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The Effectiveness of Health Education in Reducing Anxiety Levels in Primigravida Trimester III

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ABSTRACT

The study purpose was Anxiety in primigravida pregnant women in the third trimester is a common condition and can interfere with psychological readiness in caring for newborns. This study aims to analyze the influence of health education on the level of primigravida anxiety in the third trimester at the Panasea Inpatient Main Clinic.

Materials and methods. The study used a *quasi-experiment*al design with *a one-group pretest–posttest* design and included 40 respondents selected through *accidental sampling*. Interventions were carried out through structured counseling on newborn care. Anxiety levels were measured using the Hamilton Anxiety Rating Scale (HAM-A) instrument.

Results. Wilcoxon test analysis showed $p = 0.000$ ($\alpha < 0.05$), indicating a significant decrease in anxiety levels after health education. Before the intervention, the majority of respondents experienced moderate to severe anxiety, while after the intervention, most showed a decrease to mild anxiety levels. These findings show that health education is effective as a promotive and preventive intervention to reduce maternal anxiety and increase readiness to face the role of parent.

Conclusions. This research supports integrating health education into routine antenatal programs to improve maternal health.

Keywords: Health Education, Anxiety, Primigravida, Trimester III, Newborn Care

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INTRODUCTION

Anxiety in pregnant women, especially in the third-trimester primigravida, is a maternal health issue that continues to be a global concern because of its impact on the psychological readiness of mothers in facing childbirth and caring for newborns. The World Health Organization reports that about 10 percent of pregnant women and 13 percent of postpartum mothers experience mental disorders, especially anxiety and depression. This figure increased significantly in developing countries, reaching 15.6 percent during pregnancy and 19.8 percent after childbirth (Simpson, 2022). Meanwhile, the prevalence of anxiety in pregnant women in Indonesia is found in the phase approaching childbirth (Ariasih et al., 2024; Kurniawati et al., 2025; Wibowo et al., 2023). Primigravida is the most vulnerable group because they do not have experience caring for babies, so uncertainty, lack of information, and hormonal changes trigger increased anxiety (Ali et al., 2024; Amin et al., 2024; Bist et al., 2025). Preliminary study data from the Panasea Inpatient Main Clinic showed that most primigravida lacked adequate knowledge of newborn care and expressed concerns and fears about assuming parental responsibilities.

Scientific studies over the last five years have shown that health education can play a significant role in improving pregnant women's cognitive and emotional readiness. Research conducted by Nikoozad et al. (2024) found that educational interventions regarding newborn care contributed to a meaningful reduction in primipara anxiety after counseling sessions. Other research was also conducted by Gandomi et al. (2022). A similar pattern was shown in which primigravida mothers showed higher levels of anxiety than experienced mothers, but the anxiety decreased after

educational intervention was given. In addition, research by Cheng et al. (2023) revealed that increasing health literacy through education classes enhances maternal knowledge and fosters emotional readiness for the postpartum period. These findings are consistent with the theory of psychological adaptation, which states that anxiety can be controlled through increased knowledge, coping skills, and structured educational support (Huang et al., 2022; Shengyao et al., 2024; Shimony et al., 2022). However, several studies, such as Camacho et al. (2021), emphasize that the social support variable also plays an important role in reducing anxiety. Thus, health education not only serves as a means of information transfer but also as a psychological stimulus for adaptation to the role of parenting.

Although much research has been done on maternal anxiety, there is a gap in the context of the implementation of clinically-based educational interventions that are administered directly to primigravida in the third trimester. Most previous studies have focused on community-based pregnant women classes or virtual interventions, while health facility-based implementations have been limited. In addition, most studies did not conduct a quantitative evaluation using pretests that measured anxiety with a valid instrument, such as the Hamilton Anxiety Rating Scale (HAM-A). This gap underscores the need for research that quantifies the concrete impact of health education interventions on primigravida using a controlled experimental design, particularly in primary health facilities such as inpatient clinics. This study fills this gap by examining the effectiveness of health education interventions for anxiety in primigravida women in the third trimester through objective measurements using a quasi-experimental design.

This study aims to analyze the influence of health education on the level of primigravida anxiety in the third trimester in caring for newborns at the Panasea Inpatient Main Clinic. Specifically, this study measured anxiety levels before and after educational interventions to determine the psychological changes that occurred after the delivery of newborn care materials. The results of this research are expected to make a theoretical and practical contribution to strengthening education-based antenatal programs.

The primary focus of this study is to evaluate the effectiveness of structured material-based health education interventions in reducing maternal primigravida anxiety in the third trimester. With a pretest–posttest experimental approach, this study examines changes in anxiety scores using HARS and interprets the results in the context of maternal anxiety theory and related empirical literature. The findings of this study are intended to serve as the basis for the development of standardized antenatal programs responsive to the emotional needs of primigravida in primary health facilities.'

METHOD

This study used a quasi-experimental one-group pretest–posttest design to assess changes in anxiety levels before and after health education interventions (Harriman et al., 2023; Lai et al., 2023; Ventura et al., 2021). This design provides an opportunity to observe differences in scores within the same group without comparing them to the control group. The intervention was delivered through structured material on newborn care before the posttest. The study population included all primigravida in trimester III who underwent examinations at the Panasea Inpatient Main Clinic, totaling 40 individuals. The sampling technique uses total sampling based on accidental sampling (Ahmad & Wilkins, 2025; Andrade, 2021; Zickar & Keith, 2023). Respondents who attended, met the inclusion criteria, and signed informed consent were included in the sample. Inclusion criteria include being a primigravida in the third trimester, being able to read instruments, and being willing to participate in all stages of the research.

The research variables included health education as the independent variable and anxiety as the dependent variable. Anxiety levels were measured using the Hamilton Anxiety Rating Scale (HARS) with a score range of 0 to 56 and categories ranging from no anxiety to severe anxiety. Health education variables were measured by assessing the implementation of structured education via SAP and evaluating improvements in knowledge after the intervention. The operational indicators of the two variables are shown in Table 1.

Table 1. Operational Definition of Research Variables

Variable	Operational Definition	Indicator	Instrument	Scale	Scoring
Anxiety (Dependent Variable)	A psychological and physiological response characterized by fear, tension, and physical symptoms resulting from perceived worry.	14 HARS indicators	HARS Questionnaire	Ordinal	0–56
Health Education (Independent Variable)	Structured educational intervention regarding newborn care intended to improve mothers' knowledge.	SAP educational content	SAP and Posttest	-	-

The research instrument was tested through validity and reliability tests using trial respondents (Ahmed, 2024). The test results showed that the calculated r value was higher than the r value in the Table, indicating that the instrument was considered valid, and the reliability value above 0.63 indicated that the instrument was in the reliable category. The data collection process is carried out through the following stages: submission of research information, participation approval, pretest implementation, educational intervention, and posttest. Data analysis included univariate analyses to describe respondent characteristics, as well as bivariate analyses using the Wilcoxon test with a significance level of $p < 0.05$ to assess changes before and after the intervention (Chicco et al., 2025; Ilyas et al., 2024). The research received ethical approval from the authorized institution, and the entire series of procedures was carried out in accordance with the ethical principles of the research, including the confidentiality of respondents' identities and the freedom of respondents to participate.

FINDING AND DISCUSSION

Characteristics of Respondents by Age

The characteristics of the respondents were analyzed across several fundamental aspects to provide an initial picture of the participants' condition. Age is a significant concern, as age differences are often related to physical readiness and emotional stability during pregnancy. In the context of maternal health services, this information helps understand the different support needs across age groups. The age distribution of respondents is listed in Table 2.

Table 2. Frequency Distribution of Respondents by Age

Yes	Age Category	Frequency (F)	Percentage (%)
1	< 20 years	12	30.0
2	20–35 years	21	52.5
3	> 35 years	7	17.5
Total		**40**	**100**

Source: Primary Data (2025)

Based on the data in Table 2, the 20-35-year-old age group is the largest, with 21 respondents (52.5%). Respondents aged 20 or younger accounted for 12 people, or 30 percent of respondents. Meanwhile, respondents aged 35 or older numbered 7, or 17.5 percent. The total number of research participants reached 40 people. The predominance of respondents aged 20–35 indicates that most are in the reproductive stage, which generally has a more stable physical readiness, which can affect how they respond to the pregnancy process.

Characteristics of Respondents Based on Education

The respondents' last education provided an overview of their capacity to receive and process information during the intervention. The level of education affected how respondents understood the material, including knowledge related to newborn care. The distribution of respondents' education levels is presented in Table 3.

Table 3. Distribution of Respondents by Educational Level

Yes	Education Level	Frequency (f)	Percentage (%)
1	Junior High School	11	27.5
2	Senior High School	19	47.5

3	Higher Education	10	25
Total		**40**	**100**

Source: Primary Data (2025)

Table 3 shows that the respondents' education levels exhibit apparent variation. The largest group came from the high school level, with 19 respondents (47.5 percent). This composition indicates that almost half of the participants had an adequate educational background to follow the research instructions effectively. A total of 11 respondents, or 27.5 percent, came from the Junior High School level. This group remains an important contributor, as literacy skills vary in how they ask questions and respond to intervention materials. Respondents with higher education numbered 10, or 25 percent, indicating participants with broader academic experience.

Characteristics of Respondents Based on Occupation

The respondents' jobs describe their daily activities and the burdens of their roles, which can affect their psychological state during pregnancy. The variety of job types also determines the extent to which respondents are exposed to information and receive social support from the environment. The distribution of respondents' work types is presented in Table 4.

Table 4. Frequency Distribution of Respondents by Occupation

Yes	Occupation	Frequency (f)	Percentage (%)
1	Housewife	12	30.0
2	Private Employee	20	50.0
3	Civil Servant (PNS)	8	20.0
Total		**40**	**100**

Source: Primary Data (2025)

Table 4 shows that 20 respondents, or 50 percent, worked as private employees. A total of 12 respondents, or 30 percent, were homemakers. Respondents who work as civil servants number 8, or 20 percent. This composition confirms that most participants are from the private sector, indicating they have work activities outside the home and potential variations in time availability and social support during the intervention.

Identify Anxiety before Counseling

Respondents' initial anxiety was identified to understand the underlying conditions before the intervention took place. This data provides an idea of the level of concern primigravida women have about their ability to care for newborns—the distribution of anxiety levels before the counseling session is listed in Table 5.

Table 5. Frequency Distribution of Anxiety Levels Among Third-Trimester Primigravida in Caring for Newborns Before Counseling

Yes	Anxiety Level	Frequency (F)	Percentage (%)
1	None	4	10.0
2	Mild	10	25.0
3	Moderate	14	35.0
4	Severe	12	30.0
5	Very Severe	0	0.0
Total		**40**	**100**

Table 5. showed that before counseling, most respondents were at a moderate level of anxiety, with a total of 14 people or 35 percent. A total of 12 respondents, or 30 percent, experienced severe anxiety. Ten respondents, or 25 percent, experienced mild anxiety. Four respondents, or 10 percent, showed no anxiety, and none of the participants were categorized as having very severe anxiety. This pattern shows that the majority of primigravida mothers still have significant concerns about their ability to care for newborns. A lack of experience can influence this high level of anxiety, the burden of daily roles, or limited information support before the counseling session is given.

Discussion

The results showed that most of the third-trimester primigravida were in the category of moderate to severe anxiety before receiving health education on newborn care. This pattern aligns with the research objectives, which focus on measuring the impact of educational interventions on reducing anxiety during the transition to motherhood. After receiving health education, respondents' anxiety levels decreased significantly. This shows that educational interventions contribute to mothers-to-be's psychological readiness and confidence in caring for babies. In midwifery practice, the emotional stability of pregnant women is an important part of the success of neonatal care. Therefore, the following discussion section reviews these findings through the perspective of anxiety theory, the effectiveness of educational interventions, and comparisons with previous research.

The reduction in anxiety after the intervention is consistent with research conducted by Wolenski & Pettit (2023), which suggests that anxiety can be controlled through increased knowledge as well as coping skills. In this context, health education serves as a stimulus that facilitates pregnant women's psychological adaptation. Prince (2021). also emphasizes that clear information and new learning experiences help form a positive perception of situations that create uncertainty, thereby decreasing anxiety.

The consistency of these findings was also evident in several previous studies. Karaarslan & Akin (2024). It was found that primipara mothers showed a decrease in anxiety from severe to moderate to mild categories after receiving education related to newborn care. Research by Awada & Shelleby (2021) reported an increase in maternal abilities and knowledge after attending an educational class, which affected readiness to care for the baby. Study Çankaya & Şimşek (2021) shows that mothers without access to prenatal education are more likely to experience severe anxiety than those who receive structured education. However, differences were found in studies by Amin et al. (2024), which highlights that social support is a dominant factor in reducing anxiety, even beyond the role of education. These findings indicate that health education requires support from the environment, such as spouses, families, and health workers, for optimal results.

In practice, this research is relevant to the development of antenatal services that are more responsive to the emotional needs of primigravida women. Health education can be used as a preventive intervention that is easily implemented by midwives and health facilities, focusing on basic infant care skills and mental preparedness for the postpartum period. Overall, health education is effective in reducing anxiety among primigravidas in the third trimester and increasing knowledge and emotional readiness. These findings are in line with anxiety theory and are supported by various previous studies. Therefore, educational interventions deserve to be a permanent part of antenatal programs, especially for first-time pregnant women. Further research could consider integrating social support and digital educational technologies to make interventions more adaptive.

CONCLUSIONS

Many pregnant women who have their first pregnancy (primigravida) face high anxiety before delivery, especially regarding the ability to care for newborns. This study aims to determine the effect of health education on the level of primigravida anxiety in the third trimester during the care of babies. Through a quasi-experimental approach with a pretest-posttest design, it was found that health education interventions significantly reduced respondents' anxiety levels. These results show that structured education can improve mothers' mental readiness and strengthen their adaptive capacity in the early phases of parenting.

The implications of these findings are particularly relevant for the practice of midwifery services, where health education can serve as a psychological support strategy that not only increases knowledge but also strengthens pregnant women's confidence. Integrating this education into routine antenatal services and extending it through digital media could expand its reach and effectiveness. Follow-up research is recommended to evaluate the long-term impact of similar interventions on postpartum maternal Well-being and the quality of infant care. Overall, health education is an important element of promotive and preventive interventions for maternal and child health.

REFERENCES

Ahmad, M., & Wilkins, S. (2025). Purposive sampling in qualitative research: a framework for the entire journey. *Quality and Quantity*, *59*(2), 1461–1479. https://doi.org/10.1007/s11135-024-02022-5

Ahmed, S. K. (2024). How to choose a sampling technique and determine sample size for research: A simplified guide for researchers. *Oral Oncology Reports*, *12*, 100662. https://doi.org/10.1016/j.oor.2024.100662

Ali, H. S. I., Abdelhafez, A. A., Hammad, H. A. H., AbdElmoneam, E. H., Othman, A. A., & Atta, M. H. R. (2024). Unravelling the Interplay Between Primigravida Pregnant Women Health Profile, Catastrophic Thinking, Tokophobia and Childbirth Preferences in a Rural Area. *Journal of Advanced Nursing*. https://doi.org/10.1111/jan.16635

Amin, S. M., El-Monshed, A. H., Khedr, M. A., Awad, A. G. E., & Atta, M. H. R. (2024). The Association between Emotional Responses to Climate Change, Antenatal Anxiety and Maternal–Fetal Attachment in Primigravida Women. *Journal of Advanced Nursing*. https://doi.org/10.1111/jan.16549

Andrade, C. (2021). The Inconvenient Truth About Convenience and Purposive Samples. *Indian Journal of Psychological Medicine*, *43*(1), 86–88. https://doi.org/10.1177/0253717620977000

Ariasih, A., Besral, Budiharsana, M., & Ronoatmodjo, S. (2024). Common Mental Disorders and Associated Factors During Pregnancy and the Postpartum Period in Indonesia: An Analysis of Data From the 2018 Basic Health Research. *Journal of Preventive Medicine and Public Health*, *57*(4), 388–398. https://doi.org/10.3961/jpmph.24.082

Awada, S. R., & Shelleby, E. C. (2021). Increases in Maternal Education and Child Behavioral and Academic Outcomes. *Journal of Child and Family Studies*, *30*(7), 1813–1830. https://doi.org/10.1007/s10826-021-01983-7

Bist, L., Viswanath, L., Nautiyal, R., & Agarwal, S. (2025). Childbirth preparedness and childbirth anxiety among primigravida in a lower-middle income country: A phenomenological qualitative study. *Clinical Epidemiology and Global Health*, *32*, 101918. https://doi.org/10.1016/j.cegh.2025.101918

Camacho, A., Correia, N., Zaccoletti, S., & Daniel, J. R. (2021). Anxiety and Social Support as Predictors of Student Academic Motivation During the COVID-19. *Frontiers in Psychology*, *12*, 644338. https://doi.org/10.3389/fpsyg.2021.644338

Çankaya, S., & Şimşek, B. (2021). Effects of Antenatal Education on Fear of Birth, Depression, Anxiety, Childbirth Self-Efficacy, and Mode of Delivery in Primiparous Pregnant Women: A Prospective Randomized Controlled Study. *Clinical Nursing Research*, *30*(6), 818–829. https://doi.org/10.1177/1054773820916984

Cheng, G. Z., Chen, A., Xin, Y., & Ni, Q. Q. (2023). Using the teach-back method to improve postpartum maternal-infant health among women with limited maternal health literacy: a randomized controlled study. *BMC Pregnancy and Childbirth*, *23*(1), 13. https://doi.org/10.1186/s12884-022-05302-w

Chicco, D., Sichenze, A., & Jurman, G. (2025). A simple guide to the use of Student's t-test, Mann-Whitney U test, Chi-squared test, and Kruskal-Wallis test in biostatistics. *BioData Mining*, *18*(1), 56. https://doi.org/10.1186/s13040-025-00465-6

Gandomi, N., Sharifzadeh, G., Torshizi, M., & Norozi, E. (2022). The effect of educational intervention based on self-efficacy theory on pregnancy anxiety and childbirth outcomes among Iranian primiparous women. *Journal of Education and Health Promotion*, *11*(1), 14. https://doi.org/10.4103/jehp.jehp_1548_20

Harerimana, A., Duma, S. E., & Mtshali, N. G. (2023). Measuring perceived learning gains of undergraduate nursing students in ICT skills: One group pretest and posttest design. *Contemporary Nurse*, *59*(2), 114–131. https://doi.org/10.1080/10376178.2023.2230309

Huang, H. Y., Li, H., & Hsu, Y. C. (2022). Coping, COVID knowledge, communication, and HBCU student's emotional well-being: Mediating role of perceived control and social connectedness. *Journal of Community Psychology*, *50*(6), 2703–2725. https://doi.org/10.1002/jcop.22824

Ilyas, A., Idrus, H. H., & Aprianti, E. (2024). The Effect of Empathy Training on Bullying Behavior in Juvenile Prisoners: A Quasi Experiment [Letter]. *Journal of Multidisciplinary Healthcare*, *17*, 4453–4454. https://doi.org/10.2147/JMDH.S494179

Karaarslan, D., & Akin, H. Y. S. (2024). How Does the Anxiety of Primiparae Affect Their Readiness for Newborn Care? Ethnic Primiparous Experiences. *Journal of Racial and Ethnic Health Disparities*, 1–9. https://doi.org/10.1007/s40615-024-02161-3

Kurniawati, W., Chien, W. T., Lantu, N., Santi, N. F., Astuti, Y. L., Faradiena, F., & Kusumaningrum, A. (2025). Validation of the pregnancy-related anxiety scale (PrAS) for pregnant women in Indonesia. *BMC Pregnancy and Childbirth*, *25*(1), 968. https://doi.org/10.1186/s12884-025-08036-7

Lai, Y. H., Wu, M. J., Chen, H. H., Lin, S. P., Wu, C. Y., Chin, C. S., Lin, C. H., Shiu, S. I., Lin, Y. C., Chen, H. C., Hou, S. C., & Chang, C. W. (2023). Impacts of Huddle Intervention on the Patient Safety Culture of Medical Team Members in Medical Ward: One-Group Pretest-Posttest Design. *Journal of Multidisciplinary Healthcare*, *16*, 3599–3607. https://doi.org/10.2147/JMDH.S434185

Nikoozad, S., Safdari - Dehcheshmeh, F., Sharifi, F., & Ganji, F. (2024). The effect of prenatal education on health anxiety of primigravid women. *BMC Pregnancy and Childbirth*, *24*(1), 541. https://doi.org/10.1186/s12884-024-06718-2

Prince, A. G. (2021). Managing anxiety and uncertainty: applying anxiety/uncertainty management theory to university health professionals and students' communication. *Journal of Communication in Healthcare*, *14*(4), 293–302. https://doi.org/10.1080/17538068.2021.1913946

Shengyao, Y., Xuefen, L., Jenatabadi, H. S., Samsudin, N., Chunchun, K., & Ishak, Z. (2024). Emotional intelligence impact on academic achievement and psychological well-being among university students: the mediating role of positive psychological characteristics. *BMC Psychology*, *12*(1), 389. https://doi.org/10.1186/s40359-024-01886-4

Shimony, O., Malin, Y., Fogel-Grinvald, H., Gumpel, T. P., & Nahum, M. (2022). Understanding the factors affecting teachers' burnout during the COVID-19 pandemic: A cross-sectional study. *Plos One*, *17*(12), e0279383.

Simpson, K. R. (2022). Maternal mental health. In *MCN The American Journal of Maternal/Child Nursing* (Vol. 47, Issue 1, p. 59). World Health Organization. https://doi.org/10.1097/NMC.0000000000000785

Ventura, M., Moadebi, S., & Damian, D. (2021). Impact of motivational interviewing training on emergency department nurses' skills: A one-group pretest–posttest pilot study. *International Emergency Nursing*, *56*, 100980. https://doi.org/10.1016/j.ienj.2021.100980

Wibowo, Y., Priyanto, E., Mulyanto, J., Munfiah, S., Rujito, L., & Roestijawati, N. (2023). Prevalence of Common Mental Disorders in Indonesian Pregnant Women on Pandemic Situation and its Influencing Factors. *Health Education and Health Promotion*, *11*(5), 707–714. https://doi.org/10.58209/hehp.11.5.707

Wolenski, R., & Pettit, J. W. (2023). Social Media Usage Is Associated With Lower Knowledge About Anxiety and Indiscriminate Use of Anxiety Coping Strategies. *Psychology of Popular Media*, *13*(2), 190–200. https://doi.org/10.1037/ppm0000456

Zickar, M. J., & Keith, M. G. (2023). Innovations in Sampling: Improving the Appropriateness and Quality of Samples in Organizational Research. *Annual Review of Organizational Psychology and Organizational Behavior*, *10*(1), 315–337. https://doi.org/10.1146/annurev-orgpsych-120920-052946