



FACTORS ASSOCIATED WITH KNOWLEDGE OF WARNING SIGNS AMONG PREGNANT WOMEN IN THE THIRD TRIMESTER AT THE “C” COMMUNITY HEALTH CENTER IN TANGERANG REGENCY, OCTOBER–DECEMBER 2025

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Abstract

Accidental sampling using the Slovin formula was conducted on a sample of 100 pregnant women. Univariate and bivariate analyses were performed using the chi-square test. Results: Bivariate analysis revealed associations between age (P-value = 0.001), education (P-value = 0.016), occupation (P-value = 0.006), parity (P-value = 0.000), and exposure to information (P-value = 0.021) and the knowledge of pregnant women regarding danger signs of third-trimester pregnancy at the C Community Health Center in Tangerang Regency in 2025. P -value = $P < 0.05$. Conclusion: This study found an association between age, education, occupation, parity, and exposure to information and pregnant women's knowledge of danger signs during pregnancy at Community Health Center C in Tangerang Regency in 2025. Recommendation: This study aims to broaden understanding regarding the importance of having knowledge and understanding of danger signs in pregnant women.

Keywords: Education; Employment; Parity; Pregnancy

INTRODUCTION

In general, pregnancies progress normally and result in the birth of a healthy, full-term baby through the birth canal. However, sometimes things do not go as expected. Risk assessments alone cannot predict whether a pregnant woman will experience complications during her pregnancy. It is crucial for pregnant women to be aware of the warning signs of pregnancy complications, because by recognizing these signs, any potential emergencies can be effectively managed. (Ayumi, 2014).

According to the WHO (World Health Organization), an estimated 800 women die every day due to complications of pregnancy and childbirth; approximately 99% of all these deaths occur in developing countries, and about 80% of maternal deaths result from complications arising during pregnancy and after childbirth. (WHO 2014).

According to the 2014 WHO report, this figure is still far from the annual MMR reduction target required to achieve MDG Goal 5. High maternal mortality rates are observed in several regions, including 289,000 deaths worldwide, 9,300 in the United States, 179,000 in Africa, 16,000 in Southeast Asia, in Indonesia at 214 per 1,000 live births, the Philippines at 170 per 1,000 live births, Vietnam at 160 per 1,000 live births, Thailand at 49 per 1,000 live births, and Malaysia at 39 per 1,000 live births (WHO 2014).

The Maternal Mortality Rate (MMR) has decreased from 346 deaths per 100,000 live births in 2010 (2010 Population Census) to 305 deaths per 100,000 live births in 2015 (SUPAS 2015). The Neonatal Mortality Rate (NMR) decreased from 20 per 1,000 live births in 2002 to 15 per 1,000 live

births in 2017, The Infant Mortality Rate (IMR) decreased from 46 per 1,000 live births in 2002 to 32 per 1,000 live births in 2017 (SDKI 2017).

The health status of mothers and children in Indonesia remains unsatisfactory. According to the data collected, in 2016 there were 59 maternal deaths in Tangerang Regency, 58 in 2017, 61 in 2018, 66 in 2019, 64 in 2020, and 69 in 2021.

Nevertheless, Tatu claims that the maternal mortality rate (MMR) and infant mortality rate (IMR) in Tangerang Regency have continued to show a significant annual decline. In 2021, the MMR in Tangerang Regency was 69 and the IMR was 209. Meanwhile, in 2022, the MMR was 52 and the IMR was 202. (Department of Health, 2023)

The effects on pregnant women resulting from warning signs of pregnancy complications during pregnancy include:

- 1) Vaginal bleeding
- 2) Severe, persistent headaches that do not subside
- 3) Sudden visual changes (blurred vision)
- 4) Swelling of the face and hands
- 5) Severe abdominal pain or pain in the upper abdomen
- 6) Decreased fetal movement compared to usual or even the absence of movement

Signs of pregnancy complications include: blurred vision, severe and persistent headaches, facial and extremity edema, and vaginal bleeding. The lack of education about warning signs of pregnancy by healthcare providers means that many pregnant women do not yet understand these signs. Recognizing these warning signs as early as possible is best for pregnant women. In addition to education from healthcare providers, a pregnant woman's adherence to prenatal checkups is essential so that any symptoms can be addressed as early as possible, thereby reducing the maternal mortality rate to the lowest possible level.

The government's efforts to achieve the Millennium Development Goals (MDGs)—specifically a Maternal Mortality Rate (MMR) of 102 per 100,000 live births (LB) and an Infant Mortality Rate (IMR) of 23 per 1,000 LB by 2015—require greater acceleration and hard work given the current conditions, the MMR stands at 307 per 100,000 live births and the IMR at 34 per 1,000 live births. Various efforts undertaken by the government to reduce the MMR and IMR include:

- 1) The rollout of Health Operational Assistance (BOK) to Community Health Centers (Puskesmas) in districts and cities, focused on preventive and promotive activities within the Maternal and Child Health program.

- 2) The Childbirth Planning and Complication Prevention Program (P4K) aims to improve proxy indicators (deliveries attended by health workers) to reduce the Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR). This program, which uses stickers, can enhance the active role of husbands (as "Supportive Husbands"), families, and the community in planning for safe childbirth. This program also improves preparedness for complications during pregnancy, including planning for the use of postpartum contraceptive devices or medications.

Early detection can be achieved through regular prenatal checkups; to ensure the quality of antenatal care, an indicator is needed to confirm that a pregnant woman's visits meet the standard—specifically, K6 coverage. K6 coverage refers to a pregnant woman's sixth or subsequent contact with a health care provider, in accordance with the established schedule. Many factors can influence how a pregnant woman perceives her pregnancy. These include sociocultural factors, the pregnant woman's educational level, economic status, experiences with health care services, and the role of health care providers in the community. These factors underlie the behavior that drives a pregnant woman to seek care from health care providers.

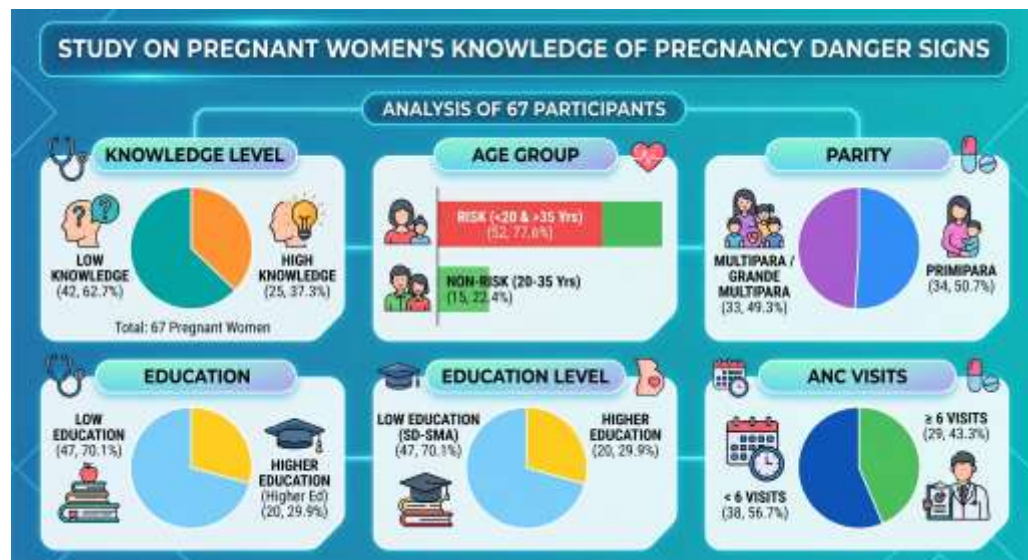
Based on data collected at the C Community Health Center in Tangerang Regency, the 2023 ANC checkups identified 100 pregnant women at risk out of 140 total. Meanwhile, the 2024 ANC checkups showed an increase in the number of high-risk cases to 154 pregnant women out of 175 total. From 2025 through the third trimester, the number of visits reached 200 pregnant women. Based on the above description, the researcher is interested in conducting a study on "Factors Associated with Knowledge of Warning Signs of Pregnancy Complications Among Pregnant Women in the Third Trimester at Puskesmas C in Tangerang Regency in 2025."

METHOD

The research design for this study is a descriptive-analytical survey, which is a research method used to objectively provide an overview or description of a situation, which is then analyzed to identify relationships between two variables. The design employs a cross-sectional approach to examine the dynamics of the correlation between risk factors and outcomes through observation or data collection at a single point in time (point-in-time approach), and sampling is conducted using random sampling techniques. (Notoadmodjo, 2014).

RESULTS AND DISCUSSION

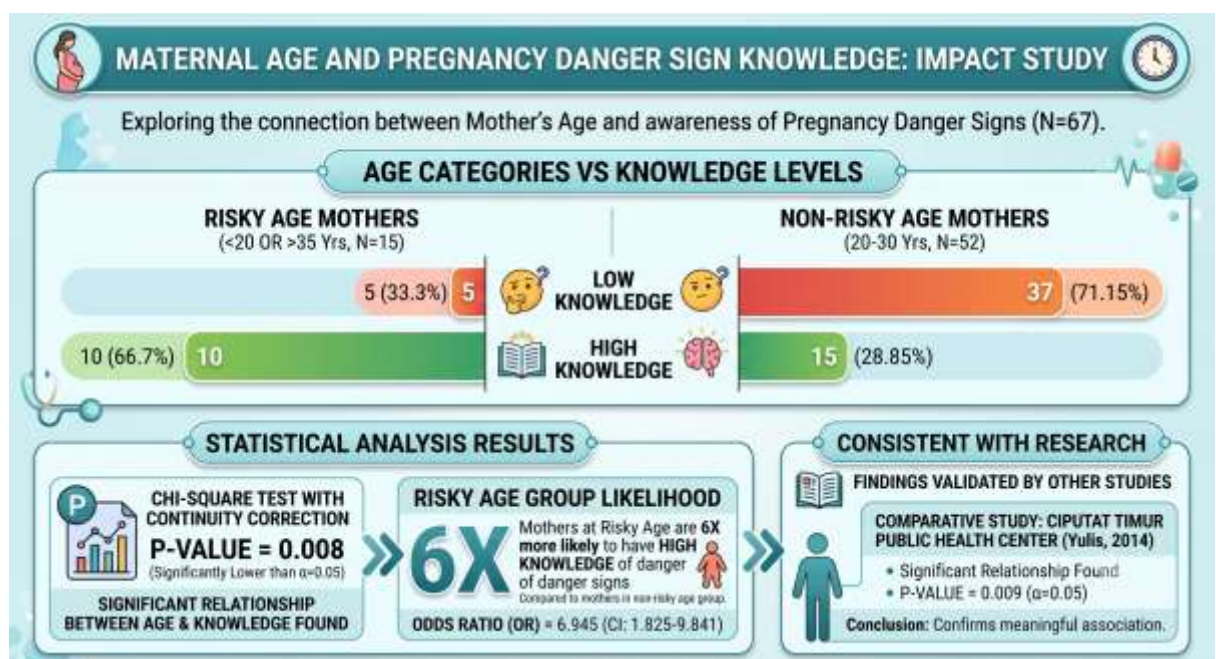
a. Analisa Univariat



In the above study, pregnant women's knowledge of danger signs during pregnancy was categorized into two groups: those with high knowledge and those with low knowledge. The results showed that of the 67 pregnant women, 42 (62.7%) had low knowledge, while 25 (37.3%) had high knowledge. Pregnant women in high-risk age groups (< 20 years and > 35 years) numbered 52 (77.6%), while those in the non-high-risk age group (20–35 years) numbered 15 (22.4%). Multiparous women numbered 33 (49.3%), and primiparous women numbered 34 (50.7%). Pregnant women with a low level of education (elementary through high school) numbered 47 (70.1%), while those with a college education numbered 20 (29.9%). There were 38 pregnant women (43.3%) who attended fewer than 6 ANC visits and 29 pregnant women (56.7%) who attended 6 or more ANC visits.

b. Analisa Bivariat

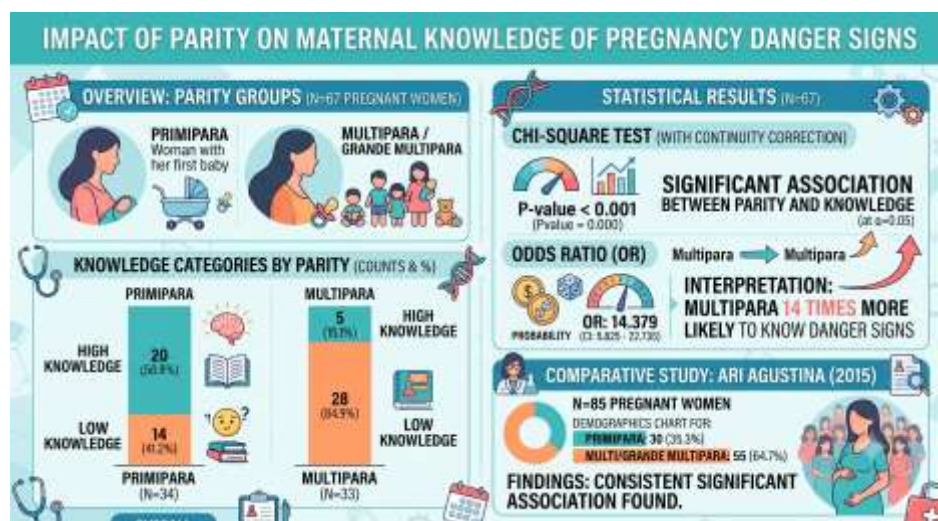
1. Age



Based on age, among those aged <20 and >35 years, 5 people (33.3%) were in the low category, and among those aged 20–30 years, 37 people (71.15%) were in the low category, whereas 10 pregnant women (66.7%) aged under 20 and over 35 years old, 10 women (66.7%) were in the high category, and among those aged 20–30 years, 15 women (28.85%) were in the high category.

The results of the Chi-Square statistical test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.008), meaning that at $\alpha = 0.05$, there is a significant association between maternal age and pregnant women's knowledge of danger signs during pregnancy. An odds ratio (OR) of 6.945 (1.825–9.841) was obtained, meaning that mothers in the high-risk age group are 6 times more likely to recognize danger signs during pregnancy compared to mothers in the non-high-risk age group. These findings are consistent with a 2014 study by Yulis at the Ciputat Timur Subdistrict Community Health Center, which examined the relationship between maternal age and pregnant women's knowledge of danger signs during pregnancy. That study yielded a P-value $< \alpha$ (P-value = 0.009), meaning that at $\alpha = 5\%$, there is a statistically significant association between maternal age and pregnant women's knowledge of danger signs during pregnancy.

2. Parity

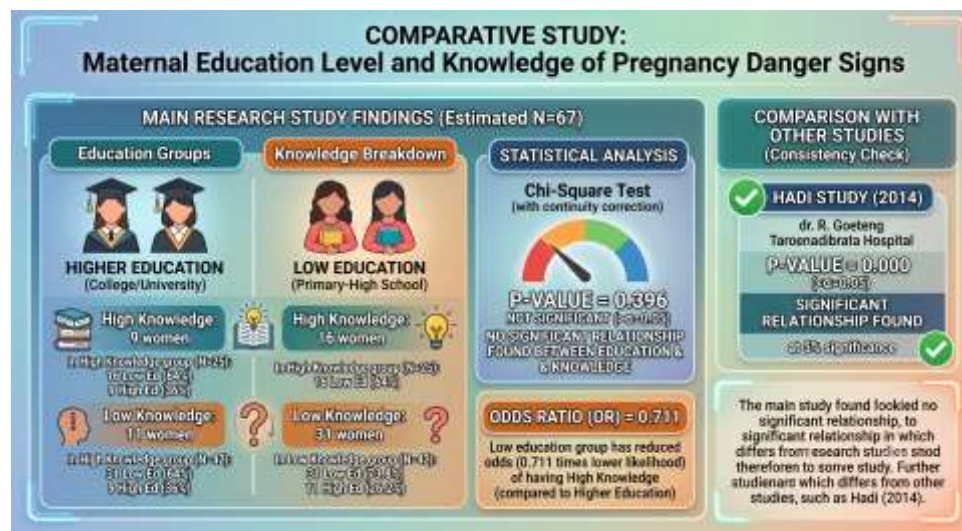


Based on parity, 28 multiparous women (84.9%) were in the low category, and 14 primiparous women (41.2%) were in the low category, whereas among pregnant women's knowledge of danger signs during pregnancy, 5 multiparous women (15.1%) were in the high category, and 20 primiparous women (58.8%) were in the high category. The results of the Chi-Square statistical test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.000), which, at $\alpha = 0.05$, indicates that there is a significant association between parity and pregnant women's knowledge of danger signs during pregnancy.

The odds ratio (OR) was 14.379 (5.825–22.735), meaning that multiparous women were 14

times more likely to recognize danger signs during pregnancy compared to primiparous women. This finding is consistent with a 2015 study by Ari Agustina at the An-Nisa Medika Clinic and Maternity Ward, which found a correlation between maternal parity and pregnant women's knowledge of danger signs during pregnancy: 30 (35.3%) of 85 (100%) pregnant women were primiparous, while 55 (64.7%) of 85 (100%) women in labor were multiparous or grande multiparous..

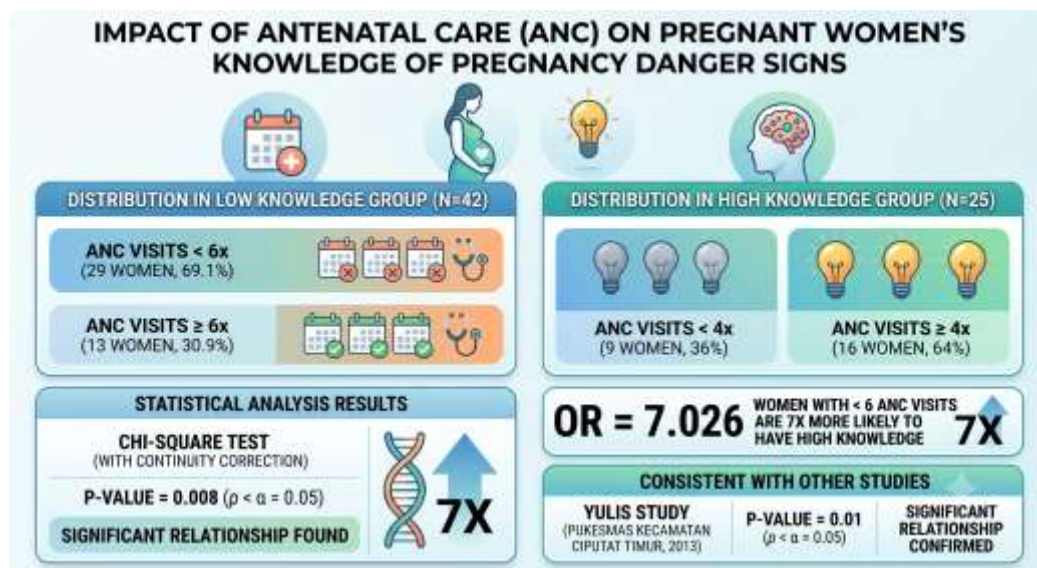
3. Education



Based on educational background, 31 individuals (73.8%) with a low level of education (elementary through high school) and 11 individuals (26.2%) with a college education were classified as having a low level of knowledge, whereas pregnant women's knowledge of danger signs during pregnancy was in the high category for 16 individuals (64%) with a low level of education (elementary through high school) and for 9 individuals (36%) with a college education.

The results of the statistical test using the Chi-Square test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.396), meaning that at $\alpha = 0.05$ this indicates that there is no significant association between educational level and pregnant women's knowledge of danger signs during pregnancy. An OR of 0.711 (0.004–3.892) was obtained, meaning that women with a low educational level are 0.711 times less likely to recognize danger signs during pregnancy compared to those with a high educational level. This finding is inconsistent with Hadi's 2014 study at Dr. R. Goeteng Taroenadibrata Regional General Hospital, which examined the relationship between education and pregnant women's knowledge of danger signs during pregnancy. That study yielded a P-value $< \alpha$ (P-value = 0.000), meaning that at $\alpha = 5\%$, there is a statistically significant relationship between education and pregnant women's knowledge of danger signs during pregnancy..

4. Prenatal Care Checkup



Based on the ANC check-ups, 29 women (69.1%) who had fewer than 6 ANC visits were classified as low, and 13 women (30.9%) who had 6 or more ANC visits were classified as low, whereas among pregnant women's knowledge of danger signs during pregnancy, 9 women (36%) who had fewer than 4 ANC visits were in the high category, and 16 women (64%) who had 4 or more ANC visits were in the high category. The results of the Chi-Square statistical test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.008), which, at $\alpha = 0.05$, indicates a statistically significant association between the number of ANC visits and pregnant women's knowledge of danger signs during pregnancy. The odds ratio (OR) was 7.026 (3.532–15.398), meaning that mothers who attended fewer than 6 ANC visits were 7 times more likely to be aware of danger signs during pregnancy compared to those who attended 6 or more ANC visits. These findings are consistent with a study by Yulis conducted at the Ciputat Timur Subdistrict Public Health Center in 2013. The results of the Chi-Square statistical test with continuity correction yielded a P-value $> \alpha$ (P-value = 0.01), which, at $\alpha = 0.05$, indicates that there is an association between the number of ANC visits and pregnant women's knowledge of danger signs during pregnancy.

CONCLUSION

Based on the research conducted, the findings align with the specific objective of identifying the factors associated with knowledge of pregnancy warning signs among third-trimester pregnant women at Community Health Center C in Tangerang Regency from October to December 2025, as well as the relationships among the variables studied. Therefore, the author draws the following conclusions:

The number of women at risk due to age (<20 years and >35 years) was 52 (77.6%).

The results of the Chi-Square statistical test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.008), which, at $\alpha = 0.05$, indicates a statistically significant relationship between the mother's age and her knowledge of danger signs during pregnancy. The number of multiparous women (including grand multiparous women) was 33 (49.3%).

The results of the Chi-Square test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.000), which, at $\alpha = 0.05$, indicates a significant association between parity and pregnant women's knowledge of danger signs during pregnancy. Women with a low level of education (elementary through high school) numbered 47 (70.1%).

The results of the Chi-Square test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.396), which, at $\alpha = 0.05$, indicates that there is no significant association between educational level and pregnant women's knowledge of danger signs during pregnancy.

There were 29 pregnant women (56.7%) who attended ≥ 6 ANC visits. The results of the Chi-Square test with continuity correction yielded a P-value $< \alpha$ (P-value = 0.008), which, at $\alpha = 0.05$, indicates that there is a significant association between the number of ANC visits and pregnant women's knowledge of danger signs during pregnancy.

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