



## The Effect of Tetanus Toxoid Immunization Counseling on the Knowledge of Prospective Brides and Grooms at Wayabula Community Health Center

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**Abstract.** Tetanus Toxoid (TT) immunization is a key preventive intervention to protect women of reproductive age and newborns from tetanus infection. Despite its importance, limited knowledge among prospective brides may reduce the effectiveness of TT immunization programs. This study aimed to analyze the effect of TT immunization counseling on the knowledge levels of prospective brides at Wayabula Public Health Center. A quantitative study using a quasi-experimental one-group pretest–posttest design was conducted involving 40 prospective brides selected through total sampling. Data were collected using a structured questionnaire measuring respondents' knowledge before and after counseling. The Wilcoxon Signed Rank Test was used to analyze differences in knowledge levels. The results showed a significant improvement in knowledge after counseling, with the majority of respondents demonstrating higher posttest scores compared to pretest scores and no respondents experiencing a decrease in knowledge. These findings indicate that counseling plays an important role in enhancing understanding of TT immunization, including its purpose, benefits, and preventive value. In conclusion, TT immunization counseling is effective in improving knowledge among prospective brides and should be integrated as a mandatory component of routine immunization services. Strengthening counseling activities is expected to support informed decision-making, promote positive health behavior, and contribute to the prevention of tetanus in mothers and newborns.

**Keywords:** Counseling; Knowledge; Prospective Brides; Reproductive Health; Tetanus Toxoid Immunization

### 1. INTRODUCTION

Tetanus is an acute infectious disease caused by the bacterium *Clostridium tetani*, which produces a powerful neurotoxin affecting the nervous system. The disease is characterized by muscle rigidity, painful spasms, and dysfunction of the autonomic nervous system (Arianggara & Hafid, 2025). In severe cases, tetanus can lead to respiratory failure and death if appropriate medical treatment is not provided. Despite being preventable through immunization, tetanus remains a significant public health problem, particularly in developing countries (Nia et al., 2023).

Tetanus poses a serious risk to pregnant women and newborns, especially in populations with low immunization coverage. Neonatal tetanus is a preventable cause of neonatal mortality and is often associated with inadequate maternal immunity and unsafe delivery practices (Azizah, 2019). Protection against tetanus prior to pregnancy is therefore essential to ensure maternal and neonatal health. Strengthening preventive measures before marriage is a critical strategy in reducing tetanus-related complications (Lubis, 2024).

Tetanus Toxoid immunization is one of the most effective interventions for preventing tetanus. This immunization works by stimulating the immune system to produce antibodies against tetanus toxin, providing long-term protection (Sari et al., 2023). TT immunization is

recommended for women of reproductive age, including prospective brides, to ensure immunity before pregnancy. Adequate TT immunization coverage has been shown to significantly reduce the incidence of tetanus and neonatal tetanus (Yayat Hidayat, 2022).

In Indonesia, TT immunization has been incorporated into national reproductive health programs and is required for prospective brides. The immunization certificate serves as part of the administrative requirement for marriage registration through the Office of Religious Affairs (Mahduroh, Jesy Fatima, 2023). This policy aims to increase immunization coverage and protect women before entering pregnancy. However, achieving high coverage alone is insufficient without adequate knowledge and understanding among prospective brides (Nofianti et al., 2025).

In practice, many prospective brides undergo TT immunization without a clear understanding of its purpose and benefits. Immunization is frequently perceived as a mandatory administrative requirement rather than a preventive health measure. This perception may lead to low awareness and limited engagement in reproductive health practices. As a result, the effectiveness of TT immunization programs may be compromised .

Knowledge is a key determinant of health behavior and influences individuals' attitudes and decisions regarding health interventions. Individuals with sufficient knowledge are more likely to accept immunization voluntarily and adhere to health recommendations. Conversely, limited knowledge may result in passive compliance and lack of awareness of health risks. Improving knowledge among prospective brides is therefore essential to support successful immunization programs.

Health counseling is an effective strategy to improve knowledge and promote positive health behaviors. Through counseling, health workers can provide accurate information, address misconceptions, and encourage active participation in health programs. TT immunization counseling can enhance understanding of the importance, benefits, and schedule of immunization (Richa, 2023). Effective counseling is expected to improve knowledge and foster positive attitudes toward TT immunization among prospective brides.

Preliminary observations conducted at Wayabula Public Health Center indicate that the level of knowledge regarding TT immunization among prospective brides remains low. Interviews with six prospective brides showed that only two participants understood the purpose and benefits of TT immunization, while the majority received immunization solely to fulfill marriage administrative requirements. These findings highlight the need for targeted educational interventions. Therefore, this study aims to determine the effect of Tetanus Toxoid

immunization counseling on the knowledge level of prospective brides at Wayabula Public Health Center.

## 2. RESEARCH METHOD

This study employed a quantitative research approach using a quasi-experimental design with a one-group pretest–posttest method. The design was chosen to assess changes in the level of knowledge of prospective brides before and after receiving Tetanus Toxoid immunization counseling. The study was conducted at Wayabula Public Health Center, which provides TT immunization services for prospective brides. The research was carried out during the period determined by the health center’s service schedule.

The study population consisted of prospective brides who visited Wayabula Public Health Center for TT immunization. A total of six prospective brides were included as research participants using a total sampling technique, as all eligible individuals during the study period were involved. Inclusion criteria included prospective brides who were willing to participate and able to communicate effectively, while those who declined participation were excluded. Data were collected using a structured questionnaire that measured knowledge related to the definition, purpose, benefits, and schedule of TT immunization.

Data collection was conducted in two stages, namely before and after the counseling intervention. The pretest was administered to assess participants’ baseline knowledge prior to counseling, followed by TT immunization counseling delivered by health personnel. After the counseling session, a posttest was conducted using the same questionnaire to evaluate changes in knowledge levels. Data were analyzed descriptively and inferentially to determine differences in knowledge before and after counseling, with results presented in tables and narrative form.

## 3. RESULTS AND DISCUSSION

### Univariate Analyze

**Table 1.** Distribution of Respondents by Age Group.

Age Group (Years)	Frequency (n)	Percentage (%)
< 20	6	15.0
20–35	32	80.0
> 35	2	5.0
Total	40	100.0

Table 1 shows that most respondents were in the 20–35 years age group, accounting for 32 respondents (80.0%). Respondents aged under 20 years accounted for 6 people (15.0%), while only 2 respondents (5.0%) were over 35 years old. The findings indicate that the majority

of respondents were within the healthy reproductive age group, which is the primary target for Tetanus Toxoid immunization services for prospective brides.

**Table 2.** Distribution of Respondents by Educational Level.

<b>Educational Level</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Primary School	12	30.0
Junior High School	11	27.5
Senior High School	17	42.5
Total	40	100.0

Table 2 indicates that the highest proportion of respondents had a senior high school education, with 17 respondents (42.5%). Respondents with primary school education accounted for 12 people (30.0%), while those with junior high school education numbered 11 people (27.5%). Educational level is an important characteristic that may influence respondents' ability to understand health-related information, including information about Tetanus Toxoid immunization.

**Table 3.** Distribution of Knowledge Level Before Counseling.

<b>Knowledge Level</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Poor	25	62.5
Fair	7	17.5
Good	8	20.0
Total	40	100.0

Table 3 shows that prior to counseling, most respondents had a poor level of knowledge regarding Tetanus Toxoid immunization, with 25 respondents (62.5%). Respondents with a fair level of knowledge accounted for 7 people (17.5%), while 8 respondents (20.0%) had a good level of knowledge. These results indicate that baseline knowledge among prospective brides was generally low before the counseling intervention.

**Table 4.** Distribution of Knowledge Level After Counseling.

<b>Knowledge Level</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Poor	1	2.5
Fair	10	25.0
Good	29	72.5
Total	40	100.0

Table 4 shows a substantial increase in respondents' knowledge levels after receiving Tetanus Toxoid immunization counseling. Most respondents achieved a good level of knowledge, with 29 respondents (72.5%). Only one respondent (2.5%) remained in the poor knowledge category, indicating a marked improvement following the counseling session.

**Table 5.** Distribution of Counseling Knowledge Level Before Intervention.

<b>Knowledge Level</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Poor	25	62.5
Fair	6	15.0
Good	9	22.5
Total	40	100.0

Table 5 shows that before the counseling intervention, most respondents had a poor level of counseling-related knowledge, accounting for 25 respondents (62.5%). Respondents with fair knowledge numbered 6 people (15.0%), while 9 respondents (22.5%) had a good level of knowledge. This distribution reflects limited understanding of immunization counseling prior to the intervention.

**Table 6.** Distribution of Counseling Knowledge Level After Intervention.

Knowledge Level	Frequency (n)	Percentage (%)
Fair	9	22.5
Good	31	77.5
Total	40	100.0

Table 6 indicates that after counseling, the majority of respondents demonstrated a good level of knowledge, with 31 respondents (77.5%). The remaining 9 respondents (22.5%) were in the fair knowledge category, and no respondents remained in the poor category. This shift demonstrates a clear improvement in respondents' understanding following the counseling intervention.

### Bivariate Analyze

**Table 7.** Wilcoxon Signed Rank Test for Knowledge Level Before and After Counseling.

Rank Category	N	Mean Rank	Sum of Ranks
Negative Ranks (After < Before)	0	0.00	0.00
Positive Ranks (After > Before)	29	15.00	435.00
Ties (After = Before)	11	–	–
Total	40		

The table presents the distribution of rank changes in respondents' knowledge levels before and after counseling. A total of 29 respondents showed an increase in knowledge scores following the counseling intervention, indicating that most participants benefited positively from the information provided. No respondents experienced a decrease in knowledge level, suggesting that the counseling did not have any negative effect on respondents' understanding. Meanwhile, 11 respondents had identical knowledge scores before and after counseling, which may indicate that these respondents already possessed sufficient baseline knowledge or required more intensive educational approaches. Overall, the dominance of positive ranks and the absence of negative ranks demonstrate that the counseling intervention effectively improved respondents' knowledge regarding Tetanus Toxoid immunization.

### Discussion

The findings of this study indicate that Tetanus Toxoid (TT) immunization counseling has a significant effect on improving the knowledge of prospective brides. Before counseling, the majority of respondents demonstrated low levels of knowledge regarding TT immunization, while after counseling most respondents showed a marked improvement in their knowledge

level. This result confirms that counseling is an effective educational intervention within reproductive health services, particularly for individuals who are preparing for marriage and future pregnancy. Knowledge improvement is a critical outcome because understanding the purpose and benefits of immunization is essential for long-term compliance and positive health behavior. These findings emphasize that counseling should be considered an integral component of immunization services rather than a complementary activity.

Knowledge is a fundamental determinant of health behavior and plays a central role in shaping attitudes, beliefs, and actions related to health. According to Mareta & Widyastuti, (2025) knowledge forms the cognitive basis upon which individuals evaluate health information and make decisions. In the context of TT immunization, adequate knowledge allows prospective brides to understand not only the procedural aspects of immunization but also its preventive value for maternal and neonatal health. Without sufficient knowledge, individuals may comply with immunization programs solely due to administrative pressure, resulting in superficial participation rather than informed engagement. This study demonstrates that counseling can bridge this knowledge gap effectively.

The low baseline knowledge observed among respondents prior to counseling is consistent with previous studies conducted in similar settings. Research by Sari et al., (2023) found that many women of reproductive age had limited understanding of TT immunization and perceived it merely as a requirement for marriage registration. Similarly, Yolanda & Febriyani (2024) reported that inadequate dissemination of health information contributed to poor immunization knowledge among prospective brides. These studies highlight a recurring issue in reproductive health services, where policy enforcement is not always accompanied by sufficient education. The present study reinforces the need to strengthen educational components within immunization programs.

The significant increase in knowledge after counseling supports the effectiveness of health education interventions based on interpersonal communication. Counseling allows for two-way interaction between health workers and clients, enabling clarification of misconceptions and reinforcement of key messages. Giopani et al., (2023) emphasized that education functions as an enabling factor that facilitates behavior change by improving knowledge and skills. In this study, counseling served as an enabling intervention that enhanced respondents' understanding of TT immunization, including its purpose, benefits, and timing. This finding is consistent with Mellany et al. (2025), who reported improved immunization knowledge following structured counseling sessions.

The Wilcoxon Signed Rank Test results further strengthen the evidence for counseling effectiveness, as most respondents showed positive changes in knowledge scores and none experienced a decline. The absence of negative ranks suggests that counseling does not confuse or mislead participants but instead consistently contributes to improved understanding. Respondents who showed no change in knowledge levels may have already possessed adequate baseline knowledge or may require more intensive or repeated educational interventions. Nurrizam & Agusthia (2024) noted that individual learning outcomes are influenced by prior knowledge, motivation, and cognitive readiness. Therefore, counseling strategies should be flexible and adaptive to individual needs.

Educational level is an important factor that may influence the effectiveness of counseling. In this study, respondents had varying educational backgrounds, ranging from primary school to senior high school. Previous research has shown that individuals with higher educational attainment generally have better health literacy and greater capacity to process health information (Nutbeam, 2008). Respondents with lower education levels may benefit from counseling methods that use simple language, visual aids, and practical examples. Tailoring counseling approaches to educational background can enhance comprehension and ensure that information is accessible to all clients.

Age characteristics also support the relevance of counseling interventions in this study. Most respondents were within the 20–35 year age group, which is considered the optimal reproductive age. Individuals in this age group are often more receptive to health information related to marriage, pregnancy, and family planning. Providing counseling at this stage can influence long-term health behavior and promote preventive practices throughout the reproductive life course. Counseling before marriage is particularly strategic because it prepares individuals with knowledge before they face pregnancy-related health risks.

The findings of this study have important implications for the implementation of TT immunization programs at primary health care facilities. Immunization services should not focus solely on achieving coverage targets but should also prioritize the quality of education delivered to clients. Health workers play a crucial role in ensuring that counseling is conducted effectively, clearly, and empathetically. Allocating sufficient time for counseling and using standardized educational materials may enhance the consistency and impact of counseling sessions. Integrating counseling into routine immunization workflows can improve both knowledge outcomes and client satisfaction.

From a theoretical perspective, the results of this study align with the Health Belief Model, which suggests that individuals are more likely to adopt preventive health behaviors

when they understand the benefits and perceive the risks associated with inaction (Ikhwan et al., 2024). Counseling increases perceived benefits and reduces perceived barriers by addressing misinformation and uncertainty. As knowledge improves, individuals are more likely to develop positive attitudes toward immunization and maintain compliance beyond initial requirements. This theoretical alignment strengthens the rationale for counseling-based interventions in immunization programs.

Despite its contributions, this study has several limitations that should be acknowledged. The relatively small sample size limits the generalizability of the findings to broader populations. In addition, the use of a one-group pretest–posttest design without a control group makes it difficult to rule out external influences on knowledge improvement. However, the consistency of the findings with previous research suggests that counseling is a robust intervention. Future studies should employ larger samples and controlled designs to further validate these findings.

In conclusion, this study demonstrates that TT immunization counseling significantly improves knowledge among prospective brides. The findings are consistent with previous research and health behavior theories that emphasize the role of education in promoting preventive health practices. Strengthening counseling services within TT immunization programs is essential to ensure informed participation, enhance health literacy, and support sustainable reproductive health outcomes. Integrating effective counseling into routine services can transform immunization from an administrative obligation into a meaningful preventive health intervention.

#### **4. CONCLUSION**

This study concludes that Tetanus Toxoid immunization counseling has a significant effect on improving the knowledge levels of prospective brides. The findings show a clear increase in knowledge after counseling, with most respondents demonstrating better understanding of the purpose, benefits, and importance of TT immunization. These results indicate that counseling is an effective educational intervention in reproductive health services. Improved knowledge is essential to ensure that immunization is perceived not merely as an administrative requirement but as a meaningful preventive health measure.

Furthermore, the results highlight the importance of integrating structured counseling into routine TT immunization services at primary health care facilities. Health workers play a key role in delivering clear and accurate information tailored to the needs and educational backgrounds of clients. Strengthening counseling services can support informed decision-

making and promote positive health behavior among prospective brides. Ultimately, effective counseling contributes to the prevention of tetanus and supports better maternal and neonatal health outcomes. Acknowledgement. The heading should not be given a number and should instead be considered as a subsection heading.

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