

# Determinant of TT (Tetanus Toxoid) Immunization Compliance on Pregnant Women in the Tawaeli Health Center Working Area

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**Abstract:** The 2015 Inter-Census Population Survey showed Maternal Mortality Rate (MMR) of Indonesia 305/100,000KH, in Central Sulawesi Province AKI in 2017 was as many as 89 cases/100.000KH, of which 3.3% was caused by Tetanus Neonatorum infection by *Clostridium tetani* bacteria. The coverage of Tetanus Toxoid (TT) immunization in Palu City during 2018 was 87.6% which was conducted in the Tawaeli Health Center. TT immunization coverage in 2015 was (51.4%), in 2016 amounted to (41.96%), in 2017 amounting to (39.5%), this is one indication of the potential for maternal mortality due to infection is still a threat. The objective of the research was to determine the determinants of compliance with TT immunization for pregnant women and their impact on maternal and infant mortality in the Tawaeli Community Health Center work area. The study used quantitative with a cross sectional approach. The population was pregnant women and postpartum mothers who were in the area of the Tawaeli Community Health Center with 74 people taken by accidental sampling. The results of the study showed that mothers who obeyed complete TT immunization were 33 respondents (44.6%) and those who did not comply with complete TT immunization were 41 respondents (55.4%). The chi-square test results showed that the level of knowledge ( $p = 0.017$ ), attitude ( $p = 0,000$ ), family support for compliance with TT immunization of pregnant women ( $p = 0.016$ ). In conclusion, the determinants of adherence to TT immunization for pregnant women are knowledge, attitudes and family support. We recommend that midwives and cadres do IEC regarding the importance of TT immunization for pregnancy and increase coverage by swiping TT immunization into the homes of pregnant women.

**Keywords:** Determinants, Compliance with Maternal, TT Immunization

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## 1. Introduction

One of the causes of maternal death and infant mortality is tetanus infection caused by *Clostridium tetani* bacteria as a result of unsafe/sterile labor or from wounds obtained by pregnant women before giving birth. *Clostridium Tetani* enters through open wounds and produces poisons that attack the central nervous system [1].

The 2015 Intercensal Population Survey showed that Indonesian Maternal Mortality Rate (MMR) 305/100,000KH, in Central Sulawesi Province MMR in 2017 as many as 89 cases/100.000KH, of which 3.3% is Tetanus Neonatorum Infection caused by *Clostridium* bacteria *tetani*, Tetanus

neonatorum infection can be prevented through TT immunization both before (WUS) and during the mother's pregnancy.

The target set by the Indonesian government regarding the Tetanus Toksoid immunization program during pregnancy is set at a minimum of 90% for the national level and 85% for the district/city. Based on data from the Indonesian Ministry of Health 2016, in Indonesia the number of pregnant women who did immunization up to TT2 + was only 61.01% of the number of pregnant women in Indonesia. Immunization until TT2 + in Central Sulawesi Province in 2017 as many as 56.72% of pregnant women who are immunized [2].

Based on data from the Palu City Health Office in 2016

Tetanus Toxoid immunization coverage was 73.37%, in 2017 Tetanus Toxoid immunization coverage was 82.72, during January-November 2018, the number of pregnant women who had TT immunization was 6,936 out of 7,915 pregnant women (87.6%) [3].

Data obtained at Tawaeli Health Center, TT immunization coverage in 2015 amounted to (51.4%), in 2016 amounted to (41.96%), in 2017 amounted to (39.5%). When compared with other health center that have TT2 + immunization coverage that is above 50% and even reaches 100%. The purpose of this study was to determine the determinants of adherence to TT immunization for pregnant women and their impact on maternal and infant mortality in the Tawaeli Community Health Center work area.

## 2. Method

This research is an analytical observational study with a cross sectional study design conducted by comparing the independent variables with the dependent variable at the same time. The dependent variable is compliance with TT immunization of pregnant women, while the independent variables are knowledge, attitudes and family support. The population in this study were 301 pregnant women in the third trimester and postpartum mothers in the Tawaeli Community Health Center work area in 2018. Sampling was done by accidental sampling method. Thus, the sample in the study amounted to 74 respondents who were met during a visit to the Tawaeli health center. Analysis using Chi-square test with 95% confidence level (p-value 0.05).

## 3. Result

Distribution of respondents' characteristics according to age, family history, husband's support, unwanted pregnancy,

fertility and monetary need can be seen in Table 1.

**Table 1.** Characteristics of Respondents.

Variable	Number of frequencies	%
Age		
18-27	43	58,1
28-37	26	35,1
>37	5	6,8
Education		
Elementary school	4	5,4
Junior high school	10	13,5
High school	49	66,2
Higher Education	11	14,9
Occupation		
Government employees	4	5,4
Private employees	3	4,1
entrepreneur	6	8,1
Housewife	61	82,54
Knowledge		
Less	35	47,3
Well	39	52,7
Attitude		
Negative	41	55,4
Positive	33	44,6
Family support		
Does not support	28	37,8
Support	46	62,2
Immunization Completeness		
Not comply	41	55,4
Comply	33	44,6

Most of the respondents were 18-27 years old (58.1%), high school education (66.2%), and non-working status (IRT) which was 82.54%. Respondents who were well-informed (52.7%), were negative towards immunization (55.4%) and received family support 62.2%, and most pregnant women did not adhere to immunization ie 41 people (55.4%).

**Table 2.** Analysis of Determinants of Compliance with TT Immunization of pregnant women in the Tawaeli Community Health Center in Palu City of 2018.

Variable	Immunization Compliance				Total		p value
	Not Comply		Comply		n	%	
	n	%	N	%			
Knowledge							
Less	25	71,4	10	28,6	35	100	017
Well	16	41,0	23	59,0	39	100	
Attitude							
Negative	36	85,7	6	14,3	42	100	000
Positive	5	15,6	27	84,4	32	100	
Husband Support							
Does not support	21	75	7	25	28	100	016
Support	20	34,5	26	56,5	46	100	

Table 2 shows that there is a relationship between knowledge with TT immunization compliance of pregnant women (p = 0.017), pregnant women who have good knowledge are more obedient in conducting TT immunization than those with less knowledge. There is a relationship between the attitude of respondents to compliance with TT immunization of pregnant women (p = 0,000), pregnant women with a positive attitude are more obedient to TT immunization. There is a relationship between

husband's support and adherence to TT immunization of pregnant women (p = 0.016). Pregnant women who have husband's support are more obedient to TT immunization than those who do not have husband's support.

## 4. Discussion

Determinants of Compliance with TT Immunization on Pregnant Women.

The results of the analysis show that knowledge is one of the factors that influence the compliance of TT immunization in pregnant women in the working area of the Tawaeli Health Center. Respondents with good knowledge are more obedient to TT immunization. Knowledge is one of the predatory factors that determine a person's health behavior. This knowledge can be obtained through formal education, counseling and information from the mass media. In addition, knowledge is also obtained based on certain experiences that have been experienced [4].

The results of the above research can be seen that the higher the level of knowledge of a mother, the higher her awareness to complete TT immunization during her pregnancy. Knowing the importance of TT immunization during pregnancy is an obligation of every mother. However, not a few mothers do not know the benefits of TT immunization and its impact on mothers and babies if they do not get complete TT immunization during their pregnancy. Compliance is the end result of behavior change which starts from increasing knowledge, after a person has good knowledge about something it will change the person's attitude towards the knowledge they have and then someone will change their behavior and in changing their behavior someone first assesses the benefits that will be obtained [4]. This is also supported by opinions which states that the higher the mother's knowledge, the easier the mother receives information so the better her knowledge [5].

Knowledge possessed by someone will change the person from not knowing to know so that understanding and consequently, has a positive impact on the mother's behavior. The results of this study are in line with which states that the knowledge of pregnant women about immunization is very necessary because with high knowledge about immunization, they are expected to fully immunize tetanus toxoid immunization [6]. Immunization is very important given to pregnant women because of complete immunization then the woman has a strong immune system and is not susceptible to diseases, especially tetanus [7]. The results of this study are also in line with the research conducted states that pregnant women with low knowledge do more incomplete TT immunizations compared to those with high knowledge [8].

Attitude is always related to an object, and this attitude tends to give value or meaning to the object observed or seen, people who have negative feelings towards an object or situation tend to not give value or meaning to the object or situation. The factors that influence attitudes include internal factors, namely the factors contained in the person concerned such as selectivity and personal experience and external factors that are factors outside the human or environment. The environment provides the first social influence for a person, where one can learn good things as well as bad things depending on the nature of the group. In the environment a person will gain experience that will influence the way of thinking [9].

The results of this study are in line with the research there was a relationship between compliance attitudes which participate in tetanus toxoid immunization with a value of

0.027 <0.05. This can be interpreted that there is a significant relationship between attitudes and adherence to tetanus toxoid immunization for pregnant women. A positive attitude is very necessary for pregnant women in TT immunization because with a positive attitude, pregnant women will receive information about TT immunization and will try to get benefit from the TT immunization, so that pregnant women want to complete TT immunization [10]. This research is also in line, obtained p value of 0.001 <0.05, it can be concluded that  $H_0$  is rejected, this means there is a relationship between the attitude of pregnant women to compliance with tetanus toxoid immunization [11].

Mothers with positive attitudes assume that immunization is a good thing for mothers and fetuses, so they will encourage mothers to do TT immunization completely. Attitudes related to the behavior of mothers in implementing TT immunization indicate that mothers who have received information about TT immunization will think and respond and try to benefit from TT immunization, so that the mother finally wants to carry out TT immunization completely [12]. A positive attitude towards TT immunization will make the mother's behavior to get benefits from TT immunization [13]. The result from the analysis of attitudinal variables with TT immunization compliance of pregnant women who did not adhere to immunization was equal to (55.4%), of which six respondents had a positive attitude. When visiting the posyandu (Integrated Health Post) mothers are encouraged to come back to the Health Center to get TT immunization, but sometimes there is a work that needs to be done so that they cannot go to the Health Center, and also the distance of their homes to the Health Center is quite far. In addition, going to the posyandu in the Health Center must go up-stairs and queue long enough so that pregnant women with conditions that are nauseous, dizzy, tight and weak feel lazy to go to the Health Center.

The above is supported by the research showing the results that most pregnant women who have a positive attitude obey Tetanus Toksoid immunization. The mother who is positive is willing to get information about TT immunization so that she responds well to the implementation of TT immunization as an effort to prevent tetanus infection. This also occurs due to several external factors such as environmental and social cultural factors. Two of these factors even though the mother has sufficient knowledge but because the mother's attitude is positive the tetanus toxoid immunization status is complete [14].

Husband's support is a real form of care and responsibility for men. There are 4 aspects from the family support (husband), namely emotional support, information, instrumental and appreciation. One of the factors that influence antenatal care (ANC), stated that one of which is tetanus toxoid immunization is husband's support. Support of a good husband can provide good motivation to the mother in checking ANC pregnancy [15].

The results of this study are in line with the results of which found a significant relationship between family support and TT immunization status of pregnant women in which the

hypothesis test results were  $p = 0.024$ , so  $H_0$  was rejected. In addition to being a supporting factor, husband's support is also a protective factor for mothers with low knowledge of TT immunization and low education levels [16].

This is also in line with research that shows that family support is related to immunization compliance [17]. The results of the study showed that respondents who obediently carried out immunizations and stated that they received enough family support from the total respondents, namely 20 respondents or (43.5%). The results of this study prove that most pregnant women who have received complete immunization get enough support from the family in conducting TT immunization. Pregnant women in the working area of the Tawaeli health center with good family support are quite a lot.

This is proven by many pregnant women who feel cared for by the family by simply asking the condition of their health and providing important information about pregnancy from family members. By giving this information can help with difficulties and provide guidance that can make pregnant women able to deal with problems more easily [18]. Family support, especially support obtained from the husband will cause peace of mind and feelings of pleasure for the wife. Family is the first environment known by individuals in the process of socialization. Family support is assistance that can be given to other families in the form of goods, services, information and advice, which makes recipients of support feel loved, valued and peaceful. Information assistance is communication about opinions or relevant facts about current difficulties, such as advice and information about the health of pregnant women which can make them more able to deal with problems easily [19].

This informative aspect consists of giving advice, direction and other information needed by pregnant women in carrying out their lives [20]. The implementation of TT immunization is not only influenced by family support. Because sometimes pregnant women who have received full support from the family are still lazy to carry out TT immunization. If there is no support from the family, the interest of pregnant women to carry out TT immunization will be reduced so that pregnant women do not want to do TT immunization. Family support intended, for example, exposes pregnant women to check their pregnancies, provides support for pregnant women to diligently check their pregnancies [21]. Some other factors that may have stronger relationships are education for pregnant women, knowledge, easy health care accommodation, the influence of the social environment, knowledge of pregnant women, and the age of pregnant women [22].

## 5. Conclusion

Based on the results of this study, it can be concluded that knowledge, attitudes, and family support are determinants of adherence to TT immunization in pregnant women in the Tawaeli Community Health Center work area. Compliance with TT immunization can reduce maternal mortality (MMR)

and infant mortality (IMR), by reducing cases of deaths due to tetanus neonatorum infection. It is hoped that health workers will be more active in conducting IEC about TT immunization so that knowledge of WUS and pregnant mothers will be better so that the benefits of immunization can become a driving force for more immunization, besides immunization officers are more proactive in swiping to pregnant mothers' houses to increase TT immunization coverage for pregnant women.

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