

ISSN 2597- 6052DOI: <https://doi.org/10.56338/mppki.v7i5.5176>**MPPKI****Media Publikasi Promosi Kesehatan Indonesia**
*The Indonesian Journal of Health Promotion***Review Articles****Open Access****Factors Associated with Utilization Triple Elimination Examination by Pregnant Women In Indonesia: Scoping Review****Yulfiana^{1*}, Chriswardani Suryawati², Ayun Sriatmi³**¹Faculty of Public Health, Universitas Diponegoro | email Yulfianaakk@gmail.com²Faculty of Public Health, Universitas Diponegoro | chriswardani.suryawati@live.undip.ac.id³Faculty of Public Health, Universitas Diponegoro | sriatmi.ayun@gmail.com* Corresponding Author: Yulfianaakk@gmail.com**ABSTRACT**

Introduction: The prevalence of HIV, Syphilis and Hepatitis B infections among pregnant women in Indonesia has reached 0.3%, 1.7% and 2.5%, respectively. The risk of transmission from mother to child respectively 20%-45%, 69-80% and more than 90%. Transmission of these three diseases from pregnant women to babies during pregnancy, childbirth and breastfeeding cause disabilities in children and even death. The government stipulates that all pregnant women are required to HIV/AIDS, Syphilis and Hepatitis B screening (Triple elimination examination) at integrated antenatal services. The target set is that early detection of HIV, syphilis and hepatitis B in pregnant women must reach 100% through examinations at First Level Health Facilities and Referral Health Facilities by 2022. However, in 2021 the achievements were only 50.8%, 16.4% and 60.3% for HIV, syphilis and hepatitis B.

Objective: This study aims to determine the factors associated with the utilization of triple elimination examinations by pregnant women.

Method: This study uses a scoping review method. Article collected from online databases including scopus, science direct, proquest, EBSCO, PubMed and Google Scholar with keywords "Related" AND "Pregnant Women" OR "Pregnancy" AND "Triple Elimination Examination". Article selection conducted based on PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

Result: The results showed 8 articles that met the inclusion criteria. The research showed factors that associated with the utilization of the triple elimination examination are sources of information, the role of health workers, use of classes for pregnant women, family support, and age of pregnant women.

Conclusion: This study concluded that the utilization of triple elimination examinations by pregnant women associated with external factors around pregnant women.

Keywords: Triple Elimination; Pregnant Women; HIV; Syphilis; Hepatitis B

INTRODUCTION

MMR and IMR in Indonesia are classified as the highest in Southeast Asia, reaching 189 deaths per 100,000 Live Births for IMR and 16.85 deaths per 1,000 Live Births for IMR (1). Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR) are indicators that show the level of social welfare in a country (2). Maternal mortality rate (MMR) is the ratio of maternal deaths during pregnancy, childbirth and postpartum per 100.000 live births (3). Meanwhile, the Infant Mortality Rate (IMR) is reviewed based on deaths of children aged between 0 and 12 months per 1.000 Live Births (KH) (4). Based on Maternal Perinatal Death Notification (MPDN) data dated 21 September 2021, the top three causes of maternal death are Eclampsia (37.1%), Bleeding (27.3%), Infection (10.4%), while the top three causes of infant death namely LBW (29.21%), Asphyxia (27.44%), Infection (5.4%) (5).

Diseases experienced by pregnant women can increase morbidity and even death rates for mothers and babies. HIV/AIDS, Syphilis, and Hepatitis B are diseases that can be transmitted from pregnant women to babies (6). This disease can infect children in the womb during pregnancy (7). Apart from that, the disease can also infect during the birthing process and breastfeeding, which can cause disabilities that have a negative impact on the survival and quality of the child and can even lead to death (8). However, the incidence of HIV/AIDS, HIV/AIDS and Hepatitis B in pregnant women in Indonesia is relatively high (9). The prevalence of HIV, Syphilis and Hepatitis B infection in pregnant women is 0.3%, 1.7% and 2.5% respectively (8). The risk of transmission from mother to child for HIV/AIDS, Syphilis and Hepatitis B is 20%-45%, 69-80% and more than 90% respectively (10).

HIV is the causative agent of acquired immunodeficiency syndrome (AIDS) (9). The Indonesian Ministry of Health estimates that every year there are 9,000 HIV/AIDS positive pregnant women in Indonesia who give birth to babies, this means that around 3,000 HIV/AIDS positive babies will be born every year (11). Babies who suffer from HIV will be born with very low immunity (6). This can have an impact on reducing the quality of life and even death. Hepatitis is a condition of inflammation of liver tissue caused by infection or non-infection (9). Hepatitis B which is transmitted from pregnant women to babies will cause low birth weight (LBW), prematurity, congenital abnormalities, and even death (6). Syphilis is a sexually transmitted infection that can attack all organs of the body (7). The World Health Organization (WHO) estimates that globally, there are 1.5 million pregnancies with syphilis and 50% of those that are not treated result in congenital syphilis. Several cases of miscarriage, stillbirth or neonatal death immediately after delivery are related to syphilis infection during pregnancy (12). It is known that up to 40% of babies are stillborn or die after birth due to syphilis (6).

Reducing MMR and IMR is one of the main targets of sustainable development goals (SDGs). The goals of the SDGs are more focused on maternal mortality during pregnancy and childbirth. Based on the SDGs targets, MMR and IMR are targeted at 70 per 100,000 live births and 12 per 1,000 live births respectively (13). As an effort to reduce MMR and IMR, the Government stipulates that all pregnant women who undergo pregnancy checks are required to undergo HIV/AIDS, Syphilis and Hepatitis B screening (Triple elimination examination) at integrated antenatal services. Triple elimination is an effort to break the chain of transmission of HIV, syphilis and Hepatitis B from mother to child which is carried out simultaneously because the transmission of HIV, Syphilis and Hepatitis B is relatively the same, namely transmission through sexual intercourse, blood contamination and vertically from mother to child (8). This screening is carried out with a blood laboratory test at the pregnant woman's first antenatal visit and is carried out at least once during pregnancy (14). Through this examination, it is hoped that abnormalities that may arise will be immediately identified and can be treated before they have a bad impact that can lead to death (9).

Triple elimination is a health program that aims to achieve and maintain the elimination of HIV/AIDS, Hepatitis B and Syphilis from pregnant women to babies through a coordinated approach. Efforts to prevent HIV/AIDS, Hepatitis B and Syphilis can be started when the baby is still in the womb. This really depends on the efforts of the pregnant mother herself to prevent the transmission of these three diseases to the baby in her womb. The government is trying to encourage all pregnant women to know their HIV/AIDS, Hepatitis B and Syphilis status by carrying out pregnancy checks with the triple elimination examination program at integrated ANC (10).

The government has set a target that by 2022, early detection of HIV, syphilis and hepatitis B in pregnant women must reach 100% through examinations at First Level Health Facilities (FKTP) and Advanced Level Referral Health Facilities (FKRTL). However, in 2021 pregnant women who were tested for HIV, syphilis and hepatitis B only reached 50.8%, 16.4% and 60.3% respectively (14). This shows that the triple elimination program has not been running well, as indicated by the low number of examinations carried out by pregnant women.

Based on that, the researcher is interested to conduct research to determine the factors related to the use of the Triple Elimination Program by pregnant women as a first step to optimizing the program. Researchers believe that by conducting this research, factors can be identified to support the optimization of this program and can be used by the government and related stakeholders to achieve successful program.

METHOD

This research uses a scoping review method. Scoping review is a method used to identify literature comprehensively through various sources with various research methods and is related to the research topic. The steps of this research conducted through (1) identifying research questions, (2) determining keywords, (3) determining inclusion and exclusion criteria, (4) articles collection and studies selection, (5) article and data mapping.

Stage 1: Identifying Research Questions

At this stage, the researcher identifies research questions based on the PICO framework (population, intervention/exposure, comparison and outcome). The population) is Pregnant women, the exposure is associated factor, the comparison is no comparison and the outcome is triple elimination examination utilization. Based on determined population, exposure, comparison and outcome above the question in this research is "what factors are associated with the utilization of Triple Elimination examination in pregnant women?"

Stage 2: Determining keywords

Keywords are determined based on PICO, so the keywords used are "Related" AND "Pregnant Women" OR "Pregnancy" AND "Triple Elimination Examination".

Stage 3: Determining inclusion and exclusion criteria

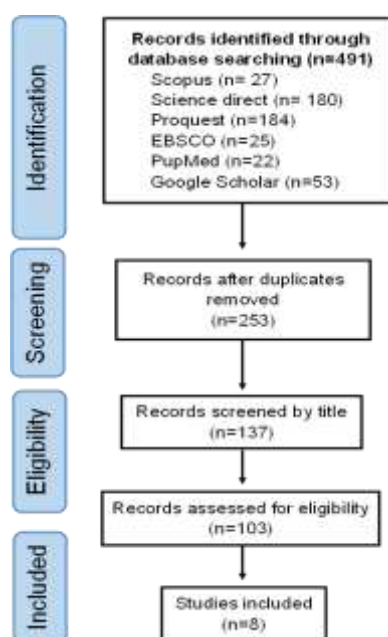
The inclusion and exclusion criteria determined in the table 1.

Table 1. Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
1. Articles published in English and Indonesia	1. Not published in a journal
2. Articles published in 2019- 2023 (last 5 years).	2. The result was not factors related to the Triple Elimination Examination in pregnant women
3. Original Research	3. The article is a review of existing research
4. Qualitative and quantitative design	4. Full text not available
5. Free full-text available	
6. The research subjects were pregnant women	
7. Articles state the research results in the form of factors related to the Triple Elimination Examination in pregnant women	

Stage 4: Articles collection and studies selection

Article searches were carried out through online databases, namely Science Direct, Scopus, Proquest and Google Scholar. Article selection was carried out based on PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline. The result of this stage provided in picture 1.



Picture 1. PRISMA Flowchart

The results of article collection based on keywords in online databases including scopus, science direct, proquest, EBSCO, PubMed and Google Scholar were 491 articles. After duplicates were removed, 253 articles obtained. After that, researchers filtered articles based on title and obtained 137 articles with relevant titles. Then, the researchers identified articles based on the predetermined inclusion criteria and obtained 103 articles, but 95 articles did not match the research objectives, and leaving 8 articles remaining. These 8 articles fulfilled the requirements for extraction and article quality assessment which will then be included in the charting data. The Critical Appraisal Tool used in this scoping review is Appraisal tool for Cross-Sectional Studies (AXIS). This tool evaluates the quality of the included studies via 20 items with a two-point Likert, including yes (score of 1) and no (score of 0). This tool assesses report quality (7 items), study design quality (7 items), and the possible introduction of biases (6 items). Finally, AXIS rates the quality of studies at three levels: high (70 to 100%), fair (60 to 69.9%), and low (0 to 59.9%). Two researchers separately extracted information and evaluated the quality of the studies. The articles included in the study are listed in the table 2.

Table 2. Article selected

Author and year	Title	Method	Sample Size	Associated factor	Code
Dinar Inayah, 2022	Determinan Pemeriksaan Triple Eliminasi Ibu Hamil di Desa Sukaresmi Kecamatan Megamendung Tahun 2021	Cross sectional.	30 pregnant women	Utilization of classes for pregnant women, sources of information, and the role of village midwives	A1
Rohani et al, 2022	Husband Support and The Role of Health Officers with Triple Elimination Examination in Pregnant Women	cross sectional	146 pregnant women in trimester II dan III	Husband's support and the role of officers	A2
Vebriyani, et al, 2022	Hubungan Persepsi, Sumber Informasi dan Perilaku Ibu Hamil terhadap Pemeriksaan Tripel Eliminasi di PMB Neti Vebriyani Tahun 2022	cross sectional	50 pregnant women	Source of information from health workers	A3
Septiyani et al, 2022	Faktor-Faktor yang Berhubungan dengan Pemeriksaan Triple Eliminasi pada Ibu Hamil di Puskesmas Cibeber Kota Cimahi Tahun 2022	cross sectional	86 pregnant women	Knowledge, motivation, information exposure, and perceived barriers to triple elimination	A4
Sumarni and 2023	Hubungan Sumber Informasi, Dukungan Keluarga dan Dukungan Tenaga Kesehatan dengan Minat Ibu Hamil Melakukan Pemeriksaan Triple Eliminasi di Wilayah Kerja Puskesmas Cikeusal Kabupaten Serang Banten	cross sectional	63 pregnant women	Source of information, family support and health workers	A5
Wiyayanti and Sutarno, 2023	Determinan Terlaksananya Pemeriksaan Triple Eliminasi Pada Ibu Hamil di Wilayah Puskesmas Wanajaya Cibitung Bekasi Periode Januari-Juni Tahun 2023	cross sectional	165 pregnant women	Maternal occupation and age of pregnant woman	A6
Kurnia, 2023	Persepsi, Dukungan Keluarga, dan Peran Petugas Kesehatan dan Hubungannya dengan Kepatuhan Ibu Hamil Trimester III dalam Pemeriksaan Triple Eliminasi (Hiv, Sifilis, dan Hepatitis B) di Klinik Pratama Sumarno Medika 2022	cross sectional	88 pregnant women in trimester III	Perceptions, family support, and the role of health workers	A7
Adethia et al, 2022	The Relationship Behavior of Pregnant Women To The Utilization of Triple Elimination	cross sectional	35 pregnant women	Women's behavior	A8

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Stage 5: Article and data mapping

After the articles were selected, the information in the articles was summarized regarding factors related to the utilization of triple elimination examinations by pregnant women.

RESULTS

8 articles were identified based on PRISMA based as listed in the table 2. These 8 articles discuss factors related to the utilization of triple elimination examination by pregnant women based on primary research conducted by researchers. 6 articles in Indonesian and 2 articles in English published in 2022 and 2023. All articles are research conducted in various regions in Indonesia using cross-sectional methods. The selected articles have been evaluated using the Critical Appraisal Tool for Cross-Sectional Studies (AXIS) with the results as shown in table 3.

Table 3. Results of Critical Appraisal Cross Sectional Study

No	Question	A1	A2	A3	A4	A5	A6	A7	A8
Introduction									
1.	Were the aims/objectives of study clear?	+	+	+	+	+	+	+	+
Methods									
2.	Was the study design appropriate for the stated aim(s)?	+	+	+	+	+	+	+	+
3.	Was the sample size justified?	+	+	+	+	+	+	+	+
4.	Was the target/reference population clearly defined?	+	+	+	+	+	+	+	+
5.	Was the sample frame taken from an appropriate population base so that were representative of the target/reference population under investigation?	+	+	+	+	+	+	+	+
6.	Was the selection process likely to select subject/participant that were representative of the target/reference population under investigation?	+	+	+	+	+	+	+	+
7.	Were measures undertaken to address and categorise non-responders?	-	-	-	-	-	-	-	-
8.	Were the risk factor and outcome variable measured appropriate to the aims of the study?	+	+	+	+	+	+	+	+
9.	Were the risk factor and outcome variables measured correctly using instruments that had been trialled, piloted or published previously?	+	+	+	+	+	+	+	+
10.	It is clear what was used to determined statistival significance and/or precision estimates?	+	+	+	+	+	+	+	+
11.	Were the method sufficiently described to enable them to be repeated?	+	+	+	+	+	+	+	+
Result									
12.	Were the basic data adequately described?	+	+	+	+	+	+	+	+
13.	Does the response rate raise concerns about non-response bias?	-	-	-	-	-	-	-	-
14.	If appropriate, was information about non-responders described?	-	-	-	-	-	-	-	-
15.	Were the results internally consistent?	+	+	+	+	+	+	+	+
16.	Were the result presented for all the analyses described in the methods?	+	+	+	+	+	+	+	+
Discussion									
17.	Were the author's discussions and conclusions justified by the results?	+	+	+	+	+	+	+	+
18.	Were the limitation of the study described?	-	-	-	-	-	-	-	-
Other									
19.	Were there any funding cources of conflict of interest that may affect the authors' interpretation of the results?	-	-	-	-	-	-	-	-
20.	Was ethical approval or consent of participants attained?	+	+	+	+	+	+	+	+
TOTAL SCORE		85	85	85	85	85	85	85	85

After the articles were selected, the information in the articles was summarized regarding factors related to the utilization of triple elimination examinations by pregnant women as table 5.

Table 4. Mapping associated factors

Factor	Literature
Sources of information	A1, A3, A4, A5
The role of health workers	A1, A2, A5, A7
Use of classes for pregnant women	A1
Family support	A2, A4, A5, A7
Age	A6

Based on the mapping results in the table 5, there are several factors related to the utilization of triple elimination examinations by pregnant women, including sources of information, the role of health workers, use of classes for pregnant women, family support, and age of pregnant women.

DISCUSSION

Factor 1: Sources of Information

Information about triple elimination examination given to pregnant women to undergo blood tests in the laboratory during pregnancy. The more information received, the more knowledge gain, including knowledge about the triple elimination examination (15). Exposure to health information for individuals will encourage health behavior. Information support about how HIV, Syphilis, Hepatitis B is transmitted and its prevention is an important factor that supports the use of triple elimination examinations in pregnant women (16).

Information sources are media or channel tools to obtain information and to facilitate the reception of messages for the public or recipients of the messages (17). The source of information is very important because it relates to the level of knowledge which will influence a person's awareness in making health efforts (18). Sources of information encourage someone to act and make decisions and influence someone's attitude. Research about relationship between information sources, peer support and young women's attitudes towards breast self-examination behavior shows that there is a significant relationship between information sources and health behavior. Pregnant women who get information from sources they trust will easily accept the information they receive. Print media (newspapers, magazines), electronic media (television, radio, internet), and health worker activities such as training are possible sources of information. Information from health workers is good and clear information (19). The result of research about relationship between perceptions, sources of information and behavior of pregnant women on the triple elimination examination states that after obtaining information from health workers, especially doctors or midwives, it will be easier for pregnant women to immediately carry out triple elimination examinations. Pregnant women who obtain information from health workers, especially from midwives or doctors where they carry out pregnancy checks, will be more receptive to the information given (20).

Factor 2: Role of Health Workers

Health workers are a very important factor in accelerating health development, because all efforts made to fulfill customers' desires for services are carried out by service providers, namely health worker (21). Health workers play an important role in stopping the transmission of HIV, syphilis and hepatitis B from mother to baby (22). In the triple elimination program, health workers according to their competence and authority are expected to be able to stop the transmission of HIV, Syphilis and Hepatitis B from mother to child and reduce morbidity, disability and death rates due to HIV, Syphilis and Hepatitis B in mothers and children. This is aimed at achieving 0 elimination of HIV Syphilis and Hepatitis B by 2030 (23).

The role pattern of health workers greatly influences the compliance of pregnant women in the triple elimination examination (24). A good role in providing information and counseling regarding triple elimination can increase pregnant women's motivation to comply with the examination. The role of health workers, especially in the form of information support and providing motivation to the community to carry out voluntary triple elimination examinations, is an important factor that has an impact on the use of examinations by pregnant women (16). Health workers can not only provide interventions to pregnant women directly, but also through the environment around pregnant women.

The result of research about determinants of triple elimination examination of pregnant women in sukaresmi village, megamendung district in 2021 states that the educational approach by village midwives to the husbands of pregnant women by involving village heads and community leaders through social activities such as recitations and minilok which are held every quarter, can increase the role of husbands or families in providing support to pregnant

women such as, accompany, remind pregnant women to have their pregnancy checked, and ask for the results of their pregnancy check.

Factor 3 Use of classes for pregnant women

Classes for pregnant women is an activity to prepare pregnant women to carry out a normal and healthy pregnancy, to face a comfortable and safe birth (25). Pregnant women's classes have a role in increasing the standard of minimum ANC visits for pregnant women, especially in triple elimination examinations. Participating in classes for pregnant women can increase pregnant women's knowledge of the importance of triple elimination examinations in pregnancy and can recognize danger signs in pregnancy. Pregnant women's classes have an influence on knowledge of early detection of danger signs for pregnant women (26). In the pregnant women's class, midwives always explain to mothers how to carry out triple elimination examinations so that they can screen for HIV/AIDS, Syphilis, Hepatitis B to the community, especially pregnant women, so that the health condition of the mother and fetus is maintained and prevents early transmission of HIV/AIDS from mother to fetus (15).

Factor 4 Family support

High motivation in pregnant women will increase the scope of triple elimination examinations (19). The motivation that pregnant women have to carry out triple elimination examinations is influenced by external parties, namely family support. Husband and family support plays a very important role because he is the closest family member and can be trusted (16). Family support is assistance that is emotionally beneficial and provides a positive influence in the form of information, instrumental assistance, emotions and assessments provided by family members consisting of husband, parents, parents-in-law and other relatives. The pattern of family support is in the form of instrumental support, where the family is a source of concrete and practical help, as well as informational support, where the family functions as a disseminator (desiminator), and finally support in the form of emotional support. Families who support pregnant women in carrying out triple elimination examinations will increase the motivation of pregnant women to comply with triple elimination examinations, compared to pregnant women who receive less support from the family regarding carrying out triple elimination examinations (24).

Factor 5: Age

Age will greatly influence the ability to grasp so that the gained knowledge will be better. The older someone get, the more experience and knowledge a person will gain, thereby increasing mental and intellectual maturity. The result of research about determinants of implementing triple elimination examinations for pregnant women in the Wanajaya Cibitung Bekasi community health center area stated that there is a relationship between age and triple elimination examinations in pregnant women where younger people tend to quickly gain access to information and this affects the level of ability and maturity in thinking and receiving better information (27).

CONCLUSIONS

There are several factors associated the utilization of triple elimination examination by pregnant women in Indonesia, namely sources of information, the role of health workers, use of classes for pregnant women, family support, and age of pregnant women.

SUGGESTION

To achieve the determined target related to 0 transmission of HIV, syphilis and hepatitis B from pregnant women to baby, government need to optimalize the support of health worker, pregnant women's family as an external factor that significantly influence the utilization of triple elimination examination.

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