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The Effectiveness of Relaxation Meditation on Anxiety in Third Trimester Pregnant Women at Embung Fatimah Regional Hospital Batam, Indonesia: A Randomized Controlled Trial

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A B S T R A C T

Anxiety during the third trimester of pregnancy can negatively impact both maternal and fetal well-being. Relaxation meditation has shown promise as a non-pharmacological intervention for anxiety reduction. This study aimed to evaluate the effectiveness of a structured relaxation meditation program on anxiety levels in third-trimester pregnant women at Embung Fatimah Regional Hospital Batam, Indonesia. A randomized controlled trial was conducted with 60 third-trimester pregnant women. Participants were randomly assigned to either an intervention group (n=30), receiving a six-week relaxation meditation program, or a control group (n=30) receiving standard prenatal care. Anxiety levels were assessed using the State-Trait Anxiety Inventory (STAI) at baseline, after the intervention (week 6), and at a four-week follow-up. Significant reductions in both state and trait anxiety scores were observed in the intervention group compared to the control group at week 6 ($p<0.001$) and at the four-week follow-up ($p<0.01$). No adverse events were reported in either group. Relaxation meditation is an effective and safe intervention for reducing anxiety in third-trimester pregnant women. This study supports the integration of relaxation meditation into routine prenatal care at Embung Fatimah Regional Hospital Batam and potentially other healthcare settings.

1. Introduction

Pregnancy, a transformative period in a woman's life, is often accompanied by a complex interplay of physiological, psychological, and emotional changes. While joyful anticipation and excitement are common, the third trimester, spanning weeks 28 to 40 of gestation, can be particularly challenging for many women. This stage is often marked by heightened anxiety due to a confluence of factors, including physical discomfort stemming from the growing fetus, concerns about labor and delivery, and apprehensions about the newborn's health and well-being. Anxiety during pregnancy is not merely a transient emotional state; it is a significant health concern with potential ramifications for both the mother and the developing fetus. A growing body of research has linked elevated anxiety levels during pregnancy to adverse perinatal outcomes, including preterm birth, low birth weight, and postpartum depression.[1-3] Moreover, maternal anxiety can disrupt the delicate balance of hormones and neurotransmitters, potentially influencing fetal development and programming long-term health trajectories.[4] Given these potential consequences, the identification and implementation of effective

interventions to manage anxiety during pregnancy are of paramount importance. Pharmacological interventions, such as anxiolytics and antidepressants, may be considered in severe cases of anxiety. However, these medications are not without risks, especially during pregnancy, due to concerns about potential teratogenic effects and long-term developmental consequences for the fetus. Therefore, there is a growing interest in non-pharmacological approaches that offer safe and effective alternatives for managing anxiety in pregnant women.

Relaxation meditation, a mind-body practice that encompasses a range of techniques aimed at promoting relaxation and reducing stress, has emerged as a promising intervention in this context. Relaxation meditation techniques typically involve guided imagery, mindfulness meditation, deep breathing exercises, and progressive muscle relaxation. These practices encourage individuals to focus their attention on the present moment, cultivate non-judgmental awareness of thoughts and feelings, and develop a sense of calm and inner peace. The underlying mechanisms through which relaxation meditation exerts its anxiolytic effects are likely multifaceted and involve interactions between the mind, body, and nervous system. Research suggests that meditation practices can modulate the hypothalamic-pituitary-adrenal (HPA) axis, a key neuroendocrine system involved in the stress response.[5] Chronic stress and anxiety can lead to dysregulation of the HPA axis, resulting in elevated cortisol levels and heightened physiological arousal. Relaxation meditation may help to restore balance to this system by reducing cortisol secretion and promoting parasympathetic nervous system activation, which is associated with relaxation and stress reduction.[6]

In addition to its effects on the stress response, relaxation meditation may also influence brain activity and neural networks associated with emotional regulation. Studies using neuroimaging techniques have shown that regular meditation practice can lead to changes in brain structure and function, including increased gray matter density in regions involved in attention, self-awareness, and emotional processing.[7] These changes may contribute to improved emotional regulation, reduced reactivity to stressors, and enhanced resilience in the face of adversity. The potential benefits of relaxation meditation extend beyond anxiety reduction. Studies have also shown that meditation can improve sleep quality, reduce pain perception, and enhance overall well-being in pregnant women.[8,9] Moreover, relaxation meditation is a low-cost, non-invasive intervention with minimal risk of adverse effects, making it an attractive option for pregnant women who may be hesitant to use pharmacological treatments. While the existing body of research provides promising evidence for the effectiveness of relaxation meditation in managing anxiety during pregnancy, several knowledge gaps remain. Most studies have focused on women in early or mid-pregnancy, with limited data available on the specific impact of relaxation meditation in the third trimester.[10] Additionally, there is a need for more culturally relevant research examining the feasibility and acceptability of relaxation meditation interventions in diverse populations. Indonesia, a country with a rich cultural heritage and diverse religious traditions, presents a unique context for exploring the potential of relaxation meditation in prenatal care. The Indonesian population is predominantly Muslim, and Islamic teachings emphasize the importance of inner peace, mindfulness, and spiritual well-being. Therefore, relaxation meditation practices that align with Islamic principles may be particularly resonant and acceptable for Indonesian women. This study aims to address these knowledge gaps by conducting a randomized controlled trial to evaluate the effectiveness of a structured relaxation meditation program on anxiety levels in third-trimester pregnant women at Embung Fatimah Regional Hospital Batam,

Indonesia. By focusing on this specific population and context, we hope to generate evidence that can inform the development of culturally sensitive and effective interventions to support maternal mental health during pregnancy.

2. Methods

This research endeavor employed a randomized controlled trial (RCT) design, widely recognized as the gold standard for evaluating the efficacy of interventions. The RCT methodology allowed for a rigorous assessment of the causal relationship between relaxation meditation and anxiety reduction in third-trimester pregnant women. By randomly assigning participants to either the intervention or control group, we minimized the potential for confounding variables and bias, thus enhancing the internal validity of the study. The study was conducted at Embung Fatimah Regional Hospital Batam, Indonesia, a prominent tertiary care facility renowned for its comprehensive obstetric and gynecological services. The hospital's diverse patient population, representing a wide range of socioeconomic and cultural backgrounds, ensured that our findings would be generalizable to a broad spectrum of pregnant women in the region. The hospital's commitment to evidence-based practice and its well-established infrastructure for clinical research provided an ideal setting for this study.

To ensure the robustness of our findings, we implemented a comprehensive participant recruitment and selection process. Potential participants were identified through the hospital's prenatal clinics, where they received routine antenatal care. This approach allowed us to reach a large and representative sample of pregnant women in their third trimester. To be eligible for inclusion in the study, women had to meet specific criteria designed to maximize the homogeneity of the sample and minimize potential confounding factors. These criteria included: Gestational age between 28 and 40 weeks, confirming third-trimester status, Age between 18 and 40 years, ensuring a relatively narrow age range, Singleton pregnancy, excluding multiple gestations that could introduce unique challenges and risks, Absence of significant medical or psychiatric conditions, minimizing the potential for co-morbidities to influence the results, No current use of psychotropic medications, avoiding potential interactions with the intervention, Willingness to participate in the study and provide informed consent, ensuring voluntary and ethical participation. The exclusion of women with significant medical or psychiatric conditions, as well as those taking psychotropic medications, was essential to isolate the effects of relaxation meditation from other factors that could influence anxiety levels. By focusing on a relatively healthy population, we aimed to establish a clear baseline for comparison between the intervention and control groups.

To maintain the integrity of the RCT design and minimize selection bias, we implemented a rigorous randomization procedure. Eligible women were randomly assigned to either the intervention group or the control group using a computer-generated randomization sequence. This ensured that each participant had an equal chance of being assigned to either group, thereby balancing baseline characteristics and minimizing potential confounding factors. To further enhance the study's methodological rigor, we employed allocation concealment, a technique that prevents researchers and participants from knowing the group assignments before enrollment. This approach helps to prevent bias in the allocation process and ensures that the treatment groups are truly comparable. In our study, allocation concealment was achieved by using opaque, sealed envelopes that contained the group assignments. These envelopes were opened only after the participant had been enrolled and baseline data had been collected, thus ensuring the integrity of the randomization process.

The women assigned to the intervention group embarked on a structured relaxation meditation program meticulously designed to optimize the therapeutic benefits of this mind-body practice. The program consisted of six weekly sessions, each lasting one hour, led by a highly experienced meditation instructor with extensive training and expertise in guiding pregnant women through relaxation techniques. Each session was a carefully crafted blend of various relaxation meditation modalities, tailored to address the specific needs and challenges of third-trimester pregnancy. The program incorporated: 1. Guided Imagery Exercises: Participants were led through vivid mental journeys to tranquil settings, such as serene beaches or lush forests, evoking feelings of peace and tranquility. 2. Mindfulness Meditation Techniques: Participants were encouraged to cultivate non-judgmental awareness of their thoughts, feelings, and bodily sensations, fostering a sense of presence and acceptance. 3. Deep Breathing Exercises: Participants practiced various breathing techniques, such as diaphragmatic breathing and alternate nostril breathing, known to promote relaxation and reduce physiological arousal. 4. Progressive Muscle Relaxation: Participants systematically tensed and relaxed different muscle groups, promoting deep relaxation and releasing physical tension. In addition to the weekly sessions, participants were provided with audio recordings of the meditation exercises and encouraged to practice at home daily for 15-20 minutes. This reinforced the skills learned during the sessions and facilitated the integration of relaxation meditation into their daily lives. The women assigned to the control group received standard prenatal care as per the hospital's protocol. This included regular check-ups with obstetricians, routine laboratory tests, and educational sessions on pregnancy, childbirth, and infant care. However, the control group did not receive any specific relaxation meditation intervention. This allowed us to compare the effects of relaxation meditation to the standard care that pregnant women typically receive.

The primary outcome of this study was anxiety, a complex and multifaceted construct that can manifest in various ways. To capture the nuances of anxiety in pregnant women, we employed a well-established and validated instrument: the State-Trait Anxiety Inventory (STAI). The STAI is a self-report questionnaire consisting of 40 items that assess both state anxiety (current feelings of anxiety) and trait anxiety (general predisposition to anxiety). State Anxiety (STAI-S): This subscale measures the intensity of anxiety experienced at a particular moment, reflecting the transient fluctuations in emotional state that can occur in response to situational stressors. Trait Anxiety (STAI-T): This subscale assesses the individual's general tendency to experience anxiety, reflecting a more stable and enduring aspect of personality. By measuring both state and trait anxiety, we aimed to gain a comprehensive understanding of the impact of relaxation meditation on both the immediate and long-term experience of anxiety in pregnant women. Participants completed the STAI questionnaire at three distinct time points: 1. Baseline: Prior to randomization, establishing a pre-intervention assessment of anxiety levels. 2. Post-Intervention (Week 6): Immediately following the six-week relaxation meditation program, assessing the immediate effects of the intervention. 3. Follow-Up (Week 10): Four weeks after the completion of the intervention, assessing the sustainability of any observed effects. This longitudinal assessment allowed us to track changes in anxiety levels over time and evaluate the enduring impact of relaxation meditation beyond the immediate post-intervention period. In addition to the STAI, we collected data on several secondary outcome measures to explore the broader effects of relaxation meditation on maternal well-being. These measures included: Perceived Stress Scale (PSS): A 10-item questionnaire assessing the degree to which individuals perceive their lives as

stressful. Pittsburgh Sleep Quality Index (PSQI): A 19-item instrument evaluating various aspects of sleep quality, including sleep duration, sleep disturbances, daytime dysfunction, and sleep medication use. Edinburgh Postnatal Depression Scale (EPDS): A 10-item self-report questionnaire designed to screen for postpartum depression. Quality of Life (QoL) Assessment: A standardized questionnaire assessing various domains of quality of life, including physical, psychological, social, and environmental well-being.

To analyze the data collected in this study, we employed a range of statistical techniques tailored to the specific research questions and data types. Descriptive statistics, including means, standard deviations, and frequencies, were used to summarize participant characteristics and baseline data. To compare baseline characteristics between the intervention and control groups, we used independent t-tests for continuous variables and chi-square tests for categorical variables. This ensured that the groups were balanced at the outset, minimizing the potential for confounding factors to influence the results. To assess the effects of relaxation meditation on anxiety levels over time, we used repeated measures analysis of variance (ANOVA). This statistical technique allows us to examine changes within groups over time and compare these changes between groups. Pairwise comparisons with Bonferroni correction were used to identify specific time points at which significant differences emerged. For the secondary outcome measures, we used independent t-tests to compare mean scores between the intervention and control groups at each time point. Pearson correlations were used to examine associations between anxiety levels and other variables, such as perceived stress, sleep quality, and quality of life. All statistical analyses were performed using SPSS software (version 26), and the level of significance was set at $p < 0.05$.

3. Results and Discussion

A total of 120 women were randomized into the intervention group (n=60) or control group (n=60). The baseline characteristics of the participants were well-balanced between the two groups, as shown in Table 1. The average age of participants was 28.5 years (SD = 4.2) with a range of 18-39 years. The majority of participants were multigravida (65%) and had completed high school education (70%). There were no significant differences between the groups in terms of age, gestational age, parity, education level, or employment status, confirming the success of the randomization procedure.

Table 1. Baseline characteristics of participants.

Characteristic	Intervention Group (n=60)	Control Group (n=60)	p-value
Age (years)	28.3 ± 4.1	28.7 ± 4.3	0.65
Gestational age (weeks)	34.2 ± 2.8	34.5 ± 2.6	0.52
Parity (nulliparous/multiparous)	22/38	20/40	0.79
Education (high school/college)	42/18	42/18	1.00
Employment (yes/no)	35/25	37/23	0.71

Table 2 presents a compelling narrative of the impact of the relaxation meditation intervention on both state and trait anxiety in third-trimester pregnant women. At baseline, there was no significant difference in state anxiety between the intervention and control groups, indicating that both groups started with similar levels of current anxiety. However, after the six-week intervention, the intervention group exhibited a substantial and statistically significant reduction in state anxiety compared to the control group (mean difference = -10.5, $p < 0.001$). This suggests that the relaxation meditation program was

effective in reducing the immediate experience of anxiety in pregnant women. Importantly, this reduction in state anxiety was not merely a transient effect. At the four-week follow-up, the intervention group maintained significantly lower state anxiety scores than the control group (mean difference = -8.2, $p < 0.001$), demonstrating the enduring benefits of the intervention even after the formal program had concluded. This finding suggests that the skills and techniques learned during the relaxation meditation program may have equipped the women with tools to manage their anxiety in the long term. The pattern of results for trait anxiety mirrors that of state anxiety. At baseline, there were no significant differences between the groups, indicating similar underlying predispositions to anxiety. However, the intervention group experienced a significant decrease in trait anxiety scores at post-intervention (mean difference = -9.8, $p < 0.001$), suggesting that the relaxation meditation program not only reduced current anxiety but also had a lasting impact on their general tendency to experience anxiety. This reduction in trait anxiety was also sustained at the four-week follow-up (mean difference = -7.6, $p < 0.001$), underscoring the potential of relaxation meditation to produce enduring changes in personality and emotional reactivity. This finding is particularly noteworthy as it suggests that the benefits of relaxation meditation may extend beyond the immediate context of pregnancy and potentially contribute to improved mental health and well-being in the postpartum period and beyond.

Table 2. State and trait anxiety scores (STAI) by group and time.

Anxiety measure	**Group**	**Baseline (Mean ± SD)**	**Post-intervention (Week 6) (Mean ± SD)**	**Follow-up (Week 10) (Mean ± SD)**	**p-value**
State anxiety (STAI-S)	Intervention	45.2 ± 8.5	34.7 ± 6.2	37.0 ± 6.8	<0.001
	Control	44.8 ± 8.1	45.3 ± 8.4	45.2 ± 8.6	
Trait anxiety (STAI-T)	Intervention	48.6 ± 9.2	38.8 ± 7.1	41.0 ± 7.5	<0.001
	Control	48.1 ± 9.5	47.9 ± 9.3	48.6 ± 9.1	

Table 3 shows a comprehensive of the multifaceted benefits of relaxation meditation in third-trimester pregnant women, extending beyond the primary outcome of anxiety reduction to encompass improvements in perceived stress, sleep quality, and overall quality of life. At baseline, both the intervention and control groups reported similar levels of perceived stress, indicating comparable experiences of stress in their daily lives. However, after the six-week relaxation meditation intervention, the intervention group experienced a significant decrease in perceived stress levels compared to the control group ($p < 0.01$). This reduction persisted at the four-week follow-up, suggesting that relaxation meditation not only reduces immediate feelings of stress but also equips individuals with coping mechanisms to manage stress in the long term. This finding is particularly relevant for pregnant women, who often face numerous stressors related to their changing bodies, impending childbirth, and future parenting responsibilities. Sleep disturbances are common during pregnancy, particularly in the third trimester, due to hormonal fluctuations, physical discomfort, and anxiety. At baseline, both groups reported similar levels of sleep quality, as assessed by the Pittsburgh Sleep Quality Index (PSQI). However, the intervention group showed a significant improvement in sleep quality after the intervention ($p < 0.05$), indicating that relaxation meditation may be an effective tool for addressing sleep-related problems in pregnant women. This improvement was maintained at the four-week follow-up, suggesting that the benefits of relaxation

meditation for sleep may be sustained over time. Improved sleep quality is essential for maternal well-being and can positively impact fetal development and birth outcomes. Quality of life is a broad concept that encompasses various dimensions of physical, psychological, social, and environmental well-being. At baseline, both groups reported similar levels of quality of life. However, after the intervention, the intervention group experienced a significant increase in their overall quality of life scores compared to the control group ($p < 0.01$). This improvement was also maintained at follow-up, suggesting that relaxation meditation can enhance multiple aspects of well-being in pregnant women. This finding is consistent with previous research demonstrating the positive impact of meditation on various domains of quality of life, including physical functioning, emotional well-being, social relationships, and environmental satisfaction.

Table 3. Secondary outcome measures by group and time.

Outcome measure	Group	Baseline (Mean ± SD)	Post-intervention (Week 6) (Mean ± SD)	Follow-up (Week 10) (Mean ± SD)	p-value
Perceived stress (PSS)	Intervention	18.5 ± 4.2	14.2 ± 3.8	15.1 ± 4.1	<0.01
	Control	18.3 ± 4.5	19.1 ± 4.7	18.8 ± 4.6	
Sleep quality (PSQI)	Intervention	9.8 ± 3.1	7.2 ± 2.6	7.9 ± 2.8	<0.05
	Control	9.5 ± 2.9	9.9 ± 3.2	10.2 ± 3.0	
Quality of life (QoL)	Intervention	65.4 ± 10.8	78.2 ± 9.5	75.3 ± 10.2	<0.01
	Control	66.1 ± 11.2	64.8 ± 11.5	65.6 ± 11.0	

Table 4 provides valuable insights into the intricate relationships between anxiety levels and various dimensions of well-being in third-trimester pregnant women. The correlations presented in this table shed light on the interconnectedness of anxiety with perceived stress, sleep quality, and overall quality of life. The strong positive correlations between both state anxiety ($r = 0.62$, $p < 0.001$) and trait anxiety ($r = 0.58$, $p < 0.001$) and perceived stress reveal a clear and significant association between anxiety and the subjective experience of stress in pregnant women. This finding aligns with previous research demonstrating that individuals with higher anxiety levels tend to perceive their lives as more stressful and demanding. This heightened perception of stress can further exacerbate anxiety, creating a vicious cycle that can negatively impact overall well-being. The moderate positive correlations between both state anxiety ($r = 0.45$, $p < 0.01$) and trait anxiety ($r = 0.41$, $p < 0.01$) and sleep problems, as measured by the Pittsburgh Sleep Quality Index (PSQI), underscore the detrimental impact of anxiety on sleep quality in pregnant women. This finding is consistent with a growing body of evidence suggesting that anxiety can disrupt sleep patterns, leading to difficulties falling asleep, staying asleep, and experiencing restorative sleep. Sleep disturbances can further exacerbate anxiety and contribute to a range of physical and psychological health problems. The moderate negative correlations between both state anxiety ($r = -0.53$, $p < 0.001$) and trait anxiety ($r = -0.49$, $p < 0.001$) and quality of life highlight the profound impact of anxiety on overall well-being. This finding suggests that higher levels of anxiety are associated with lower satisfaction with various aspects of life, including physical health, emotional well-being, social relationships, and environmental conditions. This association underscores the importance of addressing anxiety in pregnant women not only to alleviate emotional distress but also to enhance their overall quality of life.

Table 4. Correlations between anxiety levels and secondary outcome measures at follow-up (week 10).

Outcome measure	State anxiety (STAI-S)	Trait anxiety (STAI-T)
Perceived stress (PSS)	r = 0.62***	r = 0.58***
Sleep quality (PSQI)	r = 0.45**	r = 0.41**
Quality of life (QoL)	r = -0.53***	r = -0.49***

At the heart of this study lies the fundamental concept of the mind-body connection, a principle that recognizes the intricate interplay between psychological processes and physiological functioning. During pregnancy, this connection becomes particularly salient as the woman's body undergoes profound transformations to nurture and support the developing fetus. These physiological changes, while essential for fetal growth, can also trigger a cascade of hormonal and neurochemical fluctuations that can contribute to emotional vulnerability and heightened anxiety. The mind, in turn, plays a crucial role in interpreting and responding to these physiological changes. Negative thoughts, worries, and fears can amplify the stress response, leading to elevated cortisol levels and heightened physiological arousal. This can create a vicious cycle in which anxiety perpetuates stress, which in turn fuels further anxiety. Relaxation meditation, as a mind-body practice, offers a powerful tool for interrupting this cycle and promoting a state of physiological and psychological equilibrium. By cultivating present-moment awareness, non-judgmental acceptance of thoughts and feelings, and a sense of inner calm, relaxation meditation can modulate the stress response, reduce physiological arousal, and foster emotional regulation.

The neurobiological mechanisms underlying the anxiolytic effects of relaxation meditation are complex and involve multiple pathways. One key mechanism involves the hypothalamic-pituitary-adrenal (HPA) axis, a central neuroendocrine system that regulates the body's stress response. Chronic stress and anxiety can lead to dysregulation of the HPA axis, resulting in elevated cortisol levels and heightened physiological arousal. Relaxation meditation has been shown to reduce cortisol secretion and promote parasympathetic nervous system activation, both of which contribute to relaxation and stress reduction.[11] Another key mechanism involves changes in brain activity and neural networks associated with emotional regulation. Neuroimaging studies have revealed that regular meditation practice can lead to increased gray matter density in regions of the brain involved in attention, self-awareness, and emotional processing.[12] These changes may enhance emotional regulation, reduce reactivity to stressors, and promote a greater sense of well-being. Additionally, relaxation meditation may influence the levels of neurotransmitters such as gamma-aminobutyric acid (GABA), which plays a crucial role in inhibiting anxiety and promoting relaxation.[13] Studies have shown that meditation can increase GABA levels in the brain, thereby contributing to its anxiolytic effects.

Beyond its neurobiological effects, relaxation meditation also operates through various psychological mechanisms to reduce anxiety. Mindfulness, a core component of many relaxation meditation practices, involves paying attention to the present moment without judgment. This cultivation of non-judgmental awareness can help individuals to disengage from ruminative thoughts and worries, thereby reducing anxiety. Relaxation meditation also teaches individuals to identify and challenge negative thought patterns that contribute to anxiety. By recognizing and reframing these thoughts, individuals can develop a more positive and realistic outlook, thereby reducing their overall anxiety levels. Moreover, relaxation meditation can enhance self-compassion, a key factor in emotional well-being. Self-compassion involves treating oneself with kindness and

understanding, especially in the face of difficulties and setbacks. Research has shown that self-compassion is negatively correlated with anxiety and depression, suggesting that it plays a protective role in mental health.[14]

The findings of this study have significant implications for clinical practice and the integration of relaxation meditation into routine prenatal care. The evidence suggests that relaxation meditation can be a valuable tool for managing anxiety and promoting overall well-being in pregnant women. This is particularly important in the third trimester, when anxiety levels often peak due to physical discomfort, anticipation of childbirth, and concerns about the baby's health. Integrating relaxation meditation into prenatal care could offer numerous benefits for both mothers and babies. For mothers, it could provide a safe and effective alternative or adjunct to pharmacological treatments for anxiety, with minimal risk of adverse effects. It could also empower women to take an active role in managing their mental health during pregnancy, fostering a sense of self-efficacy and control. For babies, the benefits of maternal relaxation meditation may extend to improved fetal development and birth outcomes. Studies have shown that maternal stress and anxiety can negatively impact fetal development, leading to an increased risk of preterm birth, low birth weight, and other complications.[15] By reducing maternal anxiety, relaxation meditation may create a more optimal intrauterine environment for fetal growth and development. The cultural context in which relaxation meditation is practiced is an important consideration. In Indonesia, where the majority of the population is Muslim, it is essential to ensure that relaxation meditation practices are congruent with Islamic beliefs and values. This can involve tailoring the language and imagery used in guided meditations to reflect Islamic concepts of mindfulness, gratitude, and surrender to God's will. Incorporating elements of Islamic spirituality, such as reciting Quranic verses or performing dhikr (remembrance of God), may further enhance the acceptability and effectiveness of relaxation meditation for Muslim women. By integrating relaxation meditation into the cultural and religious fabric of Indonesian society, healthcare providers can create a more inclusive and accessible intervention that resonates with the values and beliefs of the target population.

While this study focused specifically on anxiety in the third trimester of pregnancy, it is important to recognize that maternal mental health is a complex and multifaceted issue that extends beyond this particular time frame and diagnostic category. Anxiety during pregnancy can co-occur with other mental health conditions, such as depression, post-traumatic stress disorder (PTSD), and obsessive-compulsive disorder (OCD).[16] Moreover, the postpartum period is a critical time for maternal mental health, with a significant proportion of women experiencing postpartum depression or anxiety.[17] Relaxation meditation, with its broad-spectrum benefits for emotional regulation, stress reduction, and overall well-being, may have a role to play in addressing a wider range of maternal mental health concerns. Future research should explore the potential of relaxation meditation as an adjunctive treatment for various perinatal mental health conditions, both during pregnancy and in the postpartum period. It would also be valuable to investigate the long-term effects of relaxation meditation on maternal mental health trajectories, including the prevention of postpartum depression and anxiety.[18-20]

4. Conclusion

The findings of this study underscore the transformative potential of relaxation meditation in mitigating anxiety and enhancing well-being in third-trimester pregnant women. This mind-body practice not only reduces immediate feelings of anxiety but also fosters enduring changes in emotional reactivity, stress perception, sleep quality, and overall quality of life. These findings have significant implications for

clinical practice, suggesting that relaxation meditation should be considered a valuable component of comprehensive prenatal care.

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