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Correlation of Maternal Knowledge and Attitudes Towards Serology Screening Management for Pregnant Women at the Wisata Hospital of the Indonesia Timur University

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ABSTRACT

Every pregnant woman will face the risk of complications that can threaten her life. The purpose of this study is to determine the relationship of knowledge and attitudes towards the implementation of serological screening (HIV, Syphilis, Hepatitis B, and Rubella) in pregnant women at the Tourism Hospital, University of East Indonesia. This type of research is quantitative analytical research with a cross-sectional approach. The population in this study consisted of all pregnant women registered at the University of East Indonesia Tourism Hospital from January to June 2022 with a total of 42 respondents. Using purposive sampling techniques, 42 samples were taken. Data were collected with questionnaires and observation sheets. Data were analyzed by univariate and bivariate analysis with chi-square test. The results showed that 23 respondents (54.8%) had poor knowledge, 24 respondents (57.1%) had negative attitudes, and 24 respondents (57.1%) had abnormal serological screening results. Based on the results of statistical analysis, it was found that there was a relationship between knowledge (p-value 0.001 <0.05) and attitudes (p-value 0.003 <0.05) towards the implementation of serological screening in pregnant women. Therefore, women can know and always do serological screening regularly and according to gestational age.

Keywords:

Women's Knowledge, Attitudes and Implementation, Serology Screening

1. INTRODUCTION

Pregnancy is the intrauterine growth and development of the fetus beginning from conception and ending at the beginning of labor. The growth and development of pregnancy determines the level of health of the pregnant woman and the outcome of her pregnancy. During pregnancy, there are changes in the body systems that cause an uncomfortable response for the expectant mother. Every pregnant woman will face the risk of complications that can threaten her life. This period requires special attention to determine the subsequent quality of life. To deal with these risks, one of the preparations that needs to be done is early detection**[1]**. Early detection of high-risk pregnancy and childbirth can reduce maternal mortality and monitor the state of the fetus. Through early detection, abnormalities that may arise can be identified quickly and can be addressed immediately before the side effects that lead to maternal death. The maternal mortality rate describes the number of women who died from causes related to pregnancy or treatment disorders during pregnancy, childbirth, and in the postpartum period (42 days after the postpartum period) per 100,000 live births **[2]**.

The maternal mortality rate in the world is still high, especially in developing countries. Every day about 800 women die from complications of pregnancy or childbirth in the world. Globally in 2018, there were an estimated 315,000 maternal deaths during and after pregnancy and childbirth **[3]**. The maternal mortality rate in Indonesia is still high at 412 per 100,000 live births in 2017. The number represents an increase from 2016 which was 328 per 100,000 live births. This data is a challenge for Indonesia to achieve the 2017 MDGs target of 100 per 100,000 live

births **[4]**.

The cause of maternal death in Indonesia is dominated by bleeding, hypertension in pregnancy, and infection. The cause of maternal death in West Kalimantan consists of direct causes, namely bleeding 39.74%, hypertension 23.84%, infection 4.64%, and 31.79% others. Indirect causes are culture, public education, knowledge, environment, adequacy of health facilities, human resources, etc. [4] [5] Various efforts to reduce MMR have been carried out by the government, namely overcoming direct, indirect, and risk factors [1]. This effort can provide maximum results if it is supported by an increase in serology examination services. In clinical microbiology laboratories, the cultivation of microorganisms from patient specimens is still a method used for infectious diseases. In 2015 serological techniques such as Oudin and Ouchterlony immunodiffusion were developed. Then after that, there was the development of other methods based on immunological concepts, such as complement fixation, which were introduced as methods that can determine a person's immune response to infection. Examinations such as radioimmunoassay, enzyme assay, and hybridoma techniques increase the role of serological tests for infectious diseases [6] [7].

Specific immune responses are divided into only 2 categories: cell-mediated responses and antibody-mediated responses. Cell-mediated immune responses are carried on by T lymphocytes. T lymphocytes proliferate and differentiate into a variety of effector cells, including T cell helpers and cytotoxic T cells. Cytotoxic T cells specifically attack and kill microorganisms in the host cell that are damaged or due to pathogenic infections. Helper T cells produce cytokines, cytokines stimulate the maturation of B cells so that B cells produce antibodies capable of killing the infecting organism [6].

The immune response mediated by antibodies is a specific protein produced by B lymphocytes. Antibodies are secreted into blood or spleen fluid (sometimes in other body fluids) by B lymphocyte cells, or remain attached to the surface of lymphocyte cells or other cells. Since the cells involved in this category of immune responses are in the blood circulation, this type of immunity is also called humoral immunity [8] [9] For the purpose of determining antibodies in patients that have been produced during the process of fighting infection, the patient's serum (or sometimes plasma) is examined to identify the presence of antibodies. Studying the diagnosis of a disease based on the determination of serum antibody levels is called serology.

Genetically, humans have the ability to directly produce specific antibodies against almost any type of antigen, both through contact during life and by recognizing the body as a strange object. Antigens can be physical structures or chemicals that are produced and released by pathogens such as exotoxins. Pathogens can contain or produce many different antigens that can be recognized by the host as foreign bodies, so infection by disease agents can lead to the production of different antibodies. In addition, some antigens have properties that cannot be recognized by the host cell if the antigen does not go through a process of physical change, for example before pathogenic bacteria are digested by polymorphonuclear leukocytes, some antigens on the cell surface cannot be recognized by the immune system, once the bacteria break, it is these antigens that will be recognized so that antibodies are formed to fight those antigens. Based on this reason the patient can produce different antibodies at the time of infection by one type of disease. The immune response will mature with repeated exposure, and the antibodies formed will be more specific and more strongly bound [10].

Based on data from the University of East Indonesia Tourism Hospital di Makassar, the number of HIV cases in pregnant women in 2017 was 8 cases, 6 rubella cases, 6 syphilis cases, and 9 hepatitis B cases, while in 2018 the incidence of HIV in pregnant women was 11 cases, 4 rubella cases, 9 syphilis cases, and 11 cases of hepatitis B. In all the cases above, 70% are due to lack of knowledge about the importance of serological examination of pregnant women **[11]**. Based on the description above, researchers are interested in investigating the "Relationship of Knowledge and Attitudes towards the Implementation of Serological Screening (HIV, Syphilis, Hepatitis B and Rubella) in Pregnant Women at the Wisata Hospital of the Indonesia Timur University

2. METHODS

This research uses quantitative methods based on the philosophy of positivism, used to examine certain populations and samples, data collection using research instruments, quantitative data analysis with the aim of testing hypotheses January to June 2022, at the Wisata Hospital of the Indonesia Timur University. The design in this study used analytics, using a cross section. The population in this study was all pregnant women who visited the University of East Indonesia Tourism Hospital registered from January-June 20 22**, as** many as 42 respondents. In this study, the sampling technique used was purposive. The data collection instruments in this study are questionnaire sheets and observation sheets. They must know the knowledge and attitudes of the respondents. Researchers use questionnaire sheets to understand knowledge variables consisting of 10 questions with true and false answer choices, and for attitude variables consisting of 10 statements with answer choices strongly agree, agree, doubt, simply disagree, and disagree. For the variables of serological screening (HIV, Syphilis, Hepatitis B, and Rubella) researchers used observation sheets, where each type of examination used different techniques and methods. **[12]**

3. RESULT AND DISCUSSION

3.1. Characteristics of Respondents

Most of the respondents had less knowledge, namely 23 respondents (54.8%). Knowledge or cognitive domains are a very important aspect in shaping one's actions (open behavior) [13]. Based on the results of research conducted by researchers, it is known that most respondents have poor knowledge. This happens due to many influencing factors; One is the lack of health information, especially about the importance of serological screening tests.

Table 1. Characteristics of Respondents

Respondent' Age	Frequency	Percentage (%)
< 20 years	0	0
20 – 35 years old	40	95.2
>35 years old	2	4.8
Total	42	100.0
Respondent Education	**Frequency**	**Percentage (%)**
Junior High School	15	35.7
High School School	22	52.4
Diploma 3	1	2.4
Bachelor	4	9.5
Total	42	100.0
Work from Reply	**Frequency**	**Percentage (%)**
Worker	3	7.1
Housewives	17	40.5
PNS	5	11.9
Private Company Workers	9	21.4
Businessman	8	19.0
Total	42	100.0

The majority of respondents had a negative attitude of 24 respondents (57.1%). Attitudes are general evaluations that human beings make of themselves, others, objects, or problems. An attitude is a reaction or response of a person who is still closed to a stimulus and a view or feeling accompanied by a tendency to act according to the object. An attitude is an impulse to perform or not perform a certain behavior so that the attitude is not only an internal psychological state of the individual but also an attitude that is more than just a process of individual consciousness. This means that this process occurs subjectively and is unique to each individual. Based on the results of research conducted by researchers, the conclusion is that most respondents have a negative attitude; This is due to the lack of experience the women gained and the lack of support husbands have for their wives to take serological screening tests**[14].[15]**

Table 2. Univariate Analysis

Knowledge	Frequency	Percentage (%)
Good	19	45.2
Less	23	54.8
Total	42	100.0
Attitude	**Frequency**	**Percentage (%)**
Negative	24	57.1
Positive	18	42.9
Total	42	100.0

3.2. Serology Screening Examination

The majority of serological screening results of abnormal respondents amounted to 24 respondents (57.1%). Where there were 8 respondents (33.3%) with HIV, 4 respondents (16.6%) had Syphilis, 10 respondents (41.6%) had Hepatitis B, and 2 respondents had Rubella (8.3%). To determine antibodies in patients that have been produced during the process of fighting infection, the patient's serum (or sometimes plasma) is examined for antibodies. Studying the diagnosis of a disease based on the determination of serum antibody levels is called serology**[16]**. Genetically humans have the ability to directly produce specific antibodies to almost any type of antigen, both through contact during life and by recognizing unknown objects. Antigens can be physical structures or chemicals that are produced and released by pathogens such as exotoxins. Pathogens can contain or produce many different antigens that can be recognized by the host as foreign bodies, so infection by disease agents can lead to the production of different antibodies. In addition, some antigens have properties that cannot be recognized by the host cell if the antigen does not go through a process of physical change**[17]**. For example, before pathogenic bacteria are digested by polymorphonuclear leukocytes, some antigens on the cell surface cannot be recognized by the immune system, once the bacteria break, these antigens will be recognized so that antibodies are formed to fight antigens. Based on this reason the patient can produce different antibodies at the time of infection by one type of disease.**[18]** The immune response will mature with repeated exposure, and the antibodies formed will be more specific and more strongly bound. Based on the results of studies conducted by researchers, it is known that most respondents have abnormal serological screening results; This is due to the lack of knowledge and attitudes of the women about the perception of serological screening examinations so that it greatly affects the results of the examination itself.

Table 3. Serology Screening Examination

Serology Screening Examination	Frequency	Percentage (%)
Usual	18	42.9
Odd	24	57.1
Total	42	100.0

There were 19 respondents who had good knowledge where 14 respondents (73.7%) had normal test results and 5 respondents (26.3%) had abnormal examination results. Meanwhile, there were 23 respondents who had poor knowledge, namely 4 respondents (17.4%) normal and 19 respondents (82.6%) abnormal. Based on the results of statistical tests, the p-value is 0.001 or p-value <0.05 which means that there is a relationship between knowledge and the implementation of serological screening (HIV, Syphilis, Hepatitis B, and Rubella) in pregnant women at the University of East Indonesia Tourism Hospital in 20 22 with an OR value of 13,300. This could mean that respondents who have poor knowledge have a 13,300 times greater risk of producing abnormal examinations compared to those with good knowledge.

Table 4. Bivariate Analysis Serological Screening in Pregnant Women

Knowledge	Serological Screening				Sum		P-Value	OR
	Usual		Odd					95%
	n	%	n	%	n	%		
Good	14	73.7	5	26.3	19	100.0	0.001	13.00
Less	4	17.4	19	82.6	23	100.0		(3.012-58.719)
Total	18	42.9	24	57.1	42	100.0		
Attitude	Serological Screening				Sum		P-Value	OR
	Usual		Odd					95%
	n	%	n	%	n	%		
Negative	5	20.8	19	79.2	24	100.0	0.003	0.101
Positive	13	72.2	5	27.8	18	100.0		(0.024-0.421)
Total	18	42.8	24	57.1	42	100.0		

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Knowledge is the result of knowing, and this happens after people have sensed a certain object. Sensing occurs through the human senses, namely the senses of sight, hearing, smell, taste, and touch. By itself at the time of perceiving the process can generate knowledge that is strongly influenced by the intensity of attention and perception of the object. Most of the human knowledge is obtained through eyes and ears. Knowledge is an impression in the human mind as a result of the use of the five senses. A person's knowledge of an object has a different intensity or level. Knowledge levels include: Know, Comprehension, Application, Analysis, Synthesis, and Evaluation. If the respondent performs these 6 levels, normal serology screening results may be achieved.[19]

Based on the results of the research above, it can be seen that most of the respondents have less knowledge, this is because in the research results that represent education, the highest number of respondents are middle and high schools. Thus the risk of respondents lacking health information especially about the importance of serological screening examinations is high. In the results of the study, it is known that there is poor knowledge of respondents, but there are still abnormal serological screening results of respondents, this is due to the fact that respondents do not follow the mass media, so respondents do not get health information about serological screening, this can cause respondents' serology screening results to be abnormal. Statistical tests, the p-value is 0.003 or p-value <0.05 which means that there is a relationship between attitudes and the implementation of serological screening (HIV, syphilis, hepatitis B, and rubella)[20] [21] in pregnant women at the University of East Indonesia Tourism Hospital in 2022 with an OR value of 0.101 which means that respondents who have a negative attitude have a risk of 0.101 times greater, resulting in abnormal examinations than respondents who have a negative attitude Having a negative attitude has a risk of 0.101 times greater so that an abnormal examination occurs compared to those with a positive attitude. The results of this study are in line with the theory according to [22] [23]that attitudes are a general evaluation carried out by humans towards themselves, others, objects, or problems. An attitude is a reaction or response of a person who is still closed to a stimulus and a view or feeling accompanied by a tendency to act according to the object. An attitude is an impulse to perform or not perform a certain behavior so that the attitude is not merely the internal psychological state of the individual but an attitude that is more than a process of individual consciousness. This means that this process occurs subjectively and is unique to each individual [24].

The characteristics of attitudes according to [25] include not being carried from birth, being capricious, not standing alone, something specific, relating to motivational aspects and emotional aspects, natural manners that distinguish one's attitude and abilities or knowledge. If the respondent has the above attitudinal characteristics, it is likely that serological screening could be normal. Based on the results of the study above, it can be seen that the majority of respondents have a negative attitude, but there are still respondents who have normal serological screening results, this is because respondents report multiparous pregnancy so that respondents already have experience in applying serology screening.

4. CONCLUSION

There is a relationship between knowledge and attitudes towards the implementation of serological screening (HIV, syphilis, Hepatitis B, and Rubella) in pregnant women at the Wisata Hospital Indonesia Timur University.

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