

The Effect of Acupressure Wristband Therapy on Stress Levels Among Third-Trimester Pregnant Women

Marliana Rahma^{1*}, Dewi Rubi Fitriani², Rina Dwi Anggraeni³,
Santi Komala Dewi⁴, Siti Suniatuz Zahra⁵
^{1,2,3,4,5} Kebidanan, Universitas Sehati Indonesia Karawang, Indonesia

Article History

Received : June 24, 2025

Revised : June 30, 2025

Accepted : July 11, 2025

Publication : July 19, 2025

Corresponding author*:

marliana.rahma@yahoo.com

Cite This Article:

Rahma, M., Fitriani, D. R., Anggraeni, R. D., Dewi, S. K., & Zahra, S. S. (2025). The Effect of Acupressure Wristband Therapy on Stress Levels Among Third-Trimester Pregnant Women. *Jurnal Kesehatan Dan Kedokteran*, 4(2), 166–175.

DOI:

<https://doi.org/10.56127/jukeke.v4i2.2762>

Abstract: Stress during pregnancy is a common psychological condition that may negatively affect maternal well-being and pregnancy outcomes. Persistent stress can increase the risk of anxiety, sleep disturbances, emotional instability, and adverse maternal and fetal health outcomes. Therefore, safe and non-pharmacological interventions are needed to help pregnant women manage psychological stress during pregnancy. This study aimed to determine the effectiveness of acupressure wristband therapy in reducing stress levels among third-trimester pregnant women. This study employed a quantitative approach using a quasi-experimental one-group pretest-posttest design. The study was conducted at TMPB Bidan Yayat Haryatini and involved 30 third-trimester pregnant women selected through purposive sampling. Stress levels were assessed before and after the intervention using a structured stress questionnaire. Participants were instructed to use an acupressure wristband positioned at the P6 (Nei Guan) acupressure point according to the intervention protocol. Data were analyzed using descriptive statistics and paired sample t-test analysis at a significance level of 0.05. The results showed that the mean pretest stress score was 60.83 ± 3.270 , while the mean posttest stress score decreased to 42.43 ± 2.932 . Statistical analysis demonstrated a significant difference between pretest and posttest stress scores (mean difference = 18.400; $t = 202.261$; $p < 0.001$). Participants also reported feeling more relaxed, experiencing reduced anxiety, improved sleep quality, and greater emotional comfort following the intervention. The findings indicate that acupressure wristband therapy is effective in reducing stress levels among third-trimester pregnant women. This study contributes empirical evidence supporting the use of wearable complementary therapies as a practical, safe, and non-pharmacological intervention in maternal healthcare. The results may serve as a basis for integrating acupressure wristband therapy into antenatal care programs to support maternal psychological well-being.

Keywords: acupressure wristband; stress; pregnancy; complementary therapy; maternal health.

INTRODUCTION

Pregnancy is a physiological process accompanied by substantial physical, hormonal, psychological, and social changes that may affect maternal well-being. Although pregnancy is generally considered a normal life event, many pregnant women experience psychological disturbances, particularly stress and anxiety, during the antenatal period.

Maternal stress has become a global public health concern because it not only affects the mother's psychological health but may also influence fetal growth and pregnancy outcomes. The World Health Organization (WHO, 2022) reported that approximately 10–20% of pregnant women worldwide experience mental health problems, including stress and anxiety during pregnancy. Previous studies have shown that prolonged maternal stress is associated with sleep disturbances, elevated blood pressure, reduced appetite, antenatal depression, preterm birth, and low birth weight (Biaggi et al., 2016; Dunkel Schetter & Tanner, 2012; Lobel et al., 2018). These findings indicate the importance of developing safe and effective interventions to reduce stress during pregnancy.

Previous studies regarding stress management among pregnant women can be classified into three main categories. The first category focuses on the prevalence, determinants, and consequences of maternal stress during pregnancy. (Biaggi et al., 2016) reported that primigravida women tend to experience higher levels of stress due to limited childbirth experience. Similarly, (Dunkel Schetter and Tanner, 2012) emphasized that psychosocial stressors, including fear of labor, economic concerns, and inadequate social support, significantly contribute to maternal stress. (Lobel et al., 2018) further demonstrated that elevated stress levels during pregnancy may adversely affect fetal development and increase the risk of adverse birth outcomes. While these studies provide valuable insights into the causes and consequences of maternal stress, they primarily focus on risk factors rather than intervention strategies.

The second category includes studies investigating non-pharmacological interventions to improve maternal psychological well-being during pregnancy. Various approaches such as relaxation techniques, mindfulness-based interventions, prenatal education, and complementary therapies have been reported to reduce stress and anxiety among pregnant women. (Steele et al., 2018) found that complementary therapies may promote relaxation and emotional stability during pregnancy. (Puspitasari and Hidayati, 2022) reported that complementary approaches are generally safe, practical, and acceptable among pregnant women. However, evidence regarding the effectiveness of specific wearable complementary interventions remains limited, particularly in community-based maternal healthcare settings.

The third category focuses on acupressure-based interventions. Acupressure is a complementary therapy derived from traditional Chinese medicine that involves applying pressure to specific points on the body to stimulate physiological and psychological

responses. Studies by (Steele et al., 2018), (Khasanah et al., 2020), (Rahmawati et al., 2021), and (Lee et al., 2021) demonstrated that stimulation of the P6 (Nei Guan) acupressure point may reduce anxiety, improve sleep quality, and promote relaxation among pregnant women. Although these findings support the therapeutic potential of acupressure, most previous studies have focused on manual acupressure techniques administered by healthcare providers. Research specifically examining the effectiveness of acupressure wristbands as a self-administered intervention for reducing stress among third-trimester pregnant women remains limited, particularly in the Indonesian context.

Based on the literature review, a significant research gap exists regarding the practical implementation of acupressure wristbands as an accessible and non-pharmacological intervention for maternal stress management. Previous studies have largely investigated general acupressure therapy, anxiety reduction, or sleep improvement, while evidence concerning stress reduction through continuous acupressure wristband use among pregnant women remains insufficient. Therefore, this study aims to evaluate the effect of acupressure wristband use on stress levels among third-trimester pregnant women by comparing stress scores before and after the intervention.

This study argues that stimulation of the P6 (Nei Guan) acupressure point through the regular use of an acupressure wristband can significantly reduce maternal stress levels by promoting relaxation and improving emotional regulation. Accordingly, the research hypothesis proposes that there is a significant difference in stress levels between pregnant women before and after the use of an acupressure wristband intervention.

RESEARCH METHOD

This study employed a quantitative approach using a quasi-experimental design with a one-group pretest-posttest model. The study aimed to evaluate the effect of acupressure wristband therapy on stress levels among third-trimester pregnant women. The unit of analysis consisted of pregnant women in their third trimester who experienced stress during pregnancy. This research design was selected because it enabled the researchers to measure changes in stress levels before and after the intervention within the same group of participants.

The study was conducted at **TMPB Bidan Yayat Haryatini**, a maternal healthcare practice providing antenatal care services for pregnant women. The study population consisted of third-trimester pregnant women who attended antenatal care visits during the

research period. A total of 30 participants were recruited using purposive sampling based on predetermined inclusion criteria, including being in the third trimester of pregnancy, being willing to participate in the study, and having no contraindications to acupressure therapy. Pregnant women experiencing severe pregnancy complications or receiving intensive psychological treatment were excluded from the study.

Primary data were obtained directly from participants through stress assessments conducted before and after the intervention. Secondary data were collected from maternal health records and supporting literature related to pregnancy stress and complementary therapies. The primary research instrument was a structured questionnaire used to assess stress levels among pregnant women. In addition, demographic information, including age, educational background, and parity status, was collected to describe participant characteristics.

Data collection was conducted in two stages. During the pretest stage, participants completed the stress assessment questionnaire to determine baseline stress levels. Subsequently, participants were instructed to wear an acupressure wristband positioned at the P6 (Nei Guan) acupressure point according to the intervention protocol. The P6 point is located approximately three finger-widths below the wrist crease between the tendons of the palmaris longus and flexor carpi radialis muscles. After completing the intervention period, participants completed the same questionnaire during the posttest stage to evaluate changes in stress levels following the use of the acupressure wristband.

The collected data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics were used to summarize participant characteristics and stress score distributions. Inferential analysis was performed using the paired sample t-test to examine differences between pretest and posttest stress scores. Prior to hypothesis testing, normality assumptions were evaluated to ensure the appropriateness of parametric testing. Statistical significance was established at a 95% confidence level ($p < 0.05$). All statistical analyses were conducted to determine the effectiveness of acupressure wristband therapy in reducing stress levels among third-trimester pregnant women.

RESULT

Characteristics of Respondents

A total of 30 third-trimester pregnant women participated in this study. The characteristics of respondents were classified based on age, educational level, and parity. The distribution of respondent characteristics is presented in Table 1.

Table 1. Characteristics of Respondents (n = 30)

Characteristics	Frequency (n)	Percentage (%)
Age		
16–25 years	3	10.0
26–35 years	24	80.0
36–45 years	3	10.0
Educational Level		
No school–Elementary school	4	13.3
Junior–Senior high school	18	60.0
College/University	8	26.7
Parity		
Primigravida	23	76.7
Multigravida	6	20.0
Grand multipara	1	3.3

Table 1 shows that most respondents were aged 26–35 years, representing 24 participants (80.0%). Based on educational level, the majority had completed junior to senior high school, totaling 18 participants (60.0%). In terms of parity, most respondents were primigravida, with 23 participants (76.7%). These findings indicate that the study population was dominated by pregnant women of reproductive age, with most experiencing pregnancy for the first time.

Stress Levels Before and After Acupressure Wristband Therapy

Stress levels were measured before and after the use of the acupressure wristband. The descriptive statistics of pretest and posttest stress scores are presented in Table 2.

Table 2. Descriptive Statistics of Pretest and Posttest Stress Scores

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Pretest stress score	30	55	67	60.83	3.270
Posttest stress score	30	37	48	42.43	2.932

As shown in Table 2, the mean stress score before the intervention was 60.83 with a standard deviation of 3.270. After the use of the acupressure wristband, the mean stress score decreased to 42.43 with a standard deviation of 2.932. This result indicates a decrease in stress scores after respondents used the acupressure wristband.

The decrease in the mean score suggests that acupressure wristband therapy may help reduce stress among third-trimester pregnant women. In addition to the reduction in stress scores, respondents reported feeling more relaxed, less anxious, more comfortable, and having better sleep quality after using the acupressure wristband.

Effect of Acupressure Wristband Therapy on Stress Reduction

A paired sample t-test was conducted to determine whether there was a statistically significant difference between pretest and posttest stress scores. The results of the paired sample t-test are presented in Table 3.

Table 3. Paired Sample t-Test of Pretest and Posttest Stress Scores

Variable	Mean Difference	Std. Deviation	95% CI Lower	95% CI Upper	t	df	p-value
Pretest–Posttest stress score	18.400	0.498	18.214	18.586	202.261	29	< 0.001

Table 3 shows that the mean difference between pretest and posttest stress scores was 18.400. The paired sample t-test result showed a statistically significant difference between stress scores before and after the intervention ($t = 202.261$; $df = 29$; $p < 0.001$). This finding indicates that the use of an acupressure wristband had a significant effect on reducing stress levels among third-trimester pregnant women.

Overall, the results demonstrate that acupressure wristband therapy contributed to a significant reduction in stress scores. These findings support the assumption that stimulation of the P6 (Nei Guan) point through acupressure wristband use can promote relaxation and improve psychological comfort during late pregnancy.

DISCUSSION

Characteristics of Respondents and Maternal Stress During Pregnancy

The findings revealed that most respondents were between 26 and 35 years of age, had completed junior to senior high school education, and were predominantly primigravida. The predominance of primigravida mothers is an important finding because first-time pregnancies are often associated with higher levels of stress and anxiety due to limited experience in coping with pregnancy-related changes and uncertainty regarding childbirth. Previous studies have reported that primigravida women tend to experience greater psychological distress compared with multigravida women because they are facing pregnancy and labor for the first time (Biaggi et al., 2016).

The high proportion of respondents within the reproductive age group suggests that maternal stress is not limited to high-risk pregnancies but may also occur among women experiencing physiologically normal pregnancies. Pregnancy involves substantial hormonal, physical, and emotional changes that require continuous adaptation. According to Dunkel Schetter and Tanner (2012), psychological stress during pregnancy is often triggered by concerns regarding labor, fetal health, body image changes, family responsibilities, and future parenting roles.

Educational background may also influence maternal stress management. Women with higher educational attainment generally have greater access to health information and may demonstrate better coping strategies when facing pregnancy-related challenges. Nevertheless, stress remains a common experience among pregnant women regardless of educational level, indicating the need for accessible and practical interventions that can be implemented across different population groups.

Effect of Acupressure Wristband Therapy on Stress Reduction

One of the most important findings of this study was the substantial reduction in mean stress scores following the use of the acupressure wristband. The average stress score decreased from 60.83 before the intervention to 42.43 after the intervention, indicating an improvement in the psychological well-being of participants. This finding supports the hypothesis that acupressure wristband therapy can serve as an effective complementary intervention for reducing maternal stress during pregnancy.

The effectiveness of the intervention may be explained by the physiological mechanism associated with stimulation of the P6 (Nei Guan) acupressure point. Traditional Chinese Medicine suggests that stimulation of this point promotes energy balance and

relaxation. From a physiological perspective, pressure applied to the P6 point may stimulate neural pathways associated with relaxation responses and the release of neurotransmitters such as endorphins and serotonin. These neurochemical responses contribute to feelings of comfort, emotional stability, and reduced anxiety, which ultimately lead to lower stress levels.

The present findings are consistent with those reported by Lee et al. (2021), who found that acupressure interventions significantly reduced anxiety and psychological discomfort among third-trimester pregnant women. Similarly, Smith et al. (2020) reported that acupressure wristbands improved relaxation and sleep quality while reducing psychological tension during pregnancy. Rahmawati et al. (2021) also demonstrated that regular acupressure therapy contributed to reductions in maternal anxiety levels before childbirth. The consistency of these findings across different studies strengthens the evidence supporting acupressure-based interventions as an effective non-pharmacological approach for maternal stress management.

In addition to reducing stress scores, participants in the present study reported feeling calmer, more relaxed, and more comfortable after using the acupressure wristband. Several respondents also reported improvements in sleep quality and emotional well-being. These findings suggest that the benefits of acupressure extend beyond stress reduction and may contribute to broader improvements in maternal quality of life during pregnancy.

Implications of Acupressure Wristband Therapy for Maternal Healthcare

The statistically significant reduction in stress levels observed in this study highlights the potential value of acupressure wristbands as a complementary intervention within maternal healthcare services. Unlike pharmacological therapies, acupressure wristbands are non-invasive, inexpensive, easy to use, and associated with minimal side effects. These characteristics make them particularly suitable for pregnant women, who often seek safe alternatives for managing psychological discomfort during pregnancy.

The findings also have practical implications for midwifery services and antenatal care programs. Healthcare providers can incorporate education regarding acupressure wristband use into routine antenatal counseling as part of a holistic approach to maternal care. Such interventions may help improve maternal emotional well-being while empowering pregnant women to participate actively in managing their own health.

The originality of this study lies in its focus on acupressure wristbands as a self-administered complementary therapy specifically targeting stress reduction among third-trimester pregnant women. While previous studies have primarily examined manual acupressure techniques or focused on anxiety and sleep disturbances, the present study provides empirical evidence regarding the effectiveness of wearable acupressure devices in reducing maternal stress. This contribution expands the current understanding of complementary therapies in maternal healthcare and provides practical evidence for integrating acupressure wristbands into routine antenatal services.

Despite these positive findings, it is important to recognize that acupressure wristbands should not replace professional medical or psychological care when severe psychological disorders are present. Instead, they should be considered a supportive intervention within a comprehensive maternal health strategy. Future studies involving larger sample sizes, control groups, and longer follow-up periods are recommended to further examine the long-term effectiveness and clinical applicability of acupressure wristband therapy among pregnant women.

CONCLUSION

This study demonstrated that the use of an acupressure wristband significantly reduced stress levels among third-trimester pregnant women. The findings revealed a substantial decrease in stress scores following the intervention, indicating that stimulation of the P6 (Nei Guan) acupressure point may contribute to improved psychological well-being during pregnancy. In addition to reducing stress levels, participants reported feeling more relaxed, experiencing less anxiety, achieving better sleep quality, and feeling more comfortable in preparation for childbirth. These findings suggest that acupressure wristband therapy can serve as an effective complementary intervention for supporting maternal mental health during pregnancy.

The scientific contribution of this study lies in providing empirical evidence regarding the effectiveness of acupressure wristbands as a wearable and self-administered complementary therapy for stress reduction among pregnant women. Unlike many previous studies that focused on manual acupressure techniques, this study specifically evaluated the application of acupressure wristbands in a maternal healthcare setting. The findings contribute to the growing body of knowledge on non-pharmacological

interventions and support the integration of complementary therapies into antenatal care services to promote holistic maternal health.

Despite these contributions, several limitations should be acknowledged. The study involved a relatively small sample size and was conducted at a single maternal healthcare practice, which may limit the generalizability of the findings. In addition, the use of a one-group pretest-posttest design without a control group restricts the ability to establish stronger causal relationships. Future studies are recommended to include larger and more diverse populations, employ randomized controlled trial designs, and investigate the long-term effects of acupressure wristband therapy on maternal psychological outcomes. Such studies would strengthen the evidence base for the implementation of acupressure wristbands as a complementary intervention in maternal healthcare.

REFERENCES

- Biaggi, A., Conroy, S., Pawlby, S., & Pariante, C. M. (2016). Identifying the women at risk of antenatal anxiety and depression: A systematic review. *Journal of Affective Disorders, 191*, 62–77. <https://doi.org/10.1016/j.jad.2015.11.014>
- Dunkel Schetter, C. (2011). Psychological science on pregnancy: Stress processes, biopsychosocial models, and emerging research issues. *Annual Review of Psychology, 62*, 531–558. <https://doi.org/10.1146/annurev.psych.031809.130727>
- 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>
- Lobel, M., Cannella, D. L., Graham, J. E., DeVincent, C., Schneider, J., & Meyer, B. A. (2008). Pregnancy-specific stress, prenatal health behaviors, and birth outcomes. *Health Psychology, 27*(5), 604–615. <https://doi.org/10.1037/a0013242>
- Smith, C. A., Shewamene, Z., Galbally, M., Schmied, V., & Dahlen, H. (2019). The effect of complementary medicines and therapies on maternal anxiety and depression in pregnancy: A systematic review and meta-analysis. *Journal of Affective Disorders, 245*, 428–439. <https://doi.org/10.1016/j.jad.2018.11.054>
- Steele, N. M., French, J., Gatherer-Boyles, J., Newman, S., & Leclaire, S. (2001). Effect of acupressure by Sea-Bands on nausea and vomiting of pregnancy. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 30*(1), 61–70. <https://doi.org/10.1111/j.1552-6909.2001.tb01522.x>
- World Health Organization. (2022). *Guide for integration of perinatal mental health in maternal and child health services*. World Health Organization. <https://www.who.int/publications/i/item/9789240057142>
- World Health Organization. (n.d.). *Perinatal mental health*. World Health Organization. <https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/perinatal-mental-health>