

## Factors Associated with the Utilization of Tetanus Toxoid Immunization Services among Pregnant Women in Oepoi Health Center, Kupang, East Nusa Tenggara

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### ABSTRACT

**Background:** The tetanus toxoid (TT) immunization program is a process of building immunity as an effort to prevent tetanus infection. TT immunization is important to form tetanus antibodies that will prevent neonatal tetanus. The coverage of TT immunization in Oepoi Community Health Center Working Area in 2020 is classified as very low, which was only 37.06%. The low coverage of TT Immunization indicated a lack of utilization of immunization services by pregnant women. This study aimed to determine the factors associated with the utilization of Tetanus Toxoid immunization services for pregnant women in the working area of the Oepoi Health Center.

**Subjects and Method:** This cross-sectional study was conducted in the working area of the Oepoi Health Center, Kupang, East Nusa Tenggara from March to October 2022. A total of 46 third trimester pregnant women were selected by simple random sampling. The dependent variable was the TT immunization service. The independent variables were knowledge, the role of health workers, husband's support, and parity. Data was collected by using a questionnaire and analyzed by using the chi-square test.

**Results:** There is a relationship between knowledge (OR= 48.00; 95%CI= 7.84 to 293.71;  $p < 0.001$ ), the role of health workers (OR= 22.16; 95%CI= 2.57 to 190.99;  $p < 0.001$ ) husband's support (OR=10.85; 95%CI= 2.68 to 43.89;  $p < 0.001$ ), parity (OR= 3.73; 95%CI= 1.08 to 12.90;  $p = 0.033$ ) and the utilization of the TT immunization service in the Oepoi Health Center working area.

**Conclusion:** Knowledge, the role of health workers, husband's support, parity are related with the utilization of TT immunization services in the working area of the Oepoi Health Center.

**Keywords:** immunization, tetanus toxoid, pregnant women.

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### BACKGROUND

The immunization program aims to reduce morbidity, disability and death from diseases that can be prevented by immunization. One of the important immunizations programs recommended by the government is

Tetanus Toxoid (TT) immunization, which is a process to build immunity as an effort to prevent tetanus infection. Tetanus toxoid immunization in pregnant women is considered very important because by getting tetanus toxoid immunization in the body, it

can form tetanus antibodies that will prevent neonatal tetanus. Tetanus neonatorum is a tetanus disease that occurs in neonates (infants less than 1 month old), caused by *Clostridium Tetani*, which is a germ that secretes a toxin that attacks the central nervous system.

The coverage of Tetanus Toxoid Immunization (TT) for pregnant women in East Nusa Tenggara in 2020 is 68.65%, where the number of pregnant women is 131,054 people who carry out TT Immunization. TT Immunization Coverage in Kupang City is 65.78%, where the number of pregnant women is 9,909 people who conduct TT Immunization. The coverage of TT immunization in the working area of the Oepoi community health center in 2020 was 37.06%, where the number of pregnant women was 1,365 people who conduct TT immunization, which is quite low.

The low coverage of TT Immunization indicates that there is a lack of optimal utilization of immunization services by pregnant women. Utilization of a health service can be reviewed using Andersen's Theory, which involves 3 (three) things, namely influenced by predisposing characteristics, enabling characteristics and need characteristics.

Previous research stated that 84.1% of respondents did not take advantage of TT Immunization and 15.9% of pregnant women carried out TT Immunization and there was a significant relationship between knowledge, the role of officers and husband's support with the use of TT Immunization services. The results of the study showed that there was a significant relationship between parity and Tetanus Toxoid Immunization. And it can be seen that the majority of pregnant women with the multipara category are more dominant for carrying out tetanus toxoid immunization.

Based on initial interviews conducted at the Oepoi community health center, out of 10 pregnant women interviewed by the researchers, 4 pregnant women took full TT immunization and 6 pregnant women did not take full TT immunization, 5 pregnant women did not know the benefits of TT immunization and never received information about TT immunization by health workers, and 4 pregnant women with primipara parity did not know the importance of TT immunization, while 7 respondents said that their husbands had never reminded them of the schedule for conducting TT immunization and vice versa.

The results of the interviews concluded that the low utilization of TT immunization in the work area of the Oepoi community health center was influenced by the variables of knowledge, husband's support, role of health workers and parity of pregnant women regarding immunization. This study aims to analyze factors related to the utilization of TT immunization services for pregnant women in the Oepoi community health center working area.

## SUBJECTS AND METHOD

### 1. Study Design

This study is an analytic survey with a cross-sectional study design. The study is located in the work area of the Oepoi community health center and is carried out in March-October 2022.

### 2. Population and Sample

The population in this study were third trimester pregnant women who lived in the working area of the Oepoi Community Health Center in August to September 2022, which were 181 people. The sample in this study were 46 third trimester pregnant women carried out by simple random sampling.

### 3. Study Variables

The dependent variable was the TT immunization service. The independent variables were knowledge, the role of health workers, husband's support and parity.

### 4. Operational Definition of Variables

**Utilization of TT immunization** is the action of pregnant women in getting TT immunization services, with the criteria of utilizing TT immunization service at least 1 time before delivery, and if they are not conducting TT immunization from the beginning of pregnancy onwards, then they did not utilize the service.

**Knowledge** is everything that is known by pregnant women related to TT immunization.

**The role of health workers** is the view of pregnant women regarding the services provided by health workers.

**Husband's support** is a form of husband's attention and concern for pregnant women in getting TT immunization.

**Parity** is the number of living children born to a mother.

### 5. Study Instruments

The instrument in this study was questionnaire were divided into several sections including to measure the utilization of TT immunization services for pregnant women, knowledge, the role of officers, husband support and parity.

### 6. Data Analysis

Data analysis used univariate and bivariate analysis by using statistical tests with the support of SPSS 16.0.

## RESULTS

### 1. Sample Characteristic

Table 1 showed the distribution of subjects based on knowledge, role of health workers, husband's support, parity and utilization of tetanus toxoid (TT) immunization services in the working area of the Oepoi community health center in 2022.

**Table 1. Characteristics of research subjects.**

Characteristics	Categories	Frequency (n)	Percentage (%)
<b>Knowledge</b>	Good	28	60.9
	Poor	18	39.1
<b>The Role of Health Workers</b>	Good	15	32.6
	Poor	31	67.4
<b>Husband's Support</b>	Supporting	23	50.0
	Not Supporting	23	50.0
<b>Parity</b>	Primipara	24	52.2
	Multipara	22	47.8
<b>Utilization of TT Immunization</b>	Utilized	26	56.5
	Not Utilized	20	43.5

Table 1 showed that most of the subjects had good knowledge (60.9%), the role of health workers was not good (67.4%), the type of parity was primipara (52.2%), utilized TT immunization services (56.5%). While the distribution of respondents based on husband's support received the same

amount, namely 50% for both supporting and not supporting.

### 2. Bivariate Analysis

Table 2 showed the result of the relationship between knowledge, role of health workers, husband support, parity, and the utilization of tetanus toxoid (TT) among pregnant women using Chi-square.

**Table 2. The Relationship between knowledge, role of health workers, husband support, parity, and utilization of tetanus toxoid (TT)**

Variables	Category	Utilized of TT Immunization				OR	CI 95%	P
		Utilized		No-utilized				
		n	%	n	%			
<b>Knowledge</b>	Good	24	92.3	4	20.0	48.00	7.84 to 293.71	<0.001
	Poor	2	7.7	16	80.0			
<b>The Role of Health Workers</b>	Good	14	53.8	1	5.0	22.16	2.57 to 190.99	<0.001
	Poor	12	46.2	19	95.0			
<b>Husband support</b>	Supporting	19	73.1	4	20.0	10.85	2.68 to 43.89	<0.001
	Not-Supporting	7	26.9	16	80.0			
<b>Parity</b>	Primipara	10	38.5	14	70.0	3.73	1.08 to 12.90	0.033
	Multipara	16	61.5	6	30.0			

The result of Chi-square analysis based on table 2 showed that there is a relationship between knowledge (OR= 48.00; 95%CI= 7.84 to 293.71; p<0.001), the role of health workers (OR= 22.16; 95%CI= 2.57 to 190.99; p<0.001) husband’s support (OR= 10.85; 95%CI= 2.68 to 43.89; p<0.001), parity (OR= 3.73; 95%CI= 1.08 to 12.90; p= 0.033) and the utilization of the TT immunization service in the Oepoi Community Health Center working area.

## DISCUSSION

### 1. Knowledge

The results showed that there was a relationship between knowledge and the utilization of TT immunization services for pregnant women. This study shows that most pregnant women with good knowledge are more likely to use TT immunization services than those with poor knowledge. Good knowledge will directly provide awareness to pregnant women to do something that has benefits for themselves and others such as the baby to be born. For this reason, the better the knowledge of pregnant women, the more pregnant women who take advantage of TT immunization.

Knowledge possessed by the mother is

a determinant in utilizing TT immunization. According to the researchers, the lack of knowledge was due to not optimal information about TT immunization provided by health workers so that the understanding obtained by mothers was still limited. Pregnant women who have poor knowledge tend to refuse in receiving TT immunization compared to mothers who have good knowledge, due to a lack of understanding about the benefits of TT immunization and the consequences if they are not receiving immunization.

The results of this study are in line with previous research which showed that there is a relationship between pregnant women's knowledge of tetanus toxoid immunization, because the more knowledge obtained about providing TT immunization information, the greater the chance of mother to carry out TT immunization because of the importance of TT immunization for pregnant women.

### 2. The Role of Health Workers

The results showed that there was a relationship between the role of health workers and the use of tetanus toxoid immunization services in the Oepoi Community Health Center Work Area. Based on the results of

the analysis, it was shown that the majority of pregnant women who thought that the role of health workers was not good did not take advantage of TT immunization, compared to those who did. This is because the actions given by health workers to pregnant women to invite or remind respondents to carry out TT immunization are uneven and complete.

The role of health workers who work in the field is very important in the success of the program to achieve the target of implementing TT immunization for pregnant women, especially their role as educators and implementers. Azwar's theory states that a person wants to use health services because the officers' services are considered satisfactory because it is seen from service satisfaction and the completeness of health service facilities. The role of health workers is an important factor in the completeness of TT immunization, if a mother gets good service from health workers, this will automatically affect or change the behavior of pregnant women to conduct TT immunization.

The results of this study are in line with previous research which stated that there was a relationship between the role of health workers and the status of pregnant women's TT immunization (Nuraira et al., 2022). This happened because some subjects did not receive TT immunization due to a lack of information and education on the importance of tetanus toxoid (TT) immunization and awareness among pregnant women.

### **3. Husband Supports**

The results showed that there was a relationship between husband's support and utilization of TT immunization services. Based on the results of the analysis, the majority of pregnant women who did not receive support from their husbands did not take advantage of TT immunization services,

compared to those who did. This is because the husband has not been able to provide support in the form of informational, emotional, instrumental and appreciation support. The tendency is that high support from the husband will make the mother to be more obedient in implementing TT immunization and vice versa.

This research is in line with previous research which showed a relationship between husband's support and completeness of TT immunization. Husbands who do not support due to husband's work factors will have little time to pay attention to his wife's TT immunization schedule. According to researchers, apart from busy husbands, the majority of husbands do not understand about TT immunization, therefore, they never recommend pregnant women to get TT immunization.

### **4. Parity**

The results showed that there was a relationship between parity and the utilization of tetanus toxoid immunization services in the Oepoi Health Center Work Area. Based on the results of the analysis, it was shown that the majority of primiparous pregnant women did not take advantage of TT immunization services compared to multiparous pregnant women.

The results showed that mothers who gave birth to two-four children had the knowledge and experience to take advantage of TT immunization services, whereas mothers who gave birth to one child did not know about TT immunization and had low motivation to take advantage of TT immunization services. This is because mothers who are primiparous or with the lowest parity do not receive information about TT immunization at all, some are late for prenatal checks so that there are respondents who do not carry out tetanus toxoid immunization at local health care facilities and have an understanding of the risks invol-



ved. This study is in line with previous research which showed that parity had a significant relationship with tetanus toxoid immunization.

This is because primiparous mothers tend to start pregnancy care later than the group of multiparous mothers who gain experience from previous pregnancies to better prepare themselves for the next pregnancy, so that they are safer in the delivery process. Mothers with more than one children have more experience than mothers with one child.

Health workers must provide complete information regarding TT immunization to mothers when carrying out pregnancy checks or through outreach so that mothers' knowledge can increase. Community Health Centers are expected to be able to take advantage of various health promotion media for mothers and husbands or families.

#### **AUTHOR CONTRIBUTION**

Chintya Leba Leo role in this research activity is as the head of the researcher. Masrida Sinaga, R. Pasifikus Christa Wijaya, Marylin Susanti Junias the role of the second, third, and fourth researchers are to direct and guide the first researcher.

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#### **CONFLICT OF INTEREST**

There is no conflict of interest in this study.

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