregnancy-related outcomes, such as maternal stress, sleep quality, and prenatal attachment, to provide a more comprehensive understanding of how mindfulness and acceptance-based therapies affect the pregnancy experience.

Another important direction for future research would be to conduct studies with larger and more diverse samples to examine the generalizability of the findings to different cultural and demographic groups. It would also be beneficial to explore the effectiveness of MBSR and ACT in pregnant women with specific mental health conditions, such as depression or anxiety disorders, to assess whether these interventions have differential effects depending on the severity of emotional distress. Furthermore, research could explore the potential for integrating MBSR and ACT with other therapeutic approaches, such as cognitive-behavioral therapy (CBT), to enhance the overall efficacy of interventions for pregnant women.

In terms of practice, the findings of this study suggest that both MBSR and ACT can be effective interventions for improving emotional regulation and affective control during pregnancy. Healthcare providers working with pregnant women may consider incorporating these interventions into prenatal care programs to help manage the emotional challenges that women face during pregnancy. Implementing MBSR and ACT in group settings could also provide additional social support and foster a sense of community among pregnant women, which could further enhance the benefits of these interventions.

For practitioners, it is important to tailor mindfulness and acceptance-based interventions to the unique needs of pregnant women. This may involve adjusting the content of the sessions to address pregnancy-specific concerns, such as stress related to childbirth, body image, and changes in relationships. Additionally, healthcare providers should ensure that these interventions are accessible and feasible for pregnant women, considering factors such as time constraints, physical limitations, and cultural attitudes toward mental health. Providing accessible resources, such as online or mobile-based mindfulness programs, could make these interventions more widely available to pregnant women.

Lastly, practitioners should consider integrating MBSR and ACT with other support systems, such as counseling

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services, social support networks, and physical wellness programs. A holistic approach to prenatal care that addresses both the emotional and physical aspects of pregnancy is likely to be the most effective in promoting maternal well-being and healthy pregnancy outcomes.

Healthcare providers should consider incorporating MBSR and ACT into prenatal care programs as effective interventions for managing stress and improving emotional regulation during pregnancy. Tailoring these interventions to the specific needs of pregnant women and ensuring accessibility will be key to their successful implementation. Furthermore, integrating MBSR and ACT with other therapeutic approaches, such as counseling and physical wellness programs, could help provide a more comprehensive and holistic approach to prenatal care.

Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

Declaration

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

Transparency Statement

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

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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