

Development of a Mandatory Comprehensive Guideline on Hepatitis B Management for Pregnant Women at a Primary Health Care Center in Medan City

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ABSTRACT

Background: Indonesia is thought to have the greatest endemicity of Hepatitis B and is the third-highest endemic country in the Asia-Pacific region after India and China. Vertical transmission from mother to child occupies the largest portion of chronic Hepatitis B transmission. **Methods:** This research endeavour employed a qualitative methodology characterized by an exploratory orientation. Participants selected in this study are Public Health Workers, Midwife Health workers, and Laboratory Health Workers. The total number of participants was eight. Sampling techniques use purposive sampling. The data collection method in this study is supported by in-depth interviews and focus group discussions. **Results:** In this study, findings related to the Main Activity at The Management of Hepatitis B Control in Pregnant Women show that the Medan City Government, as a policymaker, is attempting to obtain support within the management of Hepatitis B control among pregnant women through digital-based information. Other findings while Supporting Activities in The Management of Hepatitis B Control in Pregnant Women are Strengthening Laboratory Facilities and infrastructure, including the availability of SGPT and SGOT examinations. Reagents (diagnosis enforcement) and the capacity of health worker must be strengthened. **Conclusion:** Measures and strategies must be developed to prevent Hepatitis B transmission chain, especially from mother to child. This is crucial to be carried out in a sustainable manner.

Keywords: Guidelines; Hepatitis B; Pregnant Women

INTRODUCTION

Hepatitis is a serious global public health concern, especially in developing nations like Indonesia. According to WHO's Prevention and Control of Viral Hepatitis Infection, or CEVHAP (WHO, 2012), the estimated global prevalence of hepatitis B virus (HBV) infection was approximately two billion individuals. Moreover, it is also reported that around 360 million people suffer from chronic hepatitis B, and six hundred people die every year due to the disease. Another data report shows that the hepatitis B virus has infected around two billion human beings worldwide and that approximately 240 million individuals are afflicted with chronic hepatitis B (Purba *et al.*, 2016; Rachman, Handayani, & Ridwan, 2015).

Indonesia is thought to have the greatest endemicity of Hepatitis B and is the third-highest endemic country in the Asia-Pacific region after India and China. Nine out of one hundred people in Indonesia are predicted to have been infected by HBV, while Hepatitis B and C affect around 28 million individuals. Half of the total cases (50%) have grown to chronic liver disease, 10% to fibrosis, and around 1.4 million cases have grown to liver cancer (Muljono, 2017; Blach *et al.*, 2017).

Based on an analysis of the situation with Hepatitis in Indonesia conducted by the coalition to eradicate Viral

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Hepatitis in Asia Pacific, recent health expenditure in Indonesia has mostly focused on curative treatments while ignoring and underfunding preventative programs. While many children complete the whole HBV vaccine course, there is a significant provincial variance in immunization coverage. With no national screening program for pregnant women and no facility to pay the expense of preventative treatment for infected newborns, mother-to-child transmission of HBV remains a substantial danger. A government-funded pilot program has begun to address this issue, although its reach is still limited. In Indonesia, new viral hepatitis infections are still being reported as a result of inadequate infection prevention and control procedures in healthcare institutions (Poddar, 2017).

Vertical transmission is a type of contagion that happens during pregnancy, i.e., transfer from mother to infant. If a pregnant woman has hepatitis B and HBeAg, the chances of 90% of babies being born infected or a carrier of the disease as well. It is likely that 25% of the people died because of chronic hepatitis or liver cancer. Perinatal transmission occurs a lot, especially in developing countries. Infection is possible during the labor process; however, it is suspected to be unrelated to the breastfeeding process (Istiqomah, 2015). Pan *et al.* (2016) also pointed out that pregnant women who have chronic HBV infection can vertically transfer HBV to their babies, and if untreated, chronic HBV infection develops in 80 to 90% of newborns delivered to mothers who have hepatitis B e-antigen positivity (HBeAg). The combination of passive and active postnatal vaccination decreases mother-to-child transmission from 90% to 10%.

Due to the the high incidence of hepatitis as well as geographical and logistical obstacles, viral hepatitis poses a significant public health concern within the context of Indonesia. According to the CEVHAP data from 2016, viral hepatitis emerged as a prominent public health challenge in Indonesia, with approximately 19 million individuals currently affected by HBV (CEVHAP, 2017). Data from Basic Health Research reports that the prevalence of hepatitis in Medan Municipal in 2007 and 2010 was 0.2% and 0.6%, respectively. On the other hand, data from Basic Health Research suggested that the prevalence of hepatitis in 2013 was 0.8%, and according to basic health research data in 2018, the incidence of hepatitis in the city of Medan was 0.6%. This figure decreases from the basic health research data of the city of Medan in 2013 but is not significantly decreased. It indicates that there was a significant increase in hepatitis prevalence (National Institute of Health Research and Development, 2009).

Based on data obtained from the Health Office of Medan Municipal, the incidence of Hepatitis B among pregnant women has been examined over the past two years. In 2018, there were 96 reported cases, while in 2019, the number increased to 106. These figures indicate a rising trend in the prevalence of hepatitis B cases among pregnant women in Medan. It is noteworthy that the city of Medan has implemented a hepatitis B case control program in accordance with the screening stages outlined in the Hepatitis Control Guidelines issued by the Ministry of Health of the Republic of Indonesia.

METHODOLOGY

This study is qualitative research with an explorative approach. The reason for choosing a qualitative research method is to refer to the formulation or focus of the problem regarding the management of Hepatitis B control among pregnant women in Medan City Province, North Sumatra, Indonesia. The analysis unit in this study are healthcare worker who works as a health worker. Based on these criteria, the participants selected in this study are: Public Health Workers, Midwife Health workers, and Laboratory Health Workers. Sampling techniques use purposive sampling. The data collection method in this study is supported by two types of data: primary and secondary. Primary data is obtained by means of in-depth interviews and focus group discussions. In-depth interviews were conducted using structured questions. With structured interviews, the formulation and sequencing of statements can be enhanced to facilitate a more coherent and cohesive flow of participants' conversations.

The tools used in interviews are digital recording devices. In the meantime, examining various documents yields secondary data. This data was obtained through literature studies and asked directly to government health agencies that handle hepatitis B control programs among pregnant women. In this study, the data collection process will use the interview method, direct observations, participant observations, and documentation. The analysis technique that will be carried out is the analysis of domain, taxonomy, component, and theme using the NVivo 12 Pro software application (Sugiyono, 2008; Kosasi *et al.*, 2020). The thematic content was derived from the outcomes of in-depth interviews and focus group discussions involving the participants.

The most widely expressed proposal by participants became the resulting theme. Data collection was carried out after researchers received recommendations from the Research Ethics Commission of Sari Mutiara University

Indonesia. After obtaining permission, the researcher then selects participants who match the predetermined criteria. Participants in this case are the Head of Disease Prevention and Control Section, Implementing Staff of Hepatitis B Control, Midwife Health Workers, and Laboratory Health Workers; however, researchers still use research ethics to anticipate the impacts that arise during the study.

Ethical Consideration

The study was approved by the Health Research Ethics Committee of the Sari Mutiara Indonesia University on July 29, 2022 with the reference number No. 398/F/KEP/USM/VII/2021.

RESULTS

In general, in this study, eight themes were obtained, as presented in figure 1. The resulting themes are Hepatitis B Early Detection, Hepatitis B Prevention, Strengthening Human Resources in Hepatitis B Control, Monitoring and Evaluation, Limited Number of Human Resources in the Hepatitis B Program, Supervision and Technical Guidance, Recording and Reporting, Reviewing, and Strengthening Legal Aspects. The theme model scheme was obtained through the results of a qualitative data analysis mode test, namely the model to display nodes, which aims to find a model from each Development of a Mandatory Comprehensive Guideline on Hepatitis B Management for Pregnant Women at a Primary Health Care center in central Medan. The proportions of each theme are depicted in figures 2–9 below.

The following is a comparison of participants' statements about the importance of early detection of Hepatitis B among pregnant women with the presence of special protection certificates and Hepatitis B observations or screenings shown in Figure 1 below. From the graph, it can be concluded that the dominant participant who stated that the early detection of Hepatitis B is important to implement is Participant 2, with a coverage value of 10.07%.

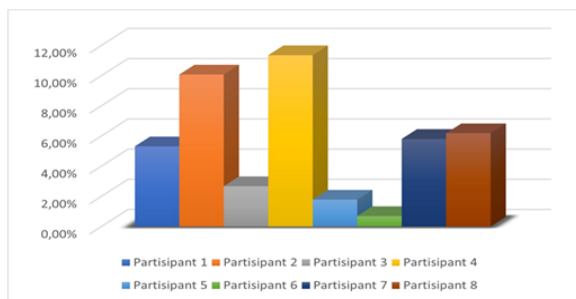


Figure 1: Theme 1- Proportion Hepatitis B Early Detection

The following is a comparison of participants' statements about the importance of preventing Hepatitis B among pregnant women through the efforts of the Early Vigilance System and Hepatitis B Treatment in Hepatitis B positive mothers (HBsAg +) who need to be accompanied by trained health workers at the time of delivery and referred to an expert doctor for further treatment (see Figure 2 below).

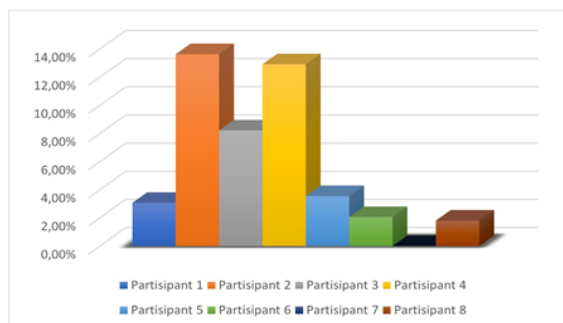


Figure 2: Theme 2- Proportion Hepatitis B Prevention

The percentage of comparison of participant statements in strengthening human resources for controlling Hepatitis B among pregnant women through the Early Vigilance System and Hepatitis B Treatment for pregnant

women who are Hepatitis B positive can be seen in Figure 3.

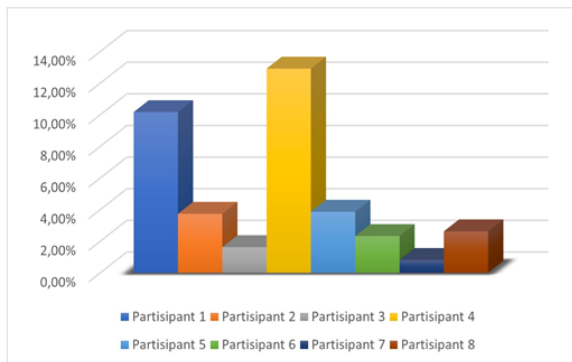


Figure 3: Theme 3- Proportion Strengthening Human Resources in Hepatitis B Control

Based on Figure 4, it can be seen that the percentage of participants' statements about monitoring and evaluation activities in the Hepatitis B Prevention Program among pregnant women from the figure, it can be concluded that monitoring and evaluation are one of the indicators of performance appraisal through the achievement of targets and any gaps that may arise.

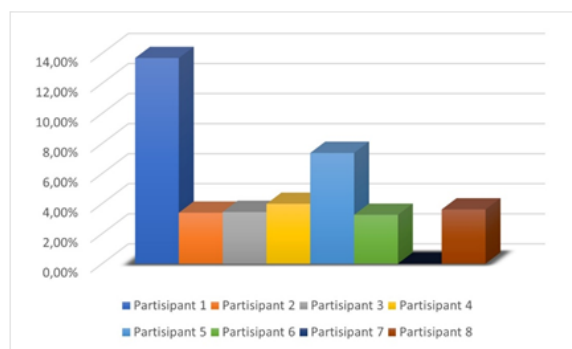


Figure 4: Theme 4- Proportion Monitoring and Evaluation

Based on Figure 5, it can be seen that the percentage of participants' statements about the limited number of Human Resources in the Hepatitis B Prevention Program among pregnant women, it can be concluded that the Limited Number of Human Resources in the Hepatitis B Program is one of the factors contributing to the occurrence of excessive workload.

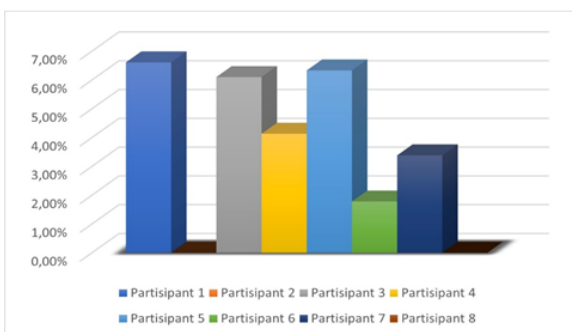


Figure 5: Theme 5- Proportion Limited Number of Human Resources in the Hepatitis B Program

Based on Figure 6, we can see a comparison of the percentage of participants' statements about Supervision and Technical Guidance. In the picture, it can be concluded that the competence and ability of officers holding the Hepatitis B Program among pregnant women need to be improved.

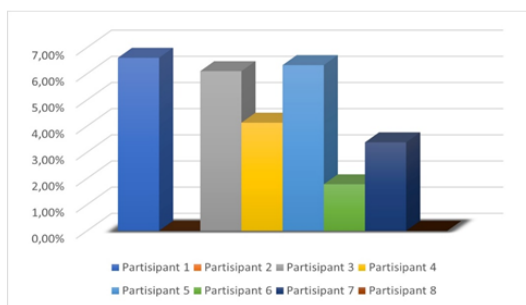


Figure 6: Theme 6- Proportion Supervision and Technical Guidance

Based on Figure 7, it can be seen that the percentage comparison of participants' statements about Recording and Reporting is to monitor activities ranging from the Primary Health Care level to the central level. Based on the theme of Recording and Reporting in the picture, the sub-theme of recording and reporting format and the availability of logistics for hepatitis B examination among pregnant women refer to the Hepatitis B Control Management Guidelines of the Ministry of Health of the Republic of Indonesia.

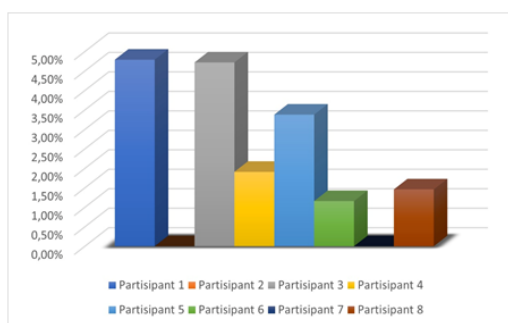


Figure 6: Theme 6- Proportion Supervision and Technical Guidance

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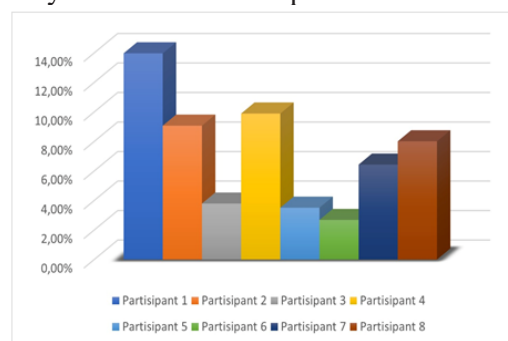


Figure 7: Theme 7- Recording and Reporting

Based on Figure 8, a comparison of the percentage of participants' statements about Reviewing and Strengthening Legal aspects can be seen. Based on this figure, it can be concluded that all participants stated that advocacy and socialization of the Hepatitis B Control Program among pregnant women to the Medan City government as policymakers need to be carried out continuously to obtain support in the Management of Hepatitis B Control among pregnant women.

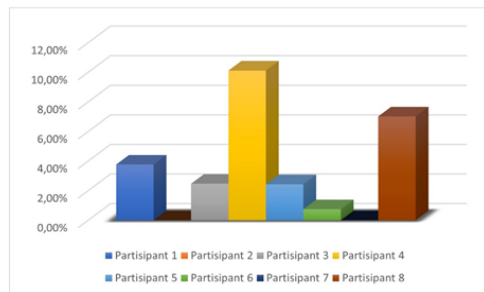


Figure 8: Theme 8- Reviewing and Strengthening Legal Aspects

DISCUSSION

1. Theme Hepatitis B Early Detection

Participants said that there are two things that help pregnant women find Hepatitis B early: special efforts to protect them and keeping an eye on Hepatitis B with specific efforts to prevent it by screening pregnant women before 24 weeks of pregnancy. Special protection efforts aim to also find out the immunization status of pregnant women. The following Diagram Query is related to the Hepatitis B Early Detection theme with the Special Protection Activities and Hepatitis B Observation sub-themes. According to Scrutton, Wallace & Wait (2018) in Situation Analysis of Viral Hepatitis in Indonesia: A Policy Report, there is no national screening program for HBV among pregnant women, and mother-to-child transmission of HBV remains a substantial danger. This is supported by Ditjen P2P (2020) which states that, specifically for Hepatitis B, Indonesia exhibits one of the highest prevalence rates among the countries in the Southeast Asian region, so it requires the attention and commitment of all policymakers both at the central and regional levels for the Hepatitis Prevention and Control Program.

Babies born to Hepatitis B-positive mothers receive HB0 injection treatment and the Hepatitis B vaccine. The following is a comparison of participants' statements about the importance of preventing Hepatitis B among pregnant women through the efforts of the Early Vigilance System and Hepatitis B Treatment in Hepatitis B Positive Mothers (HBsAg +) who need to be accompanied by trained health providers at the time of delivery and referred to an expert doctor for further treatment.

Participants' statements on early detection and protection for pregnant women need to be carried out on an ongoing basis, supported by the policies of the Ministry of Health of the Republic of Indonesia as stated in the Guidelines for the Prevention and Control of Hepatitis B among pregnant women, namely that the target of eliminating Hepatitis B transmission from mother to child is carried out through health promotion activities, activity surveillance, case handling, and early detection (Kemenkes RI, 2019).

2. Hepatitis B Prevention

According to World Health Organization (2021), preventive efforts have resulted in a decline in the incidence of new cases of chronic hepatitis B infection, which can be attributed to the increased coverage of highly effective hepatitis B vaccination among infants. This progress is reflected globally, with 85% of all infants receiving the recommended three doses of the hepatitis B vaccine in 2019, a significant increase from the 30% coverage observed in 2000. Furthermore, the global target outlined in the Sustainable Development Goals and the global health sector strategy, aiming to reduce the prevalence of hepatitis B surface antigen to less than 1% among children under five years old by 2020, has been achieved. The prevention of vertical transmission plays a pivotal role in interrupting the transmission chain of Hepatitis B.

3. Strengthening Human Resources in Hepatitis B Control

Based on the participants' statements on the theme of strengthening human resources in controlling Hepatitis B among pregnant women, it was found that the program-holder officers who alternated became obstacles in the follow-up of the Hepatitis B control program among pregnant women for subsequent replacement officers. In the Guidelines for Hepatitis Management published by the Ministry of Health of the Republic of Indonesia, it is stated that one of the weaknesses in the management of hepatitis in Indonesia is the lack of human resources. The majority of primary health care workers do not detect hepatitis B early due to ignorance of the management of people infected with the disease (Kemenkes RI, 2019; JDIH BPK Database Peraturan, 2015). The statement from the Ministry of Health of the Republic of Indonesia is also supported by the World Health Organization (2021) which states that ASEAN member

nations have national hepatitis strategic programs. There has been a significant increase in hepatitis B vaccine coverage, leading to four countries in the region achieving their control objectives for 2020 through immunization efforts. Despite the substantial decrease in the prevalence of hepatitis B infection, progress in enhancing access to hepatitis diagnosis and treatment has been moderate, and mortality rates have not yet shown a decline.

4. Monitoring and Evaluation

Monitoring and evaluation are carried out by utilizing the results of the Monthly report on the Recapitulation of Early Detection of Hepatitis B among pregnant women. Monitoring and evaluation are carried out by the holders of the Hepatitis B program for pregnant women at the Medan City Health Office. Based on the participants' exposure, it was found that monitoring and evaluation are important activities in the hepatitis B prevention program among pregnant women. According to the participants' presentation, in the implementation of monitoring and evaluation, there are still officers holding the Hepatitis B program among pregnant women in Primary Health care who do not focus on handling their main duties and functions. According to participants, this was caused by changes in officers, mutations, moving to work following their husbands, and excessive workload (double job).

The percentage of participants' statements about monitoring and evaluation activities in the Hepatitis B Prevention Program among pregnant women concluded that monitoring and evaluation are one of the indicators of performance appraisal through the achievement of targets and any gaps that may arise. The largest participant who stated that monitoring and evaluation are important activities in the hepatitis B prevention program among pregnant women was Participant 1, with a coverage value of 13.68%. This statement was also supported by a statement by the Ministry of Health of the Republic of Indonesia that monitoring and evaluation aim to assess the quality and performance of officers holding the Hepatitis B Management Program among pregnant women through the results of achieving existing targets and gaps as a basis for follow-up plans to improve even better services (Kemenkes RI, 2019).

In line with the Ministry of Health of the Republic of Indonesia, a researcher on behalf of CEVHAP states that in Thailand, Myanmar, the Philippines, and Malaysia (Scrutton, Wallace, & Wait, 2018), Monitoring and reporting of activities happen within district and provincial health services through the Ministry of Home Affairs, which monitors decentralization implementation, rather than the Ministry of Health, which has technical and strategic responsibilities.

5. Limited Number of Human Resources in the Hepatitis B Program

Based on information obtained from participants, officers with educational backgrounds as midwives will work with the main functions and duties of recording pregnant women who are at risk of Hepatitis B infection, while officers with laboratory technical education backgrounds have duties and functions in blood examinations for early detection of Hepatitis B among pregnant women. In fact, based on the experience of participants, it was found that the duties and functions of the pregnant woman data collection officer can change to those of a laboratory officer for blood examination, or vice versa, if the blood examination laboratory officer changes to a pregnant woman data collection officer. These findings are in accordance with those presented by a research team from the Coalition to Eradicate Viral Hepatitis in Asia Pacific (CEVHAP) in the report Situation Analysis Of Viral Hepatitis In Indonesia: A Policy Report, which states that the Indonesian government has undertaken an initiative to eradicate viral hepatitis, but its execution may be hampered by insufficient finance and healthcare resources (Scrutton, Wallace, & Wait, 2018).

6. Supervision and Technical Guidance

Based on the participants' statements, it was found that the ability and competence of the knowledge and skills of officers holding the Hepatitis B program improved. Efforts to improve the competence of officers holding the Hepatitis B Program among pregnant women are carried out through training activities. Participants also stated that the training should be carried out regularly. This is related to the experience of participants, who stated that the impact of officer turnover has an impact on the ability and competence of officers to be non-standardized. This finding is in accordance with the statement stated in the Hepatitis Control Guidelines of the Ministry of Health of the Republic of Indonesia that, through supervision, it can be known as early as possible the performance of officers holding the Hepatitis B Program among pregnant women to immediately make improvements through training activities and technical guidance to prevent the occurrence of larger problems. Through supervision and technical guidance, it is hoped that the performance of officers holding the Hepatitis B Program among pregnant women will be maintained and there will be continuous improvement (Dirjen P2PL Kemenkes RI, 2022; Kemenkes RI, 2015).

7. Recording and Reporting

Based on the participants' statements, it was found that the recording and reporting system for the implementation

of the Hepatitis B Management Program for Pregnant Women refers to the Hepatitis Control Management Guidelines set by the Ministry of Health of the Republic of Indonesia, Directorate of Disease Control and Environmental Health, Directorate of Direct Infectious Disease Control. Referring to the participant's statement that in the Hepatitis B Control Management Guidelines of the Ministry of Health of the Republic of Indonesia there are follow-up examination activities for pregnant women who are detected positive for Hepatitis B, namely SGPT and SGOT tests.

However, this procedure is not carried out in every Primary Health care facility in Medan City due to the unavailability of Reagents for SGPT and SGOT examinations in the laboratories of each Primary Health care facility. The participant's statement regarding the availability of Reagents for the SGPT and SGOT examinations is in accordance with the topic of needs planning and logistics distribution contained in the Technical Guidelines for Early Detection of Hepatitis B by the Indonesian Ministry of Health, which states that the success of Hepatitis B early detection activities is largely determined by the availability of facilities and infrastructure (materials, drugs, and tools) (logistics), so that the planning of materials, tools, and drugs as needed, procurement, distribution, storage, and monitoring are indispensable. To improve the effectiveness of the logistics management system, some things that need to be observed are: 1) Ensuring the availability of ingredients, tools, and medicines; 2) guaranteeing the system's effective and efficient storage of materials, tools, and drugs; and 3) Ensuring the implementation of information systems and the management of materials, tools, and drugs (Kemenkes, 2015). Weaknesses in laboratory examination facilities and infrastructure at Primary Health Care are also obstacles to overcoming Hepatitis B among pregnant women. Laboratory facilities and infrastructure at Primary Health Care for diagnosis enforcement are still very lacking (Dirjen P2PL, Kemenkes RI, 2022).

8. Reviewing and Strengthening Legal Aspects

Based on the participants' statements, it was found that the advocacy and socialization efforts of the Hepatitis B Control Program among pregnant women to the Medan City Government as policy makers to obtain support in the Management of Hepatitis B Control among pregnant women. The Hepatitis B Control Program among pregnant women has not been a top priority in infectious disease control in Medan City. Likewise, Communication, information, and Education activities from officers holding the Hepatitis B Program for Pregnant Women have been carried out through socialization activities for Hepatitis B sufferers using various methods through the media, both per person and group, but not optimally, especially during the COVID-19 pandemic in 2020.

This finding aligns with the Ministry of Health of the Republic of Indonesia's statement in the Guidelines for the Hepatitis B Prevention Program from Mother to Child. The guidelines emphasize the implementation of health promotion activities using advocacy, socialization, community empowerment, and partnership strategies. The primary objective of these activities is to enhance public awareness and knowledge about Hepatitis B. Communication, dissemination of information, and education are important activities in an effort to increase knowledge and public awareness of the right to health in order to live a healthy life independently and become an agent of change in the field of health badik in the family, community, and as an Indonesian nation to ensure quality for future generations. Thus, it can be free from the threat and disruption of direct infectious diseases such as Hepatitis B among pregnant women (Kemenkes, 2019).

CONCLUSION

After conducting member checks, the researchers identified eight themes. From the 8 themes identified, 24 sub-themes and 43 categories were obtained. In this study, there were also findings related to the Main Activity of the management of Hepatitis B Control Among pregnant women, especially the reporting and recording dimension, namely the non-implementation of SGPT and SGOT examinations in the Hepatitis B Management Program among pregnant women. Meanwhile, the stages of the SGPT and SGOT examinations are listed in the Management Guidelines for Hepatitis B Management among Pregnant Women. Meanwhile, if studies were carried out more in depth according to the theory of hepatitis B countermeasures, the need to carry out SGPT and SGOT examinations would be one of them for the purpose of enforcing diagnoses. Findings on the model of Hepatitis B management among pregnant women and the efforts to enforce diagnosis based on the dimensions. While Supporting activities for the management of Hepatitis B control among pregnant women. The findings also stressed that dimensions of research results in the laboratory by strengthening laboratory facilities and infrastructure with the availability of SGPT and SGOT Examination Reagent (Diagnosis Enforcement). Other findings are in while supporting activities related to the management of hepatitis b control among pregnant women. Strengthening the capacity of health workers is needed by changing the standard operating procedures for changing officers, reviewing double jobs, and improving the

competence of human resources. Therefore, there is a strong need for the Medan city administration to reform its role as a policymaker, to provide support to the pregnant women. Making the Hepatitis B Control Program for Pregnant Women a top priority in controlling infectious diseases within the city of Medan is highly proposed.

Recommendation

1. The Guidelines for the Management of Hepatitis B among Pregnant Women should provide comprehensive and detailed descriptions of specific protective measures tailored to the needs of pregnant women.
2. Establishing an Early Vigilance System focused on communication, information, and education is crucial to interrupting the transmission cycle of Hepatitis B, particularly from mother to child. This system should be implemented in a sustainable manner to ensure long-term effectiveness.
3. There needs to be a separate rule for officers holding the Hepatitis B program related to changing officers due to mutations, changing jobs according to their husbands, and retirement. In the Guidelines for Hepatitis B Among Pregnant Women, this rule does not yet exist.
4. It is necessary to review the Guidelines for The Management of Hepatitis B among Pregnant Women related to the excessive workload (double job) for officers holding hepatitis B programs for pregnant women in all Primary Health care settings.
5. Training on the ability and competence of officers holding the Hepatitis B program among pregnant women needs to be carried out regularly and continuously.
6. The inclusion of SGPT and SGOT examinations for pregnant women should be considered for re-regulation in the Guidelines for Hepatitis B Prevention among Pregnant Women. This measure aims to strengthen diagnostic enforcement and break the chain of Hepatitis B transmission from mother to child.
7. The government needs to create a digital-based information, communication, and education system.

Conflict of Interest

The authors declare that they have no conflict of interests.

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