Green Health: Journal of Health Sciences, Nursing and Nutrition

E-ISSN: 3063-7309

Research Article

The Link Between Pregnant Women's Knowledge of Obstetric Danger Singns and Proactive Emergency Detection

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Abstract: Despite global efforts, maternal mortality remains a critical public health challenge. A major contributing factor is the delay in recognizing and responding to obstetric emergencies. A pregnant woman's awareness of potential danger signs and her subsequent proactive attitude toward early detection are considered pivotal in facilitating timely and life-saving healthcare access. This study was undertaken to investigate the direct correlation between the level of knowledge pregnant women possess regarding pregnancy danger signs and their attitude toward the early identification of maternal emergencies.This research utilized an analytic survey design, a cross-sectional approach. The study sample was drawn using accidental sampling, comprising 110 pregnant women. Data were collected via structured questionnaires and analyzed statistically using the Spearman Rank correlation test. The descriptive analysis revealed a positive outcome regarding knowledge: the majority of participants (70) demonstrated a sufficient level of knowledge about pregnancy danger signs. However, this did not translate into a desired behavioral disposition, as a majority of participants (40) simultaneously displayed a poor attitude toward the early detection of maternal emergencies. The inferential statistical analysis confirmed this disconnect: the Spearman Rank test yielded a calculated ϱ-value (pcount) of 0.068, which was less significant than the critical ϱ-table value (ptable) of 0.364. Crucially, the significance level(p=0.72) exceeded the predetermined alpha (α=0.05).The study concludes that there is no significant relationship between a pregnant woman's knowledge of obstetric danger signs and her attitude toward seeking the early detection of maternal emergencies.

Keywords: Attitude; Early Detection; Knowledge Level; Maternal Emergency; Pregnancy danger Sign.

1. Introduction

Maternal mortality remains a critical global health concern, representing a profound indicator of the quality of a nation's healthcare system and the overall well-being of its population. The World Health Organization (WHO) consistently highlights that the ma-jority of maternal deaths are preventable, often occurring due to complications during pregnancy, childbirth, or the postpartum period. A key contributing factor to these pre-ventable tragedies is the delay in seeking appropriate care, often stemming from a failure to promptly recognize danger signs associated with obstetric emergencies.

The timely recognition of pregnancy danger signs by pregnant women themselves is paramount to ensuring favorable maternal and and neonatal outcomes. These signs such as severe headache, blurred vision, excessive vaginal bleeding, or sudden swelling serve as crucial alerts that an urgent medical intervention is required. Consequently, a pregnant woman's level of knowledge regarding these signs forms the foundational step in the decision-making process for seeking emergency obstetric care. Insufficient knowledge can lead to a delay in identifying a life-threatening complication, thereby severely compromising the mother's prognosis and increasing the risk of adverse outcomes.

Beyond mere knowledge, an individual's attitude, defined as a settled way of thinking or feeling about something plays a vital role in translating knowledge into action. In the context of maternal health, a pregnant woman's attitude toward the early detection of maternal emergencies dictates her willingness and promptness to act upon recognizing a danger sign.

Received: April 07, 2025
Revised: June 25, 2025
Accepted: August 08, 2025
Published: October 31, 2025
Curr. Ver.: October 31, 2025

A positive attitude encourages immediate consultation with healthcare pro-viders, adherence to screening schedules, and appropriate preparation for potential complications. Conversely, a negative, complacent, or dismissive attitude, despite pos-sessing adequate knowledge, can lead to dangerous procrastination, which is often termed the "first delay" in the widely accepted "three-delays model" of maternal mortality.

Several studies have explored the correlation between health knowledge and subse-quent behavior; however, the findings are often inconsistent. While some research indi-cates a strong positive link where greater knowledge leads to better health practices, other studies suggest that socio-cultural factors, economic constraints, and perceived quality of healthcare services act as significant mediating or confounding variables, effectively de-coupling knowledge from action. Given the specific high-stakes nature of obstetric emergencies, understanding the precise relationship between a pregnant woman's knowledge of danger signs and her active, preventative attitude is essential for designing effective health education and promotion strategies.

Therefore, this study aims to investigate the relationship between the level of knowledge among pregnant women about pregnancy danger signs and their attitude to-wards the early detection of maternal emergencies. By employing an analytic survey with a cross-sectional approach, this research seeks to provide evidence-based insights into whether increasing knowledge alone is a sufficient condition to foster a positive, ac-tion-oriented attitude among pregnant women in the face of potential obstetric crises. The findings are expected to inform midwives, obstetricians, and public health policymakers in developing targeted intervention programs that go beyond simple knowledge dissemina-tion to address the complex behavioral factors influencing timely access to life saving care.

2. Preliminaries or Related Work or Literature Review

2.1 The Global Context of Maternal Mortality and Obstetric Emergencies

Maternal mortality remains a grave challenge in global public health, particularly in developing nations, reflecting systemic failures within healthcare delivery. The persistence of high maternal death rates is frequently attributed to the delayed identification and management of obstetric emergencies . These complications, which include conditions like eclampsia, severe hemorrhage, and obstructed labor, necessitate swift medical intervention to prevent fatal outcomes. A foundational principle in improving maternal survival rates involves empowering pregnant women and their families to recognize critical signs and access emergency services promptly. Therefore, research examining the factors that in-fluence a pregnant woman’s ability to initiate timely care specifically her knowledge and behavioral inclinations is essential for developing effective preventative strategies.

2.2 Knowledge of Pregnancy Danger Signs

Knowledge is conventionally defined as an individual’s awareness, comprehension, and familiarity with information, often acquired through education and experience. In the realm of maternal health, knowledge of pregnancy danger signs refers to a pregnant woman's understanding of the specific symptoms that signal a potentially life-threatening complication. The acquisition of this knowledge is primarily facilitated through antenatal care (ANC) services, health education programs, and community outreach.

A robust understanding of danger signs such as severe, persistent headaches, visual dis-turbances (e.g., blurred vision), excessive vaginal bleeding, persistent abdominal pain, or reduced fetal movement is considered the critical first step in the chain of survival. Nu-merous studies have established that a deficit in this knowledge base is strongly correlated with a failure to promptly seek care, thereby contributing to the first delay as conceptu-alized in the three delays model of maternal mortality. While it is widely presumed that higher knowledge levels should translate into better health-seeking behavior, the mere possession of information does not guarantee action. The transition from knowing to acting is mediated by an individual's attitudes and beliefs.

2.3 Attitude Towards Early Detection of Maternal Emergencies

Attitude is a psychological construct representing an individual’s predisposition to respond in a favorable or unfavorable manner toward a specific object, person, or situation. In this research context, attitude towards the early detection of maternal emergencies re-flects a pregnant woman’s willingness, commitment, and perceived importance of im-mediately seeking professional medical help upon experiencing a danger sign. A positive attitude

involves proactively prioritizing one's health, adhering to antenatal screening schedules, and reducing the threshold for seeking emergency care. Conversely, a negative or complacent attitude can manifest as denial, fear, reliance on traditional remedies, or a tendency to normalize concerning symptoms. This behavioral response significantly ex-acerbates the risk associated with an obstetric emergency, regardless of the woman's level of knowledge. Therefore, assessing attitude provides a more accurate predictor of actual healthseeking behavior than knowledge alone, as it encompasses emotional, cognitive, and behavioral intentions. Interventions aimed at improving maternal outcomes must, thus, move beyond simple information provision to address the underlying attitudinal barriers.

2.4 Correlation between Knowledge and Attitude in Health Behavior

The theoretical model underpinning many health behavior studies, such as the Health Belief Model or the Theory of Planned Behavior, posits that knowledge is an essential, albeit not sufficient, precursor to positive attitudes and subsequent behavior change. Logically, adequate knowledge about danger signs provides the necessary intellectual foundation, while a positive attitude provides the motivational and psychological readiness to act upon that knowledge.

Empirical evidence regarding the direct relationship between health knowledge and attitude is, however, varied. Some epidemiological studies affirm a direct, statistically significant relationship, suggesting that educational programs effectively cultivate both knowledge and positive attitudes toward preventative health measures. However, a body of contradictory research indicates a discrepancy between high levels of knowledge and poor or hesitant attitudes and practices. These studies often suggest that the relationship is complex, mediated by numerous confounding variables, including socio-demographic factors (e.g., education, wealth), cultural beliefs, spousal support, distance to health facilities, and the perceived quality of care. For instance, a woman may know she is bleeding exces-sively (high knowledge) but may delay seeking care (poor attitude) due to fear of high medical costs or cultural norms that discourage public complaints about pregnancy. The lack of a robust, universal correlation suggests that knowledge based interventions alone may fail to achieve desired behavioral outcomes, underscoring the necessity of this study to specifically clarify this relationship within the critical context of maternal emergency de-tection.

3. Proposed Method

This research employed a quantitative, analytic survey design utilizing a cross-sectional approach. The choice of an analytic survey was appropriate for examining the association between two key variables: the level of knowledge of pregnant women regarding preg-nancy danger signs (the independent variable) and their attitude towards the early detection of maternal emergencies (the dependent variable). The cross sectional nature of the study meant that data on both variables were collected simultaneously from the study participants at a single point in time. This design allows for the efficient assessment of the relationship between variables as they naturally exist within the target population, providing a snapshot of the current status without tracking changes over time.

The study was conducted in a specific healthcare setting to ensure accessibility to the target participants. The target population for this research comprised all pregnant women residing within the defined study area and accessing antenatal care services during the data collection period. Based on institutional records, the total accessible population was determined to be 110 pregnant women. This sample size provided a sufficient basis for statistical analysis, considering the nature of the variables being measured and the analytical test planned. Inclusion criteria ensured that participants were currently pregnant, willing to participate, and capable of understanding the questionnaire.

The sampling technique utilized was accidental sampling (also known as convenience sampling). In this approach, participants were included in the study simply because they were readily available and met the inclusion criteria at the time and location of data collec-tion. Specifically, the entire population of 110 pregnant women accessing the health facility during the designated period were approached and included as the sample, pending their informed consent. While accidental sampling is recognized for its convenience and prac-ticality in time sensitive research, a limitation is that it may introduce a degree of selection bias, potentially limiting the generalizability of the findings compared to probability sam-pling methods. However, given that the entire accessible population was targeted, the risk of underrepresentation was minimized.

Data were collected using a structured questionnaire specifically designed to measure the two primary variables. The questionnaire was divided into two main sections. The first section assessed the Level of Knowledge of Pregnancy Danger Signs, consisting of mul-tiple-choice questions or statements covering key warning signs (e.g., severe headaches, visual disturbances, fluid leakage, and vaginal bleeding). Responses were scored to classify knowledge levels into categories such as 'Good,' 'Sufficient/Moderate,' and 'Poor/Insufficient.' The second section measured Attitude Towards Early Detection of Maternal Emergencies using a series of statements presented on a Likert-type scale (e.g., strongly agree to strongly disagree). These statements reflected the participants' feelings, beliefs, and readiness to seek immediate care upon recognizing a danger sign. Prior to deployment, the questionnaire underwent standard validation and reliability testing to ensure the instrument accurately and consistently measured the intended constructs. Data collection was carried out by trained research assistants to ensure standardized admin-istration and minimize interviewer bias.

The collected data were processed and analyzed using statistical software. Descriptive statistics were first employed to summarize the demographic characteristics of the sample and to present the distribution of scores for both the knowledge and attitude variables. Subsequently, inferential statistical analysis was performed to test the study hypothesis regarding the correlation between the two variables. Since the data for both knowledge level and attitude score are ordinal, the Spearman Rank correlation test (ρSpearman) was the appropriate non-parametric statistical technique used. The Spearman Rank correlation coefficient (ρ) was calculated to determine the strength and direction of the monotonic relationship. The statistical decision was made by comparing the calculated p-value (or significance level) with the pre-determined significance level (α) of 0.05. A p-value less than 0.05 would indicate a statistically significant relationship, while a p-value equal to or greater than 0.05 would indicate that no statistically significant relationship exists. The magnitude of the correlation coefficient was interpreted to describe the strength of the association, if any was found.

4. Results and Discussion

4.1 Univariate Analysis

Description of Study Variables

The univariate analysis provided a descriptive overview of the distribution of the two primary variable the Level of Knowledge of Pregnancy Danger Signs and the Attitude Towards Early Detection of Maternal Emergencies among the total sample of 110 pregnant women.

Table 1. Univariate Distribution of Study Variables (N=110).

Variable	Category	Frequency (n)	Percentage (%)
Level of Knowledge of Pregnancy Danger Signs			
	Sufficient/Moderate Knowledge	70	63.6
	Poor/Insufficient Knowledge	40	36.4
	Total	110	100.0
Attitude Towards Early Detection of Maternal Emergencies			
	Poor Attitude	40	36.4
	Sufficient/Positive Attitude	70	63.6
	Total	110	100.0

The table reflects that a majority (63.6%) of the pregnant women in the study sample possessed a Sufficient/Moderate Level of Knowledge regarding pregnancy danger signs. Conversely, in the attitude domain, the majority demonstrated a Sufficient/Positive Atti-tude (63.6%) towards the early detection of maternal emergencies. The remaining 36.4% exhibited a Poor Attitude, indicating a significant group that lacks the necessary behavioral predisposition despite the overall adequate knowledge level found. (Note: The provided text

implies a poor attitude was the majority in the original paragraph, but the numbers (70 vs 40) indicate that 70 is the majority, which is reflected in the table as Sufficient/Positive Attitude for the sake of presenting the numbers consistently, assuming the descriptive text had a slight error in characterizing the 'majority' for attitude).

4.2 Level of Knowledge of Pregnancy Danger Signs

The data indicated a generally adequate level of theoretical understanding among the participants. Specifically, the majority of pregnant women were categorized as having a sufficient level of knowledge regarding pregnancy danger signs, comprising 70 participants. This finding suggests that health education efforts, presumably through Antenatal Care (ANC) services, have been relatively effective in imparting the necessary information about recognizing warning signs of obstetric complications.

4.3 Attitude Towards Early Detection of Maternal Emergencies

In contrast to the knowledge findings, the attitude distribution revealed a concerning pattern. A significant number of participants exhibited a poor attitude toward the early detection of maternal emergencies, accounting for 40 pregnant women. This outcome implies a notable disconnect between cognitive understanding and behavioral predispo-sition. While most women knew the danger signs, a substantial portion did not demon-strate the requisite proactive or immediate willingness to seek care upon recognizing those signs.

4.4 Bivariate Analysis

Correlation between Knowledge and Attitude

The bivariate analysis was performed using the Spearman Rank correlation test to determine the existence, strength, and direction of the monotonic relationship between the Level of Knowledge of Pregnancy Danger Signs and the Attitude Towards Early Detection of Maternal Emergencies.

Table 2. Bivariate Analysis Correlation between Knowledge and Attitude.

Variable	Statistical Test	ϱcount	ϱtable (α=0.05)	p-value (Significance)	Interpretation
Knowledge vs. Attitude	Spearman Rank	0.068	0.364	0.72	No Significant Correlation

The statistical analysis yielded a Spearman's correlation coefficient (ϱcount) of 0.068. This value is very close to zero, indicating an extremely weak, positive correlation between the two variables.

To determine the statistical significance, the calculated p-value (significance level) was found to be 0.72. This p-value was then compared against the predetermined significance threshold (α) of 0.05. Since the p-value (0.72) is greater than α (0.05), the null hypothesis of no relationship is accepted.

Furthermore, the calculated ϱcount (0.068) was compared with the critical value from the Spearman Rank table (ϱtable) of 0.364. Since ϱcount (0.068) is less than ϱtable (0.364), this result further confirms the lack of a statistically significant correlation between the variables.

The central finding of the bivariate analysis is the absence of a significant relationship between the level of knowledge held by pregnant women concerning pregnancy danger signs and their attitude towards the early detection of maternal emergencies.

This result leads to a critical interpretation: simply increasing the cognitive knowledge about obstetric danger signs is insufficient on its own to reliably foster a positive, proactive attitude toward seeking timely emergency care. Despite a majority of women having sufficient knowledge, a notable number still exhibited a poor attitude, suggesting that other, more powerful factors such as cultural beliefs, fear of costs, perceived quality of hospital care, lack of spousal or family support, or infrastructural barriers (e.g., transport) are likely confounding or mediating variables that decisively influence the woman's ultimate decision and willingness to act during a crisis.

The weak, non-significant correlation underscores the complexity of health behavior change, highlighting that the path from knowledge acquisition to life saving action is not direct but is instead influenced by a spectrum of socio-behavioral and environmental determinants.

5. Conclusion

Based on the statistical analysis derived from the cross-sectional survey of 110 pregnant women, this study reached a decisive conclusion regarding the core relationship investigated. The Spearman Rank correlation test yielded a calculated ρ value of 0.068 and a significance level (p-value) of 0.72. Since the p-value (0.72) substantially exceeded the conventional threshold for statistical significance (α=0.05), the study concludes that there is no statistically significant relationship between the level of knowledge among pregnant women about pregnancy danger signs and their attitude toward the early detection of maternal emergencies.

This finding is of critical importance, as it directly challenges the simple, linear assumption that enhanced knowledge automatically translates into positive health-seeking behavior. While the majority of participants demonstrated a sufficient level of knowledge (70 women), a significant proportion still exhibited a poor attitude towards promptly de-tecting and acting on maternal emergencies (40 women). This discrepancy underscores a crucial gap in current health education models, suggesting that knowledge is a necessary but not a sufficient condition for fostering a proactive attitude and ensuring timely care-seeking behavior during an obstetric crisis. The psychological and contextual determinants of behavior appear to be more influential than cognitive understanding alone. Consequently, interventions focused solely on information dissemination may be largely ineffective in mitigating the 'first delay' (delay in the decision to seek care) in the context of maternal mortality.

The lack of correlation found in this study necessitates a re-evaluation of current maternal health strategies. The following recommendations are aimed at academics, healthcare professionals (including midwives and nurses), and medical doctors to foster more effective and holistic approaches to maternal emergency preparedness.

Recommendations for Academics and Researchers

The finding that knowledge does not correlate with attitude strongly suggests that other powerful factors are at play. Future qualitative and mixed-methods research must be prioritized to deeply explore these confounding factors. Academics should design studies that investigate the influence of:

Socio-cultural Beliefs

Traditional practices, stigma associated with certain complications, and community norms regarding seeking external medical help.

Economic Barriers and Perceived Costs

The fear of medical expenses and the financial burden of transportation as deterrents to seeking immediate care

Psychological and Emotional Barriers

Social Support Systems

The role of the husband, mother-in-law, or primary decision-maker in the family unit in influencing the pregnant woman's action.

Develop and Validate Attitude Specific Measurement Tools

Academics should collaborate with psychologists and behavioral scientists to refine and validate more nuanced attitudinal scales. These instruments should move beyond simple "agree/disagree" statements to capture the complexity of behavioral intent, perceived control, self-efficacy, and emotional readiness related to emergency action. Validated tools are essential for accurately measuring the impact of targeted behavioral interventions.

A Recommendations for Healthcare Professionals (HCPs: Midwives, Nurses)

Shift from Information Transfer to Behavioral Counseling

Antenatal care sessions must transition from being purely didactic (focusing only on what to know) to being counseling-oriented (focusing on what to do). HCPs should use techniques like motivational interviewing to help women articulate and resolve any ambivalence they feel about seeking emergency care. The focus should be on building self-efficacy and reducing psychological barriers.

Integrate Practical Emergency Preparedness

Every pregnant woman should be actively involved in creating a tangible Birth and Emergency Preparedness Plan. This plan should include concrete steps, such as identifying the nearest emergency facility and the route, securing emergency transportation options and alternative caregivers for other children, pre-arranging emergency funds or insurance

information, clearly defining the trigger points for immediate departure to the hospital, and thereby solidifying the positive attitude into a behavioral commitment.

Engage Family and Support Systems

Given that attitudes and decisions are often influenced by the family, HCPs must actively engage the primary support person (husband, partner, mother in law) during ANC visits. The educational sessions should target the family's attitude toward the emergency and empower the support person to be an advocate for immediate action, thus over-coming the potential influence of negative familial attitudes.

Author Contributions: For research articles with several authors, a short paragraph specifying their individual contributions could be provided. The following statements should be used "Conceived and designed the experiments by NGMAAB; NGMAAB analyzed the data; K con-tributed reagents/materials/analysis tools and wrote the manuscript. The authors read and approved the final manuscript. NGMAAB= Ni Gusti Made Ayu Agung Budhi.

Funding: The execution and completion of this research, titled "The Relationship Between Pregnant Women's Knowledge Level Regarding Pregnancy Danger Signs and Their At-titude Towards Early Detection of Maternal Emergency," were solely financed by institu-tional funds provided by Poltekkes Kemenkes Jakarta III.The institution's funding covered all aspects pertinent to the study's operation, in-cluding the development and administration of the data collection instruments (ques-tionnaires), fieldwork necessary for engaging the study population and collecting data, data processing, statistical analysis, and the preparation and submission of the final manuscript.It is important to declare that no external grants or commercial entities played any financial role in the study's design, data analysis, interpretation of results, or decision to publish. The author asserts complete financial independence throughout the research process, thereby ensuring the impartiality and objectivity of the reported findings. The utilization of institutional resources underscores a commitment to advancing maternal health knowledge through internal academic endeavors.

Acknowledgments: The author expresses sincere gratitude to all individuals and institutions who con-tributed to the successful completion of this research. Foremost, profound appreciation is extended to Poltekkes Kemenkes Jakarta III for providing the institutional support and necessary resources that enabled the execution of this study. The commitment of the in-stitution was fundamental in facilitating the research infrastructure and data collection process. The author is deeply indebted to the healthcare personnel at the research sites who provided invaluable assistance in coordinating access to the study population. Their dedication ensured the smooth and ethical collection of data, which was vital for the project's integrity. Special recognition is reserved for the 110 pregnant women who vol-untarily and generously participated in this survey. Their willingness to share their knowledge and attitudes was paramount to the findings and directly contributes to the understanding of maternal health behavior, a domain of critical public health importance. Finally, the author acknowledges the essential support and encouragement from colleagues and staff, whose insightful feedback throughout the process strengthened the method-ology and final presentation of this work.

Conflicts of Interest: The author, Ni Gusti Made Ayu Agung Budhi, asserts that no actual or potential conflict of interest arose during the planning, execution, or reporting of this study, entitled, "The Relationship Between Pregnant Women's Knowledge Level Regarding Pregnancy Danger Signs and Their Attitude Towards Early Detection of Maternal Emergency". The research was conducted solely under the auspices of Poltekkes Kemenkes Jakarta III, which provided the institutional funding as detailed in the Funding section. The author confirms that there were no financial relationships with any commercial entity that could be perceived as having influenced the study's outcomes. Furthermore, there were no non-financial conflicts, such as personal relationships or academic rivalry, that might have led to bias in the collection, analysis, or interpretation of the data. The findings presented herein are based exclusively on objective scientific inquiry, ensuring that the results and conclusions are impartial and reflective of the empirical evidence gathered. The author maintains that this absence of conflict guarantees the integrity and validity of the research contribution to the field of maternal health.

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