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Effect of Benson Relaxation on Anxiety Levels Among Third-Trimester Pregnant Women

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Abstract

Background: Anxiety commonly increases during the third trimester as concerns about childbirth, fetal condition, pain, and uncertainty intensify. Benson relaxation is a simple non-pharmacological technique that combines slow breathing, focused attention, and a calming word or phrase. Purpose: This study aimed to determine the effect of Benson relaxation on anxiety levels among third-trimester pregnant women. Methods: A quantitative pre-experimental one-group pretest-posttest design was used. Forty primigravida women were selected through purposive sampling. Anxiety was assessed using a modified 20-item State-Trait Anxiety Inventory Form Y-2 before and after Benson relaxation. Because pretest and posttest scores were not normally distributed, the Wilcoxon signed-rank test was applied. Results: Before the intervention, 67.5% of participants had high anxiety and 32.5% had moderate anxiety. After the intervention, 57.5% had low anxiety and 42.5% had moderate anxiety; no participant remained in the high-anxiety category. Thirty-seven participants had lower posttest scores, three had ties, and none had higher scores. The pretest-posttest difference was statistically significant ($Z = -5.516$; $p < 0.001$). Conclusion: Benson relaxation was followed by a significant reduction in anxiety among third-trimester primigravida women and may be considered as a practical non-pharmacological adjunct in antenatal care.

Keywords: Anxiety, Benson relaxation, Pregnancy, Third trimester

Introduction

Pregnancy is a physiological transition accompanied by substantial physical and psychological adaptation. Anxiety becomes particularly relevant in the third trimester, when concerns about childbirth, fetal condition, pain, and uncertainty about the delivery process tend to intensify. Studies in Indonesia and other low- and middle-income settings show that anxiety during pregnancy remains an important maternal mental-

health concern. [1-4]

If not adequately managed, anxiety may be accompanied by sleep disturbance, autonomic symptoms, muscle tension, reduced concentration, and lower psychological readiness for childbirth. Primigravida women may be especially vulnerable because they have no previous childbirth experience and must adapt to an unfamiliar process. Antenatal education and psychological support are therefore important components of comprehensive maternity care. [5-8]

Non-pharmacological approaches are relevant during pregnancy because they can support emotional regulation without adding medication exposure. Breathing exercises and mind-body relaxation techniques have been used to reduce tension and anxiety in pregnant women. Benson relaxation combines slow breathing, conscious muscle relaxation, focused attention, and repetition of a calming word or phrase that may be adapted to the individual's beliefs. This technique is simple, requires no special equipment, and can be taught for independent practice. [9-11]

Previous studies cited in the thesis reported reduced anxiety after Benson relaxation among third-trimester pregnant women, including studies in midwifery and primary-care settings. Nevertheless, structured Benson relaxation had not been routinely implemented at the study site, and local evidence was limited. Therefore, this study aimed to determine the effect of Benson relaxation on anxiety levels among third-trimester pregnant women. [10,12,13]

Method

Research design

This quantitative study used a pre-experimental one-group pretest-posttest design. Anxiety was measured in the same participants before and after the Benson relaxation intervention. The study was conducted from March to April 2026.

Setting and samples

The study was conducted at a primary health center in Garut Regency, West Java, Indonesia. The source population comprised 374 third-trimester pregnant women. The sample size was determined using the Slovin formula with a significance level of 0.15, resulting in 40 participants. Nonprobability purposive sampling was used. Inclusion criteria were third-trimester pregnancy, primigravida status, residence in the health center's service area, anxiety identified during initial screening, ability to communicate

and understand instructions, and willingness to provide written informed consent. Exclusion criteria were severe pregnancy complications or serious medical disorders, current pharmacological therapy specifically for anxiety, failure to complete the intervention, or incomplete STAI questionnaires.

Intervention

The intervention was provided by the researcher according to the study standard operating procedure. Participants were placed in a quiet and comfortable environment and asked to sit or lie in a comfortable position. They selected a calming word or phrase consistent with their beliefs, closed their eyes, relaxed the muscles gradually, breathed slowly through the nose, and exhaled through the mouth while repeating the chosen word or phrase. Attention was returned to the breath and the focus word whenever distracting thoughts emerged. The relaxation condition was maintained for 10-20 minutes. Posttest anxiety was measured after completion of the intervention.

Measurement and data collection

Anxiety was measured using a modified State-Trait Anxiety Inventory (STAI) Form Y-2 consisting of 20 items adapted to the context of third-trimester pregnancy. Each item used a four-point Likert response. Positive items were scored 1-4 and negative items were reverse-scored 4-1, yielding a total score of 20-80. Anxiety was categorized as low (<40), moderate (40-60), or high (>60). Before use in the main study, the modified questionnaire was tested in 30 respondents outside the study sample. All 20 items had item-total correlation coefficients greater than the r-table value of 0.361, and Cronbach's alpha was 0.891. Pretest and posttest data were collected by the researcher with assistance from health personnel who had been informed about the study procedures. [14,15]

Data analysis

Univariate analysis summarized anxiety levels before and after the intervention. Normality was assessed using the Shapiro-Wilk test because the sample size was below 50. Both pretest and posttest anxiety scores were non-normally distributed ($p < 0.001$); therefore, the Wilcoxon signed-rank test was used to compare paired measurements. Statistical significance was set at alpha = 0.05.

Results

Forty third-trimester primigravida women completed the study. Before Benson relaxation, high anxiety was the most common category, whereas after the intervention low anxiety became the most common category and no participant remained in the high-anxiety category (Table 1).

Table 1

Distribution of anxiety levels before and after Benson relaxation

Anxiety level	Pretest n	Pretest %	Posttest n	Posttest %
Low	0	0.0	23	57.5
Moderate	13	32.5	17	42.5
High	27	67.5	0	0.0
Total	40	100.0	40	100.0

The Wilcoxon signed-rank analysis showed lower posttest anxiety scores in 37 participants, no increase in any participant, and ties in three participants. The paired difference was statistically significant ($Z = -5.516$; $p < 0.001$) (Table 2).

Table 2

Wilcoxon signed-rank analysis of anxiety scores before and after Benson relaxation

Category	N	Mean rank	Sum of ranks	Z	p-value
Negative ranks	37	19.00	703.00	-5.516	<0.001
Positive ranks	0	0.00	0.00		
Ties	3	-	-		
Test statistic	-	-	-		

Discussion

The main finding was a marked shift toward lower anxiety after Benson relaxation. Before the intervention, anxiety was concentrated in the high category, which is consistent with the psychological demands commonly experienced in late pregnancy, particularly among primigravida women. Concerns about the approaching delivery, fetal well-being, pain, and unfamiliarity with childbirth can contribute to heightened anxiety during this period. [4-6]

The reduction observed after Benson relaxation is physiologically and psychologically plausible. The technique is intended to reduce sympathetic arousal while supporting parasympathetic activity through slow breathing, conscious muscle relaxation, and focused attention. The repeated focus word or phrase may also redirect attention away from worry and promote a calmer mental state. Evidence from relaxation interventions during pregnancy supports beneficial effects on maternal mental health. [10,11]

The present findings are consistent with previous studies cited in the thesis. Nelli reported a significant reduction in anxiety among third-trimester pregnant women after Benson relaxation, while Rahmizani and Lestari found that Benson and autogenic relaxation were effective in reducing anxiety. Tantri et al. also reported that Benson relaxation reduced anxiety among third-trimester pregnant women in a primary-care setting. [10,12,13]

From a service perspective, Benson relaxation is practical because it requires no special equipment and the documented procedure can be completed within 10-20 minutes. It may therefore be incorporated as a supportive non-pharmacological strategy in antenatal care, alongside education, counseling, and other approaches to psychological support. However, the observed pretest-posttest difference should be interpreted in light of the pre-experimental design and should not be taken as definitive causal evidence. [8,9]

Limitation

This study used a pre-experimental one-group design without a control group, limiting causal inference and making it difficult to separate the intervention effect from other influences. The researcher also could not fully control participants' adherence, concentration, focus, and engagement during each stage of Benson relaxation. Other factors that may influence anxiety, such as family support, knowledge, socioeconomic conditions, and psychological support outside the intervention, were not analyzed. The study was conducted in one primary-care setting, which may limit generalizability.

Conclusion

Among 40 primigravida women in the third trimester, anxiety levels shifted from predominantly high before Benson relaxation to predominantly low after the intervention. Thirty-seven participants showed lower posttest anxiety scores, none showed an increase, and the difference between pretest and posttest scores was statistically significant ($Z = -5.516$; $p < 0.001$). These findings indicate that Benson relaxation may be considered a simple and practical non-pharmacological intervention to support anxiety management in antenatal care. Further studies using controlled designs and larger samples are recommended to strengthen the evidence regarding its effectiveness.

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of Poltekkes Kemenkes Tasikmalaya (No. DP.04.03/F.XVIII.1.3.1/950/2026). All participants received written information regarding the study objectives, procedures, potential benefits, and possible risks before participation and provided written informed consent. Participants' privacy, anonymity, confidentiality, fair treatment, protection from discomfort or harm, beneficence, non-maleficence, and right to withdraw from the study at any time without consequences were maintained throughout the research process.

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Conflict of Interest

The authors declare that there is no conflict of interest related to this study and the publication of this manuscript.

Author Contribution

Anggi Ismayanti contributed to the conceptualization of the study, investigation, data collection, formal analysis, interpretation of the findings, and preparation of the original manuscript draft. Yayah Sopiyanah contributed to supervision, methodological guidance, review, and critical revision of the manuscript. Sariestya Rismawati contributed to supervision, methodological guidance, review, and editing of the manuscript. All authors reviewed and approved the final version of the manuscript.

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