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Overview of Pregnant Women's Knowledge and Motivation in the Triple Elimination Examination at the Bintan District, Indonesia, 2023

Suharni Pintamas Sinaga[1]*, Defacto Firmawati Zega[1], Rini Febrianti[1], Nurbaiti Br. Singarimbun[1], Kasta Gurning[2]

[1]Departement of Midwifery, Sekolah Tinggi Ilmu Kesehatan Senior Medan, Medan-20141, Indonesia
[2]Departement of Pharmacy, Sekolah Tinggi Ilmu Kesehatan Senior Medan, Medan-20141, Indonesia

**Corresponding Author's Email: suharnisinaga26@gmail.com*

ABSTRACT

Introduction: Triple elimination (Human Immunodeficiency Virus (HIV), syphilis, and hepatitis B) is a very serious and life-threatening disease that can be transmitted vertically from mother to child during pregnancy. The aim of this research is to describe the knowledge and motivation of pregnant women in prenatal examinations in an effort to prevent vertical transmission of this dangerous disease from mother to baby during pregnancy. **Methods:** The research object was all pregnant women who came to have their pregnancies checked at the Sasah Tanjung Uban health center, North Bintan District, Bintan Regency, during 2023. The research method used the accident sampling technique, collected data, and continued with descriptive analysis. **Results:** The results showed that there were 4 pregnant women whose cases were reactive to hepatitis B out of a total of 179 pregnant women, while all of them were negative for HIV and syphilis. **Conclusion:** This indication also shows that the rate of hepatitis B sufferers is still high in the Sasah Tanjung Uban community health center service area, with a statistical mean of 0.0223±0.01108 and a significance value of 0.14822, so ongoing treatment and services are needed.

Keywords: Triple Elimination; HIV; Syphilis; Hepatitis B

INTRODUCTION

For many women, pregnancy and giving birth are viewed as normal and natural processes. However, some may face complications during these stages, posing risks to the health of both the mother and the baby (Khuan *et al.*, 2023). Triple elimination in pregnant women is an important part of preventing disease transmission from mother to child. Diseases that are prevented from being transmitted as intended in triple elimination are human immunodeficiency virus (HIV), syphilis, and hepatitis B (Rohani *et al.*, 2022). Successful prevention of triple elimination disease transmission in pregnant women must be supported by the knowledge and motivation of the pregnant mother herself (Galaupa, 2023). These three infectious diseases are very susceptible to occurring continuously from mother to child during pregnancy, which can cause disabilities, neonatal death, low birth weight, pneumonia, sepsis, neonatal conjunctivitis, congenital abnormalities, and even stillbirth (Rohani *et al*., 2022). The percentage of mother-to-child transmission during pregnancy of HIV is 20–45%, syphilis is 69–80%, and hepatitis B is more than 90% (Juliarti, 2023; Mardiyanti *et al.*, 2023). Apart from that, transmission can also be done through sexual intercourse, blood transfusions, and vertical transmission from mother to child during pregnancy (Octaviana, 2020; Prabawa *et al.*, 2023).

The World Health Organization (WHO) in 2017 established each criteria indicator in efforts to eliminate infectious diseases from mother to child; (1) HIV indicators, namely pregnant women are required to have their HIV status checked ≥95%, coverage of antiretroviral drugs (ARV) in HIV positive pregnant women is ≥95% (Women taking drugs to suppress virus transmission during childbirth), HIV infection case rate ≤50

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cases per 100,000 live births, and a case rate of HIV infection <5% in the breastfeeding population or <2% in the non-breastfeeding population; (2) syphilis indicators, namely coverage of syphilis status examination of pregnant women ≥95%, treatment of syphilis seropositive pregnant women ≥95%, and congenital syphilis case rate ≤50 cases per 100,000 live births; and (3) hepatitis B indicators, namely third dose hepatitis B virus vaccination (childhood vaccine coverage) ≥90%, birth dose hepatitis B virus vaccination coverage or other approaches to prevent mother-to-child transmission ≥90%, and HBsAg prevalence in children ≤ 0.1% (Visser *et al*., 2019; Azhali *et al.*, 2023). Transmission of this infectious disease from mother to child during pregnancy can be suppressed by carrying out interventions such as (1) early antenatal testing (repeated testing), (2) timely treatment and management during pregnancy and beyond, and (3) hepatitis B vaccine in babies, including timely administration of hepatitis B doses at birth or without passive immunization with hepatitis B immunoglobulin (HBIG) (Bell *et al*., 2023; Elgalib *et al.*, 2023). The principle of interventions that center on pregnant women and mothers-newborn babies in an integrated and coordinated manner can eliminate infectious diseases efficiently and sustainably (Zhang *et al.*, 2019).

The Indonesian Ministry of Health has issued Minister of Health Regulation No. 52 of 2017 concerning the elimination of transmission of human immunodeficiency virus (HIV), syphilis, and hepatitis B from mother to child. This program is an active step from the government in suppressing and eliminating the occurrence of vertical transmission of the three diseases from mother to baby (Vebriyani *et al.*, 2022). This program also continues to be implemented, and approaches, outreach, and information are needed to provide knowledge and motivation to all women, especially pregnant women. It is hoped that the formation of knowledge and motivation for pregnant women will form their own awareness to avoid and keep their offspring healthy and avoid transmission of the disease.

METHODOLOGY

Research Design

The research carried out is included in this type of analytical-descriptive research. Research was carried out on pregnant women in the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency, during 2022 (January–December 2022). The research sampling technique is accidental sampling, which means that the sample is all pregnant mothers who checked at the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency, Indonesia, during 2022. Management of the data obtained through the stages of editing, coding, tabulating, and continued descriptive analysis using SPSS version 17 with a significance level of 95% ($\alpha < 0.05$) to obtain a conclusion (Bell *et al*., 2023). Mothers who are pregnant and come for a check or examination are continued at the interview (Mihret *et al*., 2020).

Analysis and Interviews

Mothers who come for a pregnancy check-up are given a structured and direct interview. Data is obtained by using a form that has been prepared to be filled in by the patient and a biodata form that the patient already has in the form of a maternal and child health book, which is brought when carrying out the check-up at the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency. Analysis was carried out on the data obtained using SPPS version 17 with a significance level of 95% ($\alpha < 0.05$) (Sabilla *et al.*, 2020).

Ethical Consideration

The implementation of this research has received approval from the Health Research of Sari Mutiara University, Indonesia, with No. 1341/F/KEP/USM/XII/2021 on December 15, 2021.

RESULTS

Research data on the distribution of characteristics of pregnant women at the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency during 2022 (January–December 2022) is shown in Table 1.

Table 1: Distribution of Respondent Characteristics During January–December 2022

No.	Variable	Frequency	Percentage (%)	Triple Elimination Examination		
				HIV	Syphilis	HBsAg
1.	**Pregnant Mother's Age**					
	20 – 25 years	41	22.90	-	-	-
	26 – 30 years	59	32.96	-	-	1
	31 – 35 years	48	26.82	-	-	1
	36 – 40 years	31	17.32	-	-	2
2.	**Pregnancy Status**					
	G1 – G2	113	63.13	-	-	1
	G3 – G4	56	31.28	-	-	3
	G5 – G6	8	4.47	-	-	-
	G7 – G8	2	1.12	-	-	-
3.	**Gestational Age**					
	01 – 10 weeks	65	36.31	-	-	1
	11 – 20 weeks	60	33.52	-	-	1
	21 – 30 weeks	28	15.64	-	-	1
	31 – 40 weeks	26	14.53	-	-	1

Evidence: G shows the condition of the pregnant woman with the future child. The total number of pregnant women who underwent examinations for one year was 179 people.

The results of the descriptive analysis of data on the characteristics of pregnant women who came to have their pregnancies checked at the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency during 2022 (January–December 2022) are shown in Table 2.

Table 2: Descriptive Analysis of Respondents During January–December 2022

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
HIV	179	0.00000	0.00000	0.00000
Syphilis	179	0.00000	0.00000	0.00000
Hepatitis_B	179	0.00223	0.01108	0.14822
Valid N (listwise)	179			

The results of the descriptive analysis showed that of the total of 179 respondents who came for examination, there were 4 pregnant women who showed a reactive response to hepatitis B with a statistical mean of 0.0223 ± 0.01108 and a significance value of 0.14822. This value shows that if no treatment is taken to prevent vertical transmission of hepatitis B disease from mother to future baby in the Sasah Tanjung Bintan Community Health Center service area, North Bintan sub-district, Bintan district during 2022, it can be said to be high, as shown by the significance level value obtained exceeding 0.05.

The results of structured interviews conducted with 179 pregnant women who came for pregnancy check-ups at the Sasah Tanjung Bintan Community Health Center stated that they previously did not know what triple elimination was, they were afraid of this type of disease, and they were willing to carry it out because they received a visit. The midwives in the community health center area came to visit them and asked them to come and carry out routine checks for the health and safety of the mother and the unborn baby. Pregnant women realized that after receiving information or advice from health workers (midwives) about triple elimination (HIV, syphilis, and hepatitis B), they finally formed their own motivation and awareness to carry out examinations at the local health center.

DISCUSSION

Data from Table 1 shows that the age of pregnant women who come to have their pregnancies checked at the Sasah Tanjung Uban Health Center, North Bintan District, Bintan Regency during 2022

(January–December 2022) is in the range of 20–40 years. This age still meets the normal limits to avoid risks during pregnancy and childbirth. It is recommended that the maximum age of a mother during pregnancy be a maximum of 40 years, because women who experience pregnancy and give birth at an advanced age of more than 40 years have an increased risk of complications during pregnancy and childbirth, such as gestational diabetes and preeclampsia, compared to younger women (Sydsjö *et al.*, 2019). The highest age range for mothers who experienced pregnancy was 26–30 years, or 59 people. Mothers came for pregnancy checks based on the pregnancies of the child they were carrying, which was dominated by pregnancies with the first or second child with a total of 113 people (63.13%), followed by pregnancies with the third and/or fourth children with as many as 56 people (31.28%), fifth and fourth pregnancies, or sixth, as many as 4 people (4.47%), and the last pregnancy with the seventh and/or eighth child was 2 people (1.12%). Based on gestational age, mothers who come for pregnancy checks with the highest to lowest frequency are at 1–10 weeks (36.31%), 11–20 weeks (33.52%), 21–30 weeks (15.64%), and 31–40 weeks (14.53%). This condition supports checking from an early age about the condition of the pregnancy.

Based on the results of the data examination of triple elimination of pregnant women at the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency during 2022, there were four mothers who were indicated to be suffering from hepatitis B. These pregnant women were advised by the examining midwife to carry out further examinations with immunological examinations, including hepatitis B surface antibody (anti-HBs) examination, hepatitis B envelope antigen (HBeAg) examination, hepatitis B envelope antibody (anti-HBe) examination, and hepatitis B core (anti-HBc) antibody examination in the form of IgM anti-HBc, and one of them is the hepatitis B surface antigen (HBsAg) examination and still consult a gynecologist (Lestari *et al.*, 2022). The midwife who carries out the examination also provides counseling so that later the pregnant woman will give birth using the caesarean section method (Daraqthni & Aisyah, 2022). This is conveyed because this method is effective in carrying out deliveries for pregnant women suffering from hepatitis B, and for babies, it is recommended that after birth the baby be given a hepatitis B vaccine injection to suppress the proliferation of the hepatitis B virus in the baby's body. One example of a harmful virus is the hepatitis B virus, which reproduces in people and can pass straight to an unborn child through infected mothers in particular. Unvaccinated newborns have a >95% chance of contracting chronic hepatitis B (CHB), which is characterized by a positive blood surface antigen. The hepatitis B virus is spread from mother to child during pregnancy. Approximately 10% of infants born to highly viremic mothers develop CHB despite complete passive-active HBV immunoprophylaxis. Therefore, to lower the risk of MTCT, maternal treatment with a nucleos (t)ide analog (tenofovir disoproxil fumarate, lamivudine, or telbivudine) is advised during the third trimester of pregnancy. Typically, viral rebound typically happens when therapy is stopped, and it can also set off an immune-mediated hepatic (biochemical) onslaught during the postnatal mother's immune recovery (Joshi & Coffin, 2020).

The results of interviews conducted with pregnant women formed an understanding and positive thinking about the importance of carrying out pregnancy checks. For health workers, especially midwives who work in their area, they have an obligation to provide ongoing education for the health of mothers and future babies to avoid the spread of triple elimination disease. The information obtained included the risks posed to the mother and the unborn baby and how to suppress them so as not to experience transmission both horizontally and especially vertically from mother to future baby. The formation of clear knowledge of the causes and impacts causes pregnant mothers to come to the health center for health checks during pregnancy. This information is also important for the continued implementation of vaccination strategies to control and suppress the transmission of these three diseases, because only vaccines can be used to suppress and control the vertical transmission of these three diseases from mother to baby (WHO, 2019; Woodring *et al.*, 2019; Armini *et al.*, 2023). The main method for eradicating HBV infection worldwide is universal hepatitis B vaccination from birth and early childhood, which is also very successful in lowering the rate of new vertical infections. The greatest method of control, while antiviral medications are available to treat and prevent the problems of chronic hepatitis B, is to prevent HBV infection. The best strategy to prevent HBV infection is to screen for maternal HBsAg with or without HBeAg, then administer three to four doses of the HBV vaccination during infancy and hepatitis B immunoglobulin (HBIG) within twenty-four hours of birth. In regions where HBV

infection is rare or resources are scarce, providing the HBV vaccine to all infants three times without maternal screening can also have a good preventive effect (Chang, 2007; Eleje *et al*., 2023).

CONCLUSION

Pregnant women who came for pregnancy checks at the Sasah Tanjung Uban Community Health Center, North Bintan District, Bintan Regency during 2022 (January–December 2022) were a total of 179 people with an age range of 20–40 years. There were 4 cases of pregnant women who showed triple elimination reactivity to hepatitis B, while all of them showed non-reactivity for HIV and syphilis. Pregnant women in interviews showed that they have good knowledge and motivation in suppressing and preventing vertical transmission of HIV, syphilis, and hepatitis B from mother to baby, so that is the underlying reason to ensure that the condition of the fetus in the womb is good and free from infection from the disease virus from an early age. This information is also important as a further study for the government and all related parties in continuous handling, with an emphasis on ongoing socialization and prevention in order to avoid this disease.

Conflict of Interest

The authors declare that they have no conflict of interests.

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