

The Relationship Between Knowledge and Attitudes of Midwives Regarding TT 1 Immunization Screening to TT Booster at Bonepantai Community Health Center

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Abstract. One measure of the effectiveness of health sector improvement is the Maternal Mortality Rate (MMR). Maternal mortality was predicted by the World Health Organization (2020) to be 303,000, or around 216 per 100,000 live births. Tetanus is a dangerous illness that can be fatal. Maternal and neonatal mortality and morbidity are still caused by tetanus. The secret to effectively lowering mother and newborn mortality is using midwives as a bridge to learn about the history of TT vaccination. The goal of this study was to ascertain how midwives' attitudes and knowledge on TT immunization screening 1 relate to TT booster. This study employed a cross-sectional method of quantitative research. 30 individuals made up the study's population, and 30 individuals were included in the overall sampling procedure. Chi Square was utilized to analyze data. The findings revealed a strong correlation between midwives' attitudes and TT immunization ($p = 0.000$) and between midwives' knowledge and TT immunization ($p = 0.000$). Thus, it can be said that midwives' attitudes and understanding about TT booster and TT 1 vaccination screening at Bonepantai Community Health Center are related.

Keywords: Knowledge; Maternal Mortality Rate; Midwives' Attitudes; TT Immunization; Tetanus.

1. INTRODUCTION

Indonesia, as a developing country, is currently actively implementing development in all health sectors. According to the Basic Thoughts of the National Health System, as one component of general welfare within the national goals, development in the health sector is basically the community's implementation of health efforts to achieve the ability to live healthily for every resident in order to realize an optimal level of health (Ministry of Health, 2018).

In recent years, maternal and child health has gained international attention. Maternal tetanus infection is one of the factors contributing to maternal mortality in Indonesia. Even in cases when critical care is available, tetanus is an acute infectious illness with a high case-fatality rate that is brought on by a toxin-producing strain of the bacterium *Clostridium tetani* (*C. tetani*). Tetanus is therefore a public health issue in many parts of the world. Although tetanus can affect people of all ages, many cases are associated with childbirth. This can occur as a result of unhygienic delivery and abortion practices, affecting inadequately vaccinated mothers and their newborns. Furthermore, poor postpartum hygiene and poor umbilical cord care practices also increase the risk of tetanus (WHO, 2020).

In 2022, the Ministry of Health (MOH) defined Tetanus Toxoid (TT) vaccination as giving tetanus shots to pregnant women or women of childbearing age (WUS). This measure

is the easiest and most effective way to prevent neonatal tetanus. With complete tetanus immunization, protection against tetanus infection can reach over 90%. A woman is considered complete if she has received five tetanus immunizations, which will provide protection against tetanus for 25 years.

According to statistics from the 2018 Indonesian Demographic and Health Survey (SDKI), there are still 15 baby deaths per 1,000 live births in Indonesia as a result of neonatal tetanus. Lack of Tetanus Toxoid vaccination prior to marriage is one of the reasons for this infant's demise. The use of Tetanus Toxoid vaccination among women of reproductive age before to marriage is still subpar, despite the fact that it is crucial for postpartum tetanus prevention and for the mother's offspring. The Indonesian health profile data from 2018 shows that, at less than 5%, the percentage of women of reproductive age who have had TT1 to TT5 vaccinations is remains extremely low

Compared to 4 occurrences in 2020, there were 11 cases of newborn tetanus in 2021. Between 2020 and 2021, the Case Fatality Rate (CFR) rose from 50% to 82%. In 2021, there were seven provinces with newborn tetanus cases: Jambi, South Sumatra, East Java, South Sulawesi, North Kalimantan, West Kalimantan, and West Sulawesi. Five of the seven provinces South Sumatra, South Sulawesi, East Java, West Kalimantan, and West Sulawesi reported newborn tetanus fatalities. With three cases and a 100% CFR, South Sumatra Province had the most newborn tetanus cases in 2021 (Ministry of Health of the Republic of Indonesia, 2022).

With an estimated 800,000–1,000,000 fatalities annually, tetanus is a major cause of mortality that can occur anywhere in the world (Subagiarta, 2018). Neonatal tetanus is the second most common cause of death globally among vaccine-preventable infections, and the majority of tetanus deaths occur in underdeveloped nations. Every year, an estimated 248,000 newborns die from tetanus. Tetanus still has a high incidence and fatality rate in poor nations like Indonesia. Tetanus is still a health concern as a result (Subagiarta, 2018).

Infants, toddlers, elementary school students, and WUS will be protected against the spread of PD3I diseases through high and even immunization coverage of at least 95% for all antigens, ultimately leading to the development of group immunity or immune communities (herd immunity) (Ministry of Health of the Republic of Indonesia, 2021). Less than 10% of all women of reproductive age in Indonesia were vaccinated against tetanus toxoid in 2019, ranging from TT 1 to TT 5 (Indonesian Health Profile, 2019).

Vulnerable populations are given free immunization services by the Indonesian government, such as Tetanus Toxoid (TT) vaccination for women of childbearing age (WUS) through prenatal care (ANC) services at primary health facilities, private practice physicians,

and independent practice midwives. By giving TT vaccinations to all pregnant women and women of childbearing age, Indonesia successfully eradicated maternal and neonatal tetanus (MNT) in 2016. The absence of health promotion initiatives at Community Health Centers (Puskesmas) and the low level of public knowledge about TT vaccination, despite the fact that the vaccination is offered at no cost in government health service facilities, are factors contributing to the poor coverage of TT vaccination.

Infections that can be fatal can result from an unsterile birth procedure or injuries sustained by a pregnant woman prior to delivery. A tetanus toxoid (TT) immunization campaign is being launched for pregnant women and women of childbearing age (WUS) in an effort to lower tetanus infections (Indonesian Health Profile, 2019).

Currently, a tetanus shot is a requirement for couples planning to get married, especially the bride. For married women, the tetanus vaccine helps boost their immunity against tetanus infection. This immunity is then passed on to the baby, protecting them from tetanus infection during childbirth. The tetanus toxoid vaccine is crucial because it also protects against tetanus infection during first-time sexual intercourse (Budiman, 2014).

The success of the TT immunization program in achieving optimal population coverage targets is not always realized. Various factors can influence the implementation of TT immunization, including knowledge, family support, and the attitudes of premarital mothers. Good knowledge about TT immunization can increase awareness of the importance of vaccination and motivate premarital mothers to receive regular immunizations (Syaida & Rohmah, 2017). Family support also plays a crucial role in the implementation of TT immunization. Support from family members can provide emotional and practical encouragement for premarital mothers to seek appropriate health care, including TT immunization. Furthermore, premarital mothers' attitudes toward TT immunization are also a significant factor. Positive attitudes, such as belief in the benefits of immunization and confidence in its safety, can increase the likelihood of immunization, while negative attitudes, such as concerns about side effects or doubts about its benefits, can hinder implementation (Petun Health Center Profile, 2022).

Maternal understanding affects how vaccinations are administered, which in turn affects personal views. A woman's level of awareness and desire to engage in integrated health service posts (Posyandu) or vaccination activities increases with her understanding of the significance of immunization. If people with a strong dedication to immunization and knowledge make a real effort, the TT vaccination campaign can succeed (Utaya, 2018).

Positive attitudes will lead to positive behavior. Attitudes, as a form of closed behavior, can determine the direction of better behavior. The circulation of misinformation will have an impact on attitudes that are not supportive of the implementation of TT immunization. One of these impacts is the potential impact on both the mother and the unborn baby if pregnancy occurs.

Midwives, as health workers, must be able to approach and provide information and education (IEC) to women before marriage and pregnant women about TT immunization. However, midwives, as health workers, must also do the same when educating patients. In this study, researchers sought to determine midwives' knowledge and attitudes toward TT1 through TT Booster immunization screening at the Bonepantai Community Health Center.

2. RESEARCH METHOD

This study employed a cross-sectional, quantitative research design. The Bonepantai Community Health Center in Bone Bolango Regency, Gorontalo, served as the research site. The complete sampling approach was used to choose a sample of 30 individuals from the study's population of 30. The two types of data analysis were univariate analysis and bivariate analysis. Frequency distribution was employed for univariate analysis. Chi Square was employed in bivariate analysis.

3. RESULTS AND DISCUSSION

Univariate Analysis

Table 1. Frequency Distribution by Age.

Age	Frequency	Percentage (%)
<20 Years	0	0
20 - 35 Years	18	60
>35 Years	12	40
Total	30	100

Table 1 shows the frequency distribution Of the 25 responders, 18 (60%) were between the ages of 20 and 35, while the remaining 12 (40%) were older than 35

Table 2. Frequency Distribution Based on Education.

Education	Frequency	Percentage (%)
D3 Midwife	22	73.3
Bachelor of Midwifery	7	23.3
Midwife Profession	1	3.3
Total	30	100

Table 2 shows the frequency distribution. In terms of education, 22 respondents (73.3%) had a D3 midwifery education, 7 respondents (23.3%) had an S1 midwifery education, and 1 respondent (3.3%) had a professional midwifery education.

Table 3. Frequency Distribution Based on Length of Service.

Length of work	Frequency	Percentage (%)
<1 year	3	10
1-5 years	9	30
6-10 years	6	20
>10 years	12	40
Total	30	100

Table 3 shows the distribution of respondent frequency by duration of service. Twelve respondents (40%) have worked for more than ten years, whereas nine respondents (30%) have worked for one to five years, six respondents (20%) have worked for six to ten years, and three respondents (10%) have worked for less than a year.

Table 4. Frequency Distribution Based on TT Administration.

TT administration	Frequency	Percentage (%)
Complete	17	56.7
Incomplete	13	48.3
Total	30	100

Table 4 shows the frequency distribution Based on TT administration, 17 respondents (56.7%) had received a complete TT vaccination, whereas 13 respondents (48.3%) had received an incomplete vaccination.

Table 5. Frequency Distribution Based on Knowledge.

Knowledge	Frequency	Percentage (%)
Good	14	46.7
Enough	8	26.7
Not enough	8	26.7
Total	30	100

Table 5 shows the frequency distribution According to respondents' knowledge, 14 respondents (46.7%) had strong knowledge, 8 respondents (26.7%) had adequate knowledge, and 8 respondents (26.7%) had less information.

Table 6. Frequency Distribution Based on Attitude.

Attitude	Frequency	Percentage (%)
Agree	19	63.3
Don't agree	11	36.7
Total	30	100

Table 6 shows the frequency distribution According to respondents' attitudes, 19 respondents (63.3%) had an attitude of agreement, whereas 11 respondents (36.7%) had an attitude of dissent.

Bivariate Analysis

Table 7. Relationship between Knowledge and TT Immunization.

		Giving_TT		Total	P-value
		Complete	Incomplete		
Knowledge	Good	13	1	14	0,000
	Enough	4	4	8	
	Not enough	0	8	8	
Total		17	13	30	

In line with Table 7. There is a correlation between midwives' expertise and the administration of TT vaccination, as indicated by the p-value of 0.000 (<0.05).

Table 8. Relationship between Attitude and TT Immunization.

		Giving_TT		Total	P-value
		Complete	Incomplete		
attitude	Agree	16	3	19	0,000
	Don't agree	1	10	11	
Total		17	13	30	

Table 8 indicates a p-value of 0.000 (<0.05) for the link between attitudes and the choice of delivery attendant, indicating a connection between the midwife's attitude and the administration of TT vaccination.

Table 1 shows the frequency distribution of respondents by age. Of the 30 respondents, 18 (60%) were between the ages of 20 and 35. One of the demographic model's variables is age, which influences how people make maintenance decisions and may be utilized as an absolute measure or various psychological markers. Respondents are capable of understanding or comprehending TT vaccination and have mature thought processes. An individual's level of maturity and power in thinking and working will increase with age. Age has an impact on memory, and as a person ages, so does the amount of knowledge they gain. An individual's mental growth processes improve with age. (2015, Anni).

Table 2 shows the frequency distribution In terms of education, 22 respondents (73.3%) held a Diploma 3 in midwifery. Notoatmodjo (2014) claims that education is a deliberate attempt to persuade people individuals, groups, or communities to follow the educator's expectations. Higher education makes it simpler for people to absorb information, which leads to greater understanding, and vice versa.

The majority of respondents (12 respondents) had worked for more than ten years, according to Table 3's frequency distribution of respondents depending on length of service. The researcher assumed that a midwife would have greater experience the longer she worked.

A midwife with extensive expertise will undoubtedly be knowledgeable about a variety of tetanus incidences, causes, and remedies that arise in the field.

based on Table 7. A p-value of 0.000 (<0.05) indicates a link between midwives' expertise and TT vaccination provision.

A person's understanding of a thing through their senses hearing, smell, sight, taste, and touch leads to knowledge. Knowledge is the outcome of sensing something. The five human senses sight, hearing, smell, taste, and touch are used for this sensing. A person's attitude is based on their knowledge, which also serves as the foundation for their behavior. Knowledge is the outcome of sensing something. Sight, hearing, smell, taste, and touch are the five human senses that are used for sensing. Some are acquired through hearing and vision. A person's actions are greatly influenced by their knowledge (Notoatmodjo, 2018).

Knowledge significantly influences whether someone accepts or rejects tetanus tetanus (TT) immunization. Those with good knowledge are more likely to accept tetanus tetanus (TT) immunization, while those with poor knowledge are more likely to refuse it. Knowledge relates to midwives' understanding of the causes of tetanus, the benefits of tetanus tetanus (TT) immunization, the schedule for tetanus tetanus (TT) 1 to the booster, and indications for contraindications. Good knowledge enables midwives to provide appropriate education and improve pregnant women's compliance with immunization. Poor knowledge is often a factor in low immunization coverage among pregnant women and women of childbearing age (Nila, 2021).

Table 8 indicates that there is a link between the midwife's attitude and the administration of TT vaccination, with a p-value of 0.000 (<0.05) for the association between attitude and birth attendant choice. A person's closed reaction to a certain stimulus or item, which already incorporates the relevant variables of opinion and emotion, is known as their attitude. Thoughts, emotions, attention, and other psychological symptoms are all part of attitude. (2014, Notoatmodjo).

A respondent's preparedness or willingness to act but not yet putting it into practice is referred to as their attitude. The learning process is one of numerous steps that make up this process, which takes time to complete. By making connections between one experience and another, this learning process is brought about by an individual's interaction with a certain object. A person's attitude toward the action they will do can be determined by their level of experience. According to this study, the relationship between attitude and TT immunization implementation in pregnant women at the Fajar Bulan Community Health Center in West Lampung in 2023 was caused by respondents who had a favorable opinion of TT immunization,

which they then applied to their behavior when administering TT immunization. Likewise, respondents who had a negative view towards TT immunization had a tendency and influenced their behavior not to carry out TT immunization.

Attitude reflects a midwife's acceptance, belief, and commitment to the importance of immunization in her profession. A positive attitude influences her active participation in screening and encourages clients to receive immunizations on schedule. Previous studies with pregnant women and women of childbearing age showed that attitude significantly correlated with the level of completeness of TT immunization for clients (Nila, 2021).

This study is consistent with Rusmila's (2018) study, "The relationship between maternal attitudes and the behavior of providing TT immunization at the Darul Kamal Community Health Center, Aceh Besar Regency," which found that 38 (49.4%) of the 47 respondents had a positive attitude.

An individual's closed response to a stimuli or item is known as their attitude. Personal experience is one of the many variables that shape views, and it must make a lasting imprint. As a result, if the personal experience takes place in an emotional setting, attitudes will be established more readily (Dwina, 2017). Notoadmodjo (2018) defines attitude as an individual's closed reaction to certain items or stimuli. This already incorporates the relevant aspects of emotion and opinion. Personal experience, the impact of significant others, cultural influences, and information sources are all factors that affect an individual's attitude (Wawan, 2016).

The aforementioned study's findings indicate that some respondents have a negative attitude but complete TT immunization, while others have a positive attitude but incomplete TT immunization. This could be because midwives who have a negative attitude toward TT immunization have more concerns after learning that administering TT immunization is beneficial. Similarly, individuals who have a good attitude but do not administer TT vaccination might be the result of only having a favorable opinion of TT vaccination but failing to put it into practice. This phenomenon can be due to busy work, low knowledge about the benefits of TT immunization (Fadhila *et al*, 2025).

As a health worker, direct support and examples are needed from health workers through complete TT immunization and counseling on the benefits of TT immunization so that mothers can understand well and apply it in the application of TT immunization. Attitudes related to midwives' compliance with TT immunization indicate that a midwife who has received information about TT immunization will think and try to feel the benefits of TT immunization, so that mothers are willing to complete TT immunization. The driving force that

moves us to behave in a certain way. Behavior can be maintained, reduced, or increased as a result of interactions with the environment. The direction or goal of conduct, the intensity of the reaction, and the persistence of behavior are all components of motivation (Purwanto, 2017). In addition to administering vaccinations, midwives also educate patients, assess for TT immunization needs (such as prior immunization history), and make sure women receive TT 1 to boosters in accordance with guidelines. Obstacles in the understanding of certain midwives can impact the service and coverage of maternal health program immunizations.

To achieve the target of achieving complete TT immunization status, namely 80% of the target for achieving TT 5, the role and support of health workers are needed. The role or support by health workers (midwives) to clients, namely providing information about immunization on matters related to tetanus toxoid immunization, encouraging mothers to return for immunization both verbally and in writing in the KIA book and tetanus toxoid card. So it is hoped that they will know, understand and implement the immunization program according to the established schedule (Azizah, 2015).

4. CONCLUSION

According to the researcher's findings, there is a significant correlation between midwives' knowledge and the Bonepantai Health Center's implementation of TT1 to TT Booster immunization (p-value significance = 0.000), as well as a significant correlation between midwives' attitudes and the same (p-value significance = 0.000).

Researchers hope to increase awareness in the implementation of the role of health workers, especially midwives, as educators and innovators both in health centers, hospitals and in the community, such as educating to conduct counseling activities by providing information about the benefits, dangers and the appropriate timing of TT immunization. To support the dominant variable, efforts can be made to add health workers to programs related to pregnant women. This mapping also serves as a prime example of healthy living behavior. In the context of health care for pregnant women and women of reproductive age, the interaction between midwives' knowledge and attitudes toward TT vaccination screening 1 to booster is crucial. Good knowledge and favorable attitudes are linked to improved vaccination behaviors and greater levels of dose completion, according to research on TT immunization in other groups. This suggests that in order to support successful TT vaccination campaigns in the field, initiatives to strengthen midwives' competency through education and attitude development are crucial.

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