



Influencing Factors Early Detection of Hepatitis B (HBsAg) Among Pregnant Women at Community Health Center Sukamerindu, Bengkulu City

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KEYWORDS

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ABSTRACT:

Introduction: Hepatitis B is infection the heart causes it around two million death every year worldwide (3.5% of number global mortality). Hepatitis B can cause cancer liver and complications cirrhosis. Indonesia is a country with level endemicity high, in 2023, figures death due to hepatitis B in Indonesia occupies order First of 10 countries in Southeast Asia with 2.14/100,000 people.

Objectives: To determine the relationship between education, knowledge, family support factors with early detection of hepatitis B (HBsAg) among pregnant women at Community Health Center Sukamerindu, Bengkulu City.

Methods: Research this with method quantitative cross sectional approach, sample as many as 60 mothers pregnant at the health center likes to miss with technique taking sample using accidental sampling. analysis used univariate and bivariate with the chi square test.

Results: Show that most of the respondents with a low level education of 35 (58,3%), most of the respondents have less knowledge 38 (63,3%), most of the respondents have families who do not support the early detection of hepatitis B (HBsAg) as much as 37 (61,7%), and most of the respondents do not early detection hepatitis B (HBsAg) as much as 34 (56,7%). Chi square test analysis (*Pearson chi square*) obtained *p-value* 0.001 ($p < 0.05$) there is a significant relationship between education with early detection of hepatitis B (HBsAg), chi square test (*pearson chi square*) obtained *p-value* 0.006 ($p < 0.05$) there si relationship significant knowledge with erly detection of hepatitis B (HBsAg), and chi square test (*pearson chi square*) obtained *p-value* 0.001 ($p < 0.05$) there is a significant relationship family support with early detection hepatitis B HBsAg.

Conclusions: Research findings can be used as means of health promotion to public in breaking the chain of transmission of hepatitis B in pregnant women to infants through early detection hepatitis B (HBsAg) examination in pregnant women. The study recommendation is erly detection hepatitis B (HBsAg) of all couples of childbearing age. To overcome the lack of interest of pregnant women in early detection HBsAg, it is necessary gto providea stimulus funds to pregnant women after do early detection HBsAg.

1. Introduction

Hepatitis B is infection liver caused by the hepatitis B virus and is problem main around the world. Disease heart chronic cause two million death every year (3.5%

of number global mortality). Hepatitis B can also occur cause cancer liver and complications cirrhosis. (Muñoz-Restrepo et al., 2024)



Indonesia is a country with level Hepatitis B endemicity is highest in Southeast Asia, with 410,000 deaths caused by the hepatitis B virus, which accounts for 78% of total deaths Because cancer liver and cirrhosis. in 2019, figures death due to hepatitis B in Indonesia occupies order First of 10 countries in Southeast Asia with (2.14 per 100,000 population) (WHO South Asia, 2023)

According to research data health In Indonesia , the prevalence of hepatitis B is 7.1% among Indonesians , this figure is increasing in this group age above 5 years Because horizontal transmission through contact blood and/ or connection risky sex. Besides that is, the prevalence of HBsAg in mothers pregnancy is very high tall ranged from 1.82% to 2.46%. (Ministry of Health Indonesia 2022).

Data reported by the Ministry of Health in Indonesia, as many as 7.1% or 18 million people in Indonesia infected with hepatitis B. From the number this is 50%, risky become chronic and can cause cancer liver, hepatitis B even become four reason death highest in Indonesia, with number death of amounting to 51,000 per year. (Ministry health Indonesia , 2022).

According to data from the Bengkulu City Health Service, there are enhancement case cases of hepatitis B in the mother pregnant from 2021 to 2023, the number are 11 cases in 2021, 18 cases in 2022, and 24 cases in 2023. Pregnant women who are positive for hepatitis B can cause problem bleeding or disturbance freezing blood, bleeding post childbirth, organ failure (liver), numbers death, neonatal death and disease prolonged liver, aside that as well as potency hepatitis B can be transmitted through mother to new baby birth, the most vulnerable population risky is children, with 70% to 90% chance of being infected from mothers who are hepatitis B e-antigen (HBeAg) positive through transmission vertical. In the area endemic, such as Southeast Asia, transmission vertical has become significant route for journey hepatitis B virus infection, accounting for 40% to 50% of cases infection chronic. (Wirahmadi et al., 2024)

Important for noted that acquired hepatitis B virus infection through transmission vertical own possibility 90% risk of being affected infection chronic with age six year, which can be cause disease more heart critical or chronic. The transmission rate is 100 times higher

compared to human immunodeficiency virus, however only A little attention in the field health public. (Umer et al., 2023)

For achieve the global hepatitis B elimination target by 2030, vertical transmission or transmission of the virus from Mother to child must reduce necessary is known that hepatitis B is not just problem in Indonesia however is a big problem on a world level, then For overcome problem Bengkulu City did this screening routine towards pregnant women for know is they own positive hepatitis B infection and vaccination in infants, however Still there is gap in understanding Woman about hepatitis B, start from understanding about factor causes, symptoms, prevention detection, and treatment (Ahad et al., 2022) .

Gaps the problem is also seen in the numbers Mother pregnant in the city of Bengkulu, Indonesia in 2021 - 2023 there are 20,591 mothers pregnant, however only 7,816 did HBsAg examination. This matter possible happen Because lack of support family in give attention For do HBsAg examination to center health public in his territory. The low education mother pregnancy is also a factor important in increase risk affected by hepatitis B. average education mother pregnant school intermediate first and school intermediate upper (middle school-high school). (Health office of Bengkulu City) and (Weldebrhan et al., 2023)

Factor the risk of hepatitis B in Bengkulu, Indonesia was discovered like age, education, history family Hepatitis B sufferer, history immunization and gravida have correlation with incidence of hepatitis B in the mother pregnant in the city of Bengkulu. Besides That has showed that there is connection between parity, education, age, frequency marriage, partner's hepatitis B status , history mobility partner , history of hepatitis B in family and user History needle inject there is connection with incidence of hepatitis (Diniarti et al., 2022) and (Denando & Cahyati, 2022)

In Bengkulu, Indonesia, there is group target special being attention and very important For prevent epatitis B. One of the a must problem resolved with serious in Bengkulu. is transmission from Mother to baby new born. (Pongasemsart et al., 2024)



Univariate research results showed that the majority of pregnant women, 50.9%, did not undergo HB sAg examination, the majority of pregnant women's knowledge was lacking, 53.6%, the attitude of pregnant women was negative, 57.1% and the perception of pregnant women was negative, 50.9%. Most of the distance traveled to close health services is 57.1%, husband's support is negative 50.9%. Bivariate test results show that there is a significant relationship between knowledge, attitudes, perceptions, distance traveled, husband's support and the HBsAg examination behavior of pregnant women at the way kandis Inpatient health center (Pemula et al., 2021)

Data analysis using Rank Spearman. The results show that knowledge of pregnantwomen ($p=0.002$), attitudes of pregnant women ($p=0.008$), education of pregnant women ($p=0.006$), and age of pregnant women ($p=0.008$) have correlation with hepatitis B screening, therefore that study This recommend that pregnant women use social media or print media for get confirmation about importance carry on hepatitis B examination, so that mothers are motivated to undergo hepatitis B examination. (Indriani et al., 2023)

The results of the research show that in the Johan Pahlawan Health Center Working Area, West Aceh Regency, there are correlation between home visits ($p=0.001$) and (OR=3.141/CI 95%=1.550-6.364), assistance during pregnancy ($p=0.015$) and (OR=2.489/CI95%=1.190-5.208), coordination with cadres ($p=0.018$) and (OR= 2.421/CI 95%=1.167-5.025) and there was no relationship between health instructors ($p=0.066$) and (OR=1.971/CI 95%=0.956 - 4.063) and participation in HBsAg examination d By therefore, test for HBsAg must done to the mother pregnant For recognize the disease in its early stages and For find treatment during pregnancy. (Faidul Jihad et al., 2022)

Inspection screening detection early hepatitis B in the mother still pregnant in Bengkulu City Far of target, amount residents in the dense and large city of Bengkulu so that can increase possibility transmission of the hepatitis B virus, from report data service health the city of Bengkulu was obtained results amount inspection screening detection early (HBsAg) mother pregnant Still low. The low achievements detection early hepatitis B in the mother pregnant in the city of Bengkulu became base the gap that becomes problems, research previously in

Indonesia already some have discuss about influencing factors incidence of hepatitis B in Indonesia, however especially in Bengkulu City, not yet there is research that discusses about factors low HBsAg examination in Bengkulu City, with description problem this is what happened base researcher interested for analyze a analysis factors influencing detection early (HBsAg) in pregnant women at the center service health public Sukamerindu.

2. Objectives

Aim:

To determine the relationship between education, knowledge, family support factors with esrly detection of HBsAg in pregnant women at Community Health Center Sukamerindu, Bengkulu City.

Objectives:

1. To find out the characteristics of education, knowledge, family support and early detection of HBsAg at Community health Center Sukamerindu, Bengkulu City
2. To find out the relationship between education, knowledge, family support with early detection of HBsAg among pregnant women at Community health Center Sukamerindu, Bengkulu City.

3. Methods

Study This is studies analytic observational with design cross-sectional study. Objective from study This For know relationship between variable like knowledge , education, support family and HBsAg examination. This study use method of collecting data at once at a time moment certain just. This study done to the pregnant women who did visit to the Health Center Sukamerindu in Bengkulu City, during research people who don't realize self in a way physique or mentally not can become respondents, and samples selected with accidental sampling technique as well respondents give agreement written to researcher during the research period.

Big samples in research determined with use formula Krechie, determining sample size form given population. total population totaling 71 mothers pregnant, and big amount sample as many as 60 respondents (Krejcie et al., 1996) . population collected for 3 months Finally , start month August until with October 2023 from the book



registration at the center health community (puskesmas). During study taking sample with accidental sampling technique was used until amount samples required fulfilled. Collected data in study this covering variable knowledge, education, support family and detection early HBsAg.

Data analysts used in study in a way univariate and bivariate with using the chi-square test

4. Results

Table 1 Respondent Characteristics

Variables	f	%
Education		
Low	35	58.3
Middle	20	33.3
High	5	8.4
Knowledge		
Low	38	63.3
Middle	13	21.7
High	9	15
Family Support		
No Support	37	61.7
Support	23	38.3
Detection of HBsAg		
No	34	56.7
Yes	26	43.3

Table 1 shows that most of respondents with a low level education of 35 (58.3%), most of the respondents have less knowledge 38 (63.3%), and most of the respondents have families who don't support the HBsAg examination program as much as 37 (61.7%), and most of the from respondents do not do early detection HBsAg as much as was 34 (56.7%).

Table 2 Associated Factors With Early Detection of Hepatitis B (HBsAg) Among pregnant women

Variable	Erly Detection of HBsAg				Total		<i>P</i>
	No		Yes		N	%	
	N	%	N	%			
Education							
Low	28	60.9	7	50	35	58.3	<i>0.001</i>

Middle	16	34.8	4	28.6	20	33.3
High	2	4.3	3	21.4	5	8.4
Total	46	100	14	100	60	100

Knowledge

Low	35	72.9	3	25	38	63.3
Middle	11	22.9	2	16.7	13	21.7
High	2	4.2	7	58.3	9	15
Total	48	100	12	100	60	100

0.006

Family

Support

No Support	33	86.8	4	18.2	37	61.7
Support	5	13.2	18	81.2	23	38.3
Total	38	100	22	100	60	100

0.002

As shown in table 2, it can be seen that out of 35 (58,3%) pregnant women who have low education (elementary School), there were 7 (50%) people who carry out early detection (HBsAg) examination. Of the 20 (33,3%) pregnant women who had secondary education or middle school (SMP/SMA), there were 4 people (28.6%) who carried out early detection (HBsAg) examination and of 5 people (8.4%) who had high education (D3/SI), there were 2 (4,3%) people who did not carry out early detection (HBsAg) examination. The result of the chi square test analysis (*Pearson chi square*) obtained *p-value* 0.001 ($p < 0.05$), this show there is a significant relationship between education with early detection hepatitis B (HBsAg).

Of 38 (63,3%) pregnant women who had less knowledge obtained, there were 3 (25%) people who did early detection hepatitis B (HBsAg). Of 13 (21,7%) pregnant women who had middle knowledge, there were 2 people (16,7%) who carried out early detection hepatitis B (HBsAg) and 9(15%) pregnant women who had good knowledge, there were who did not early detection hepatitis B(HBsAg) as many as 2 people (58.3%). The result of the chi square test analysis (*Pearson chi square*) obtained *p-value* 0.006 ($p < 0.05$), this show there is significant relationship knowledge with early detection hepatitis B (HBsAg).

Of 37 pregnant women (61.7%) who did not family support, 4 (44,4%) did early detection hepatitis B (HBsAg), and 23 (38,3%) pregnant women who had family support, there were 5 people (13.2%) who did not do early detection hepatitis B (HBsAg). The result chi square test analysis results (*continuity correction*)



obtained *p-value* 0.002 ($p < 0.05$), this shows that there is a significant relationship between family support with early detection hepatitis B (HBsAg).

5. Discussion

Study This find educational relationship with early detection hepatitis B (HBsAg), findings this in line with Ni Komang's findings that inspection HBsAg already carried out in various countries, however still there is a number of problem in implementation, one of them is factor Antenatal education is very important For reduce risk of hepatitis B through behavior mother's HBsAg examination pregnant (Sulyastini & Wirawan, 2023). Findings Li et al.'s research supports findings this, which states that low education about early detection HBsAg in the community can increase risk transmission of hepatitis B and ultimately Hepatitis B control is not achieved. Implementation of effective health education can increase participation public in inspection detection early HBsAg (Li et al., 2019). besides that's a finding study previously show factor higher education have level participation public in HBsAg examination at home Sick (Palom et al., 2023)

Other findings also show this that low education about hepatitis B causes they no want to do HBsAg test or screening because If done that can become burden for those who live it and the most surprising thing they feel healthy and not need to go again to doctor. (Catherine). (Freeland et al., 2020)

Objective did it detection early HBsAg in the pregnant women for ensure mother infected with hepatitis B, mothers who are positive for hepatitis B are at risk will transmit to baby, because that required education health for stop Hepatitis B transmission in 2030, HBsAg screening program in pregnant women need supported by staff health in give education and information to mother as well as family as an internal motivator prevention of hepatitis B (Qurnia et al., 2023)

According to Wiantini, there is connection education with enhancement knowledge and attitudes mother in HBsAg examination. Study this is also a find that pregnant women who has low education have risk of 2.56 times. (Wiantini et al., 2022)

Supporting theory study this state that education there is a teaching process or do activities that contain

communication processes education between educators and and students, the information provided to student in a way in a way aware will absorbed by the brain, body and mind they until reach level of knowledge (cognitive), skills (psychomotor) and attitudes (affective).

According to assumption researcher the respondent's education is very influential to interest they For do HBsAg screening, this caused fact that education plays a very important role to knowledge and awareness self on health status (Wulandari, 2023).

The goal of sustainable development goals (SDG's) in 2030 sets one effective way for reduce incidence of hepatitis B in the pregnant women is with prevent infection from Mother to children, cross sectional studies state pregnant women has an average value of sufficient knowledge of 0.65 (1.73) with 1.45% having knowledge enough, knowledge have significant influence of ($p < 0.040$), this show pregnant women who has low knowledge can give significant influence to success prevention of hepatitis B about success (HBsAg examination), so for reduce burden disease This they should given education quality health, related identification screening of pregnant women. (Chowdhury & Chakraborty, 2017)

Hepatitis B screening is a government program for disconnect chain transmission of hepatitis B to the mother pregnant to baby. Screening level Still low especially in the center primary health (Puskesmas) is in line with study Olakunde stated that factor inhibitor hepatitis B (HBsAg) screening includes low awareness pregnant women and knowledge pregnant women about Hepatitis B disease. Poor awareness and knowledge can negative impact on request HBsAg screening (Olakunde et al., 2023).

Babies infected with hepatitis B during pregnancy own risk of chronic hepatitis, for prevent transmission of hepatitis B from Mother to child required enhancement HBsAg screening, in line with study previously show one causal factors low HBsAg screening is lacking mother's knowledge pregnant about definition of hepatitis B, transmission, treatment, prevention and symptoms of hepatitis B show that there is significant relationship between knowledge with HBsAg screening amounted to mark *p value* (< 0.001). (Thahir et al., 2022)



According to Ismail's research is still ongoing there is gap problem in knowledge pregnant women related prevention (hepatitis B-HBsAg screening), for increase knowledge those suggestions given through education health during antenatal visits and campaigns health. (Afolabi et al., 2022)

Plague disease infectious (hepatitis B) when This become problems in society, factors risk become reason transmission disease happened, one effective prevention that can be done public through surveillance in a way ongoing and ongoing. Warning early through (HBsAg examination) you can prevent potency transmission disease infection new ones do n't under control, problems found in society should use a multisectoral approach , so that it can give intervention in a way quick and precise time . (Mavrouli et al., 2023) .

Analysis results show in studies Wiantini using the *Wilcoxon test*. The statistical value of knowledge before and after the intervention was given was -5.977, *p-value* 0.00 (< 0.05), while the statistical value of intention is -5.977 with a *p-value* 0.01 (< 0.05). There is a *triple* counseling effect *elimination* on the level of knowledge and intentions of pregnant women in carrying out *screening triple elimination* Effective counseling must This is done by maximizing the antenatal services provided by professional health workers. (Wiantini et al., 2022)

Support family can originate from other people (parents, children, husband, wife or relatives) who are close with subject Where form support form information, behavior in demand certain or available material make individual feel cherished, cared for and loved, in harmony with results analysis bivariate show there is meaningful relationship between support family with behavior pregnant women in hepatitis B examination (Prodi et al., 2023) . This matter show that respondents who received support husband own opportunity more big in follow hepatitis B examination (Surmiasih et al., 2020)

one of factor affecting HBsAg examination on a person is known attitude with the significant other being conformity or suitability with important people for him , deep Indonesian society relations with each other really important , so role support family especially husband will influence attitude Mother to utilization service health Notoadmodjo also stated that encouragement from

family For look for help health will influential big to desire or motivation they For access service health . (Sari, 2021)

With mark significance $p < 0.05$, then There is correlation between attitude Mother to triple elimination screening (HBsAg examination) and level support family low , neutral or high, no can influence somebody in participation to screening. (Koamesah et al., 2021)

Family consists of two or more people who are joined by blood, marriage or appointment and they live together in one household, interacting with each other in roles each other and create and maintain a culture (Barker, 2019). A wife can motivated by her husband For fulfil need will service Health , and husband's support are very important for success get service health , support in form covers moral and material support l. Need the health needs of the wife is for treatment, to obtain pre- pregnancy services (antenatal care), including triple elimination (HBsAg examination), immunization services for toddlers, and other health needs (Chasanah et al., 2021) and (Christien Anes et al., 2023).

References

1. Afolabi, IB, Aremu, AB, Maidoki, LA, & Atulomah, NO (2022). Dynamics of Hepatitis B infection prevention practices among pregnant women attending antenatal care at Lubaga Hospital Kampala, Uganda using the constructs of information-motivation-behavioural skills model. *BMC Public Health* , 22 (1), 1–15. <https://doi.org/10.1186/s12889-022-14723-3>
2. Ahad, M., Wallace, J., Xiao, Y., van Gemert, C., Bennett, G., Darby, J., Desmond, P., Hall, S., Holmes, J., Papaluca, T. , Glasgow, S., Thompson, A., Hellard, M., Doyle, J., & Howell, J. (2022). Hepatitis B and pregnancy: understanding the experiences of care among pregnant women and recent mothers in metropolitan Melbourne. *BMC Public Health* , 22 (1), 1–8. <https://doi.org/10.1186/s12889-022-13112-0>
3. Chasanah, S., Dewanti, L., & Anis, W. (2021). the Influence of Internal Factors of Pregnant Women on Triple Elimination Examination. *Indonesian Midwifery and Health Sciences Journal* , 5 (1), 88–102. <https://doi.org/10.20473/imhsj.v5i1.2021.88-102>



4. Chowdhury, S., & Chakraborty, P. pritim. (2017). Universal health coverage - There is more to it than meets the eye. *Journal of Family Medicine and Primary Care* , 6 (2), 169–170. <https://doi.org/10.4103/jfmpc.jfmpc>
5. Christien Anes, C., Yufu Bouway, D., Lodia Tutuop, K., Yufuai, AR, & Pariaribo, K. (2023). Factors that Influence Pregnant Women on Triple Elimination Examination at the Maripi Community Health Center, Manokwari Regency, West Papua Province. *Journal of Health* , 16 (3), 291–300. <https://doi.org/10.23917/jk.v16i3.2688>
6. Denando, RK, & Cahyati, WH (2022). Risk Factors for Hepatitis B in Pregnant Women in Semarang City 2020-2021 (Case Study at Genuk Community Health Center & Bangetayu Community Health Center). *Journal of Public Health*, 10(6), 656–665. <https://doi.org/10.14710/jkm.v10i6.35961>
7. Diniarti, F., Rohani, T., & Prasentya, W. (2022). Factors That Influence the Incidence of Hepatitis B in Pregnant Women. *Bandung Department of Health Polytechnic Health Research Journal* , 14 (1), 197–205. <https://doi.org/10.34011/juriskesbdg.v14i1.1971>
8. Faidul Jihad, F., Fera, D., Mulyani Participation of Pregnant Women in the HBsAg Examination in the Johan Pahlawan Health Center Working Area, West Aceh Regency, Pregnant women in the HBsAg examination in the Johan Pahlawan Health Center working area, West Aceh Regency, K. DI, & Public Health , F. (2022). *Participation of pregnant women in HBsAg checking at the work area of Johan Pahlawan Public Health, Aceh Barat Regency Fikri Faidul Jihad * , Dian Fera, Itza Mulyani* . 4 (2), 57–69. <http://journal.unpacti.ac.id/index.php/JPP>. <https://doi.org/10.47650/jpp.v4i2.376>
9. Freeland, C., Bodor, S., Perera, U., & Cohen, C. (2020). Barriers to hepatitis B screening and prevention for African immigrant populations in the United States: A qualitative study. *Viruses* , 12 (3). <https://doi.org/10.3390/v12030305>
10. Indriani, F., Hendra Pratama, N., Ninta Br Sitepu, R., Afrikahani Harahap, Y., & Public Health UIN North Sumatra, F. (2023). The Impact of Early Marriage Traditions on Reproductive Health in Women: Literature Review. *Journal of Science and Social Research* , 4307 (1), 1–8. <http://jurnal.goretanpena.com/index.php/JSSR> . <https://doi.org/10.54314/jssr.v6i1.1150>
11. Indonesian Ministry of Health. (2022). *Prevalence of Hepatitis B in Pregnant Women* . 12 (2), 512–516. <https://www.kemkes.go.id/article/view/22072900001/hentikan-penularan-hepatitis-b-kemenkes-jangan-intervensi-tenofovir-pada-ibu-hamil.html>
12. Koamesah, SMJ, Trisno, I., & Rante, SDT (2021). Relationship between Knowledge, Family Support, Frequency of Information, and Attitude Towards Triple Elimination Testing During COVID-19. *Lontar : Journal of Community Health* , 3 (1), 1–9. <https://doi.org/10.35508/ljch.v3i1.3821>
13. Krejcie, R., V. Morgan, & W., D. (1996). (1970) "Determining sample size for research activities", Educational and Psychological Measurement. *International Journal of Employment Studies* , 18 (1), 89–123.
14. Li, T., Su, S., Zhao, Y., Deng, R., Fan, M., Wang, R., Sharma, M., & Zeng, H. (2019). Barriers to the prevention and control of hepatitis B and hepatitis C in the community of southwestern China: A qualitative research. *International Journal of Environmental Research and Public Health* , 16 (2), 1–11. <https://doi.org/10.3390/ijerph16020231>
15. Mavrouli, M., Mavroulis, S., Lekkas, E., & Tsakris, A. (2023). An Emerging Health Crisis in Turkey and Syria after the Earthquake Disaster on 6 February 2023: Risk Factors, Prevention and Management of Infectious Diseases. *Healthcare (Switzerland)* , 11 (7). <https://doi.org/10.3390/healthcare11071022>
16. Muñoz-Restrepo, A.-M., Navas, M.-C., Daza, J., Giral, M., Ridruejo, E., Gerken, G., & Teufel, A. (2024). Prevention in Hepatology. *Journal of Personalized Medicine* , 14 (2), 132. <https://doi.org/10.3390/jpm14020132>
17. Olakunde, BO, Adeyinka, DA, Olakunde, OA, Raji, HB, Yahaya, HB, Ijaodola, OA, & Adesigbin, CO (2023). Barriers to hepatitis B virus screening of pregnant women in primary healthcare centers in Nigeria: health workers' perspective. *BMC Primary Care* , 24 (1), 1–8. <https://doi.org/10.1186/s12875-023-02157-8>
18. Palom, A., Almandoz, E., Madejón, A., Rando-



- Segura, A., Pérez-Castaño, Y., Vico, J., Gándara, S., Battulga, N., Gómez-I-Prat, J., Riveiro-Barciela, M., Arenas Ruiz-tapiador, J., García-Samaniego, J., & Buti, M. (2023). Community Strategy for Hepatitis B, C, and D Screening and Linkage to Care in Mongolians Living in Spain. *Viruses* , 15 (7), 1–7. <https://doi.org/10.3390/v15071506>
19. Pemumbu, G., Zuraida, R., & Susianti, S. (2021). Analysis of Factors that Influence Pregnant Women's Behavior in HBsAg Examination. *Aisyah Journal: Journal of Health Sciences* , 6 (2), 219–223. <https://doi.org/10.30604/jika.v6i2.509>
20. Porngasemsart, Y., Sirilert, S., & Tongsong, T. (2024). Change in Prevalence of Hepatitis B Virus Infection in Pregnant Women in the Last Two Decades in Thailand . <https://doi.org/10.3390/v16020314>
21. Prodi, S., Masyarakat, K., Ma, SA-, & Selatan, S. (2023). Pregnant women undergoing hepatitis B examination Heni Susita Dewi ¹ , Deli Lilia ² , Fera Meliyanti ³ Community Health Center to provide information and support to pregnant women to undergo Hepatitis B Introduction Pregnancy is the intrauterine growth and development of the fetus . 15 (2).
22. Qurnia, M., Yunita, P., & Roza, N. (2023). Management of Triple Elimination Examinations for Pregnant Women at the Tanjung Balai Karimun Community Health Center. *Journal of MIDWIFERY* , 13 (3), 106–115. <https://doi.org/10.26714/jkj.12.1.2024.209-216>
23. Sari, N.M. (2021). Analysis of Pregnant Women's Knowledge Level About Hepatitis B Surface Antigen During Voluntary Counseling Testing. *Jik Journal of Health Sciences* , 5 (1), 91. <https://doi.org/10.33757/jik.v5i1.379>
24. Sulyastini, NK, & Wirawan, IMA (2023). Antenatal Education to Support Triple Elimination Program: A Systematic Literature Review. *Journal of Science Education Research* , 9 (8), 474–485. <https://doi.org/10.29303/jppipa.v9i8.4234>
25. Surmiasih, S., Aprida, H., Hardono, H., & Putri, RH (2020). Knowledge about hepatitis B and HBsAg examination behavior in pregnant women at the Community Health Center. *Wellness And Healthy Magazine* , 2 (2), 205–209. <https://doi.org/10.30604/well.0202.8200098>
26. Thahir, S., Tulenko, SE, Ngimbi, P., Ntambua, S., Matondo, J., Mwandagilirwa, K., Tabala, M., Kaba, D., Yotebieng, M., Parr, J.B., & Thompson , P. (2022). Low knowledge about hepatitis B prevention among pregnant women in Kinshasa, Democratic Republic of Congo. *PLOS Global Public Health* , 2 (9), e0000450. <https://doi.org/10.1371/journal.pgph.0000450>
27. Umer, A., Teklemariam, Z., Ayele, F., & Mengesha, M. M. (2023). Prevalence of hepatitis B infection and its associated factors among pregnant mothers attending antenatal care at public hospitals at Hararghe, Eastern Ethiopia. *Frontiers in Global Women's Health* , 4 (April), 1–11. <https://doi.org/10.3389/fgwh.2023.1056488>
28. Weldebrhan, D., Berhe, H., & Tesfay, Y. (2023). Risk Factors for Hepatitis B Virus Infection in North Ethiopia: A Case–Control Study. *Hepatic Medicine: Evidence and Research* , Volume 15 (July), 79–91. <https://doi.org/10.2147/hmer.s407069>
29. WHO South Asia. (2023). WHO Guidance for national strategic planning: health sector response to HIV, viral hepatitis and sexually transmitted infections. In 2023 .
30. Wiantini, NN, Widiastini, LP, Made, N., & Sumawati, R. (2022). The Effect of Counseling on Knowledge Levels and Intentions of Pregnant Women in the Implementation of Triple Elimination Screening. *Pasak Bumi Jalimantan Health Journal* , 5 (1), 17–21.
31. Wirahmadi, A., Gunardi, H., Medise, BE, Oswari, H., Sari, TT, Kaswandani, N., & Karyanti, MR (2024). Seroconversion among children with HBsAg-positive mothers in Indonesia and factors affecting the anti-HBs titers. *Global Epidemiology* , 7 (September 2023), 100135. <https://doi.org/10.1016/j.gloepi.2024.100135>
32. Wulandari, LA (2023). Factors Associated with Triple Elimination Examination (Hiv/Aids/Syphilis and Hepatitis B) in the Working Area of Way Mili Health Center, East Lampung Regency. *Midwifery Journal* , 21(1) , 1–11.