

Description of Factors Affecting The Completeness of Tetanus Toxoid Immunization in Trimester III Pregnant Women at Poskesdes Village Bumi Serdang Tungkal Ilir Districts Banyuasin Regency in 2021

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ABSTRACT

Tetanus neonatorum and maternal tetanus can increase maternal mortality and infant mortality rates. One of the prevention of tetanus is to immunize pregnant women with tetanus toxoid. Pregnant women who do not do TT immunization because they have several factors that affect the completeness of tetanus toxoid immunization, namely age, education, occupation, parity and maternal knowledge which can have an impact on increasing the incidence of neonatal tetanus. This study aims to describe the factors that influence the completeness of tetanus toxoid immunization in third trimester pregnant women. This research method is descriptive quantitative using cross sectional. The population in this study were all third trimester pregnant women in Poskesdes Desa Bumi Serdang, Tungkal Ilir Subdistrict, Banyuasin Regency in 2021. The sample consisted of 11 respondents using nonprobability sampling technique, namely the total population. The results showed that the factors that influenced the completeness of tetanus toxoid immunization for pregnant women were age and knowledge of the mother. Of the 11 respondents, most of the mothers had mature age, namely 9 people (81.8%) and most of them had high knowledge, namely 8 people (72.7%). The more pregnant women have a mature age and have high knowledge, it will affect their behavior and attitudes in choosing and making the right choices in health services.

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1. Introduction

Tetanus is a neurological disorder characterized by increased muscle tone and spasm caused by *Clostridium Tetani*. Tetanus is more often experienced by newborns or Tetanus Neonatorum which is caused by cutting the umbilical cord without sterile tools.¹

Tetanus neonatorum is tetanus in infants aged 3 to 28 days after birth and maternal tetanus is tetanus in pregnancy within 6 weeks of delivery. When tetanus occurs the mortality rate is very high, especially when proper health care is not available. Currently, maternal and neonatal tetanus deaths can easily be prevented by delivery and hygienic umbilical cord management, and/or by immunizing the mother with the tetanus vaccine.

Based on WHO data (2010), the incidence of neonatal tetanus infection in 2009 reached 13% of all babies born in the world. One of the causes of infant death is tetanus, with a mortality rate of nearly 30%. The proportion of neonatal tetanus infection will be greater if the baby does not have natural immunity against tetanus that is passed on through the mother.

Based on the results of monthly maternal and child health reports (LB3-KIA) in Indonesia, the coverage of TT immunization is still far from the expected target with the incidence of many pregnant women who do not complete TT immunization, of course this can affect the high incidence of neonatal tetanus, an infectious disease that is prevalent and the death rate is still high. Tetanus disease occurs all over the world, especially in tropical areas.²

Based on data from the field of disease prevention and control at the South Sumatra provincial health office in 2017, there were 11 cases of neonatal tetanus in infants aged <28 days with 5 deaths (CFR: 45.5%). Of the 11 cases that were reported, 55% had checked with health workers during pregnancy, 82% had never received TT immunization, 64% of deliveries were assisted by non-health workers (traditional healers, parents/family), 36% of the umbilical cord was cut using nuptibles and 100 % of umbilical cord care still uses ingredients (turmeric, cobwebs, animal manure, salt, gambier sap), and some use betadine (9%). From these cases, it is known that the risk factors for neonatal tetanus cases can occur during childbirth and postpartum where umbilical cord care is generally carried out at home by the family, so it is often influenced by customs. While in 2018, cases of *tetanus neonatorum* decreased with the distribution of tetanus neonatorum cases,

there were 4 cases, namely 1 in Palembang city, 1 in Ogan Komering Ulu district, 1 in Muara Enim city, and 1 in Banyuasin with 1 death percentage (25%).

Based on data from the Palembang city health office in 2012, the coverage of immunization TT in pregnant women who received immunization TT1 increased by 95.92% and received immunization TT2 decreased by 92.43%. While in 2013, the coverage of immunization TT in pregnant women who received immunization TT1 increased by 99.1% and TT2 also increased by 97.5%.

The immunization program is one of the important programs in the health sector. This immunization program aims to reduce morbidity, disability and mortality from diseases that can be prevented by immunization. One of the important immunization programs recommended by the government is the immunization TT (Tetanus Toxoid), which is a process to build immunity as an effort to prevent tetanus infection. Immunization TT can be given to pregnant women from I to the III trimester.

The Ministry of Health has implemented various programs to accelerate the process of reducing maternal mortality and infant mortality, one of which is the prevention of neonatal tetanus by administering tetanus toxoid (TT) immunization with the right dose and time interval. Immunization TT is given to pregnant women with the aim of providing active immunity against tetanus, so the antibodies that are formed in the body are transferred to the fetus where the antibodies will protect the baby against tetanus during the birth process and for several months thereafter. The government targets that in 2015 the immunization of pregnant women for TT 1 is 95% and for TT 2 is 90%.

Immunization TT should be given before 8 months of pregnancy to get complete immunization. Immunization TT for pregnant women is given twice at a dose of 0.5 cc by injection intramuscularly/subcutaneously. The first TT immunization can be given since it is known to be pregnant, which is usually given at the first ANC visit at a health care facility. The second immunization TT is given 4 weeks after the first TT injection. Complete immunization TT is given for mothers and babies to prevent infection in the mother, while for infants it is given to prevent *tetanus neonatorum* infection in the umbilical cord. The micro-impact of the lack of complete immunization TT coverage will increase the incidence of neonatal tetanus and the macro impact increases the infant mortality rate.³

Achievement of tetanus toxoid immunization coverage can be influenced by several factors, including the distance to health services, employment, and support from husbands in immunizing tetanus toxoid. Besides that, it can also be influenced by education, age, awareness, experience of mothers who have received tetanus toxoid immunization during pregnancy and the knowledge of pregnant women in carrying out tetanus toxoid immunization. The lack of knowledge of pregnant women in immunizing tetanus toxoid can result in less knowledge of pregnant women about tetanus which can harm both the mother and the fetus.

According to preliminary data at Poskesdes, Bumi Serdang Village, Tungkal Ilir District, Banyuasin Regency. Based on data from January 2021, there were 9 pregnant women who did ANC, 6 pregnant women who did complete TT immunization and 3 pregnant women who did not complete TT immunization. This shows that the complete TT immunization coverage is still low. After identification, the obstacles in carrying out immunization TT include age, education, occupation, parity, maternal knowledge.

2. Methods

The research used descriptive quantitative method using cross sectional.⁴

The population in this study were all trimester III pregnant women in Poskesdes Village Bumi Serdang, Tungkal Ilir districts, Banyuasin Regency in 2021.

The sample consisted of 11 respondents using nonprobability sampling technique, namely the total population. The research was conducted on March 8-10, 2021. The research instruments were questionnaire sheets and check list.

3. Results And Analysis

3.1 Result

a. Factors affecting the completeness of tetanus toxoid immunization in pregnant women

Factors that influence the completeness of tetanus toxoid immunization for pregnant women are age, education, occupation, parity and knowledge. The results can be seen in the table below.

Table 1.

Frequency distribution of factors affecting the completeness of tetanus toxoid immunization in trimester III pregnant women in Poskesdes, Bumi Serdang Village, Tungkallir Districts, Banyuasin Regency in 2021.

No	Factors Influencing TT Immunization	Category	Frequency	Percentage (%)
1	Age	< 20 years old	1	9,1
		21-35 years old	9	81,8
		≥ 36 years old	1	9,1
2	Education	No School	0	0
		Elementary School	8	72,7
		Junior high school	2	18,2
		Senior high school	1	9,1
		Univercity	0	0
3	Occupation	Having job	0	0
		No job	11	100
4	Parity	Primipara	5	45,5
		Multipara	6	54,5
		Grandemultipara	0	0
5	Knowledge	High	8	72,7
		Low	3	27,3

Source: Primary data for the 2021 study

Based on the age factor, it is known that from 11 respondents, 1 (9.1%) pregnant women who have <20 years of age, 9 (81.8%) pregnant women, 9 (81.8%) pregnant women who have age 21-35 years 1 person (9.1%) has an age of ≥ 35 years.

Based on educational factors, it is known that from 11 respondents, pregnant women who do not attend school, 8 pregnant women (72.7%), 2 pregnant women (18.2%), 1 (9.1%) pregnant women with high school education, and pregnant women who do not have tertiary education.

Based on occupational factors, it is known that from 11 respondents, 11 pregnant women did not work (100%).

Based on the parity factor, it is known that from 11 respondents, 5 pregnant women with primiparous parity (45.5%), 6 people with multiparity parity (54.5%) and no pregnant women with grandemultipara parity.

Based on the knowledge factor, it is known that from 11 respondents, there were 8 pregnant women (72.7%) with high knowledge, and 3 people with low knowledge (27.3%).

b. Completeness of Tetanus Toxoid Immunization

Completeness of Tetanus Toxoid Immunization is grouped into two categories, namely complete if pregnant women get TT 1 and TT 2 immunizations and incomplete, namely if pregnant women do not get TT 1 or TT 2. The results can be seen in the table below.

Table 2.

Frequency distribution based on completeness of Tetanus Toxoid Immunization in Trimester III Pregnant Women in Poskesdes, Bumi Serdang Village, Tungkallir Districts, Banyuasin Regency in 2021

No	TT immunization	Frequency	Percentage (%)
1	Complete	9	81,8
2	Incomplete	2	18,2
	Total	11	100

Source: Primary data for the 2021 study

\ Based on the table above, it can be seen from 11 respondents, there were 9 pregnant women who had complete TT immunization (81.8%) while 18.2% (18.2%) pregnant women who had incomplete TT immunization.

3.2 Analysis

a. Age factor

Based on the age factor, it is known that from 11 respondents, 1 (9.1%) pregnant women who have <20 years of age, 9 (81.8%) pregnant women, 9 (81.8%) pregnant women who have age 21-35 years 1 person (9.1%) has an age of ≥ 35 years.

According to Huclok (1998), the more old you are, the level of maturity and strength of a person will be more mature in thinking and working. In terms of public trust, someone is more mature and trusted than someone who is not yet mature.

Adult age is more mature in facing pregnancy. "Increasing age will automatically affect individual growth and development. As you get older, the processes of mental development will get better, but at certain ages this process of mental development increases unlike when you were in your teens. Even at a very advanced age, the process of development is practically non-existent. So the increasing age of a person can have an effect on the increase in the knowledge he/she gets, but at certain ages the ability to remember a knowledge will decrease.⁵

Maternal age is related to the implementation of Tetanus Toxoid immunization. Pregnant women who are of adulthood are better able to understand and can make their own decisions regarding the continuity of their health. So in this study, it was found that most of the pregnant women had a mature age so that it was very easy to receive the information obtained and had an effect on the acceptance of toxoid immunization health services.

b. Educational factor

Based on educational factors, it is known that from 11 respondents, there were no pregnant women who did not go to school, 8 pregnant women who had primary school education (72.7%), 2 pregnant women who attended junior high school (18.2%), 1 pregnant women with high school education (9.1%), and pregnant women who do not have tertiary education.

Education can influence a person, including one's behavior in life patterns, especially in motivating them to participate in development. In general, the higher a person's education, the easier it is to receive information.

Friedman (2005), states that education means guidance given by a person for the development of others towards certain ideals. The higher a person's education level, the easier it is to obtain, receive information, so that the mother's ability to think more rationally. Mothers who have higher education will think more rationally in determining the best in receiving health services.⁶

A person's education is a very determining factor in the implementation of tetanus toxoid immunization, especially in making decisions and receiving information from others.

According to the researchers, the level of education of a person greatly influences the process of receiving information about health services received, so in the process of receiving information about tetanus toxoid immunization, it can be received and understood well so that many pregnant women are willing to do complete tetanus toxoid immunization.

c. Job factor

Based on occupational factors, it is known that from 11 respondents, 11 pregnant women did not work (100%).

According to Wawan (2010), it is said that working for mothers will have an influence on family life. Meanwhile, work is generally a time-consuming activity.

Work is a symbol of a person's status in society. A job is a bridge to get money in order to meet the necessities of life and to get the desired health service place.

According to researchers, work is an indicator of family social status that can be used as a benchmark to determine success, the use of health services, especially antenatal examinations, including tetanus toxoid immunization services.

In this study, it was found that none of the pregnant women worked because all pregnant women became housewives. The job is the husband's job, where the average livelihood in the village is as a farmer or plant his own rubber and oil palm. So all pregnant women have a lot of time at home and actively carry out pregnancy checks at the village health post either

independently or according to the posyandu schedule to carry out pregnancy checks and tetanus toxoid immunization.

d. Parity factor

Based on the parity factor, it is known that from 11 respondents, 5 pregnant women with primiparous parity (45.5%), 6 people with multiparity parity (54.5%) and no pregnant women with grandemultipara parity.

Parity is the number of pregnancies that result in a fetus that is able to live outside the womb. Parity is very influential on a person's acceptance of knowledge where the more experience a mother has, the easier acceptance. Experience is an important approach in solving problems.⁷

Parity can be divided into primiparous, multiparous and grandemultipara.⁸

According to Lestari (2012), it is known that most pregnant women are multiparous parity who know the benefits of tetanus toxoid immunization related to previous experiences that have experienced pregnancy and childbirth, while mothers with primiparous parity who do not know the importance of immunizing tetanus toxoid so that some respondents do not comply with tetanus toxoid immunization to the nearest health service place and their wrong perception of the risks that occur after receiving tetanus toxoid immunization.⁹

According to researchers, parity greatly affects awareness of immunizing against tetanus toxoid. A person's acceptance of knowledge or information is easier, it is influenced by the more experiences he has had. In this study, many pregnant women had multiparous parity, where the mothers had received information about tetanus toxoid immunization from their previous pregnancy experiences, so they were willing to immunize tetanus toxoid.

e. Knowledge factor

Based on the knowledge factor, it is known that from 11 respondents, there were 8 pregnant women (72.7%) with high knowledge, and 3 people with low knowledge (27.3%).

Knowledge is the result of "knowing" and this occurs after people have sensed a certain object. Sensing of objects occurs through the five human senses, namely sight, hearing, smell, taste and touch by themselves. The time from sensing to producing knowledge is very much influenced by the intensity of the perceptual attention to the object. Most of human knowledge is obtained through the eyes and ears.¹⁰

Knowledge itself is influenced by factors of formal education. Knowledge is closely related to education, where it is expected that with higher education, the person will have broader knowledge. However, it needs to be emphasized, it does not mean that someone with low education is absolutely low-knowledgeable. This is because increasing knowledge is not absolutely obtained from formal education, but can be obtained through non-formal education such as counseling, brochures, friends.

According to Maulida (2012), knowledge is not only obtained from the results of formal education, but is obtained from counseling, friends, brochures and the more knowledge about giving tetanus toxoid immunization, the more likely it is to carry out tetanus toxoid immunization for pregnant women. Mother's level of knowledge is one of the factors that influence the administration of tetanus toxoid immunization where the level of knowledge will affect individual behavior. The more the mother's knowledge about the importance of health, the higher the level of awareness of the mother to participate in posyandu or immunization activities.¹¹

According to researchers, knowledge greatly influences the attitude of pregnant women to immunize, because the higher the mother's knowledge, the higher the level of awareness of the mother to immunize. Mother's level of knowledge is one of the factors that influence the administration of tetanus toxoid immunization where the level of knowledge will affect individual behavior.

f. Completeness of tetanus toxoid immunization

Based on the results of the study, of the 11 respondents, 9 were pregnant women who had complete TT immunization (81.8%) while 18.2% of pregnant women who had incomplete TT immunization were pregnant.

Tetanus toxoid (TT) immunization is a process to build immunity as an effort to prevent tetanus infection.

Immunization of TT (tetanus toxoid) aims to protect newborns from the possibility of seizures due to infection of the umbilical cord (tetanus neonatorum). TT immunization must be given

through the mother, because the fetus has not been able to form its own immunity. In Indonesia, TT immunization is recommended to start with couples who are going to get married or pregnant women.

Tetanus toxoid immunization is the provision of immunity against tetanus to pregnant women and their babies. The process of entering immunity into the body includes having suffered from a disease, so that the body builds immunity against disease.¹²

Immunization has been proven as one of the efforts in public health which is very important as a tool in preventing disease, so in various countries immunization is the main program of a country and is one of the main disease prevention programs in the world. Tetanus toxoid immunization in pregnant women is given 2 times with a dose of 0.5 injected intramuscularly / subcutaneously. The first tetanus toxoid immunization can be given since the mother is known to be pregnant, which is usually given at the time of her first antenatal care (ANC) visit to a health care facility at the age of 3-7 months of pregnancy. The second tetanus toxoid immunization visit was given within 4 weeks of the first injection.

Tetanus toxoid immunization injection to prevent tetanus in a person and eliminate certain diseases in a group of people (population) and even eliminate certain diseases from the world.¹³

According to the researchers, the results of the study found that most pregnant women in the Poskesdes Desa Bumi Serdang sub-district, tungkal ilir district, Banyuasin district have received complete tetanus toxoid immunization, namely TT1 and TT2 and there are still pregnant women who do not get complete tetanus toxoid immunization. There are still pregnant women who have not received complete immunization based on the results of direct observation at the time of the study, which is influenced by the knowledge factor where there is still an assumption that if they have received a tetanus toxoid immunization injection in the past pregnancy, they do not need to do immunization anymore. In this study, the factors of mature age, occupation and high knowledge greatly influence the attitudes and behavior of pregnant women in carrying out tetanus toxoid immunization.

4. Conclusions

The description of the research results shows that many factors influence the completeness of tetanus toxoid immunization for pregnant women at Poskesdes Village Bumi Serdang Districts Tungkal ilir Banyuasin Regency in 2021, is the age and knowledge of the mother. Of the 11 respondents, most of the mothers had a mature age, namely 9 people (81.8%) and most of them had high knowledge, namely 8 people (72.7%). So the more pregnant women have a mature age and have high knowledge, it will affect the behavior and attitudes of mothers in choosing and making the right choices in health services.

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