

How Extended Has the Pregnant Women Understanding Been About HBV Screening?

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Abstract

The incidence of HBV globally is still high even though the effort of HBV screening has been done. This shows there is a thing that needs to be verified, namely the low understanding of mothers about HBV screening. The aim of this study is to know how extended the mothers' understanding of screening HBV has been. A scoping review is used to map evidence related to the understanding of pregnant women about HBV screening. The term of the articles searched is mapped and developed. The databases used to search for the articles are PubMed, Science Direct, Wiley and Scopus published between 2009 up to 2019. The authors found 537 articles, then selected them based on inclusion and exclusion criteria, and obtained 11 articles. This is a quantitative research method with cross-sectional research designs, case series, and cohorts. Most articles were identified from the developing countries. The result of identifying the articles is that there are two articles discussing the still low mothers understanding about HBV screening. Health education about HBV screening to pregnant women is the essential thing as the effort to prevent HBV from the mothers to the children and to decrease the HBV incident rate.

Keywords: *pregnant women, understanding, HBV screening*

1. Introduction

Globally, the incidence of hepatitis B is still high, WHO estimates that in 2015 there were hundreds of people living with chronic Hepatitis B [1]. Africa has a high amount of hepatitis B incident. About 70% -90% of infants suffering from chronic HBV infection were those who are not yet one-year-old. Areas that have medium or high endemism, are mostly caused by mother-to-child infections [2]. A total of 13,238 women who were tested for HBsAg for 7 years among 2008-2014 and 720 were positive HBsAg. For seven years the prevalence of HBV has decreased stably and significantly but Vientianere still has a high risk of transmission of HBV from mother to baby [3]. The strategies to reduce HBV rates for mothers and infants include HBsAg testing for mothers, babies born to HBV mothers receiving HBIG immunization, giving HBV vaccine immediately to the baby after birth and when the baby is 6 months old, antibodies and HBsAg tests for infants aged 9-15 months [4].

Various efforts to suppress the infection of HBV from mother to her baby have been carried out but the incidence of HBV is still high, this is due to the low understanding of pregnant women in case of HBV screening, in line with [5] said 70.3% of 380 women saying that they have gotten the health education about HBV during the pregnancy, but there is only 10.8% women are able to answer the questions correctly related to the HBV infection and its preventive measures. Therefore, this scoping review aims to identify the extent of understanding of pregnant women about HBV screening.

2. Methodology

This scoping review identifies evidence related to the extent of pregnant women's understanding of HBV screening. This scoping review used a framework [6] and is divided into steps as follows:

2.1. Identifying Research Questions

To identify the questions, the authors used the PICO framework, the question obtained was the extent of the understanding of pregnant women about HBV screening? PICO is used in identifying components of clinical evidence as a systematic review of evidence-based medicine and is supported by the Cochrane Collaboration [7].

2.2. Identifying the Relevant Articles Based on Inclusion and Exclusion Criteria

Inclusion criteria: the articles published in 2009-2019, English, focus on reviewing knowledge of pregnant women about HBV screening, primary research, document reports/draft policies/guidelines from WHO / certain formal organizations and full text. Exclusion criteria: opinions, irrelevant subjects, and letters. The authors used PubMed, Science Direct, Wiley and Scopus database in the literature search.

Table 1. Keywords in searching the literature

Population	Pregnant women*
Intervention	Screening*OR Filtering
Comparison	-
Outcome	Hepatitis B* OR HBV

2.3. Study Selection

In the study selection, the authors used a flowchart prisma. Flowchart Prisma was used to simplify and enhance the completeness of article publications [8] (see Figure 1).

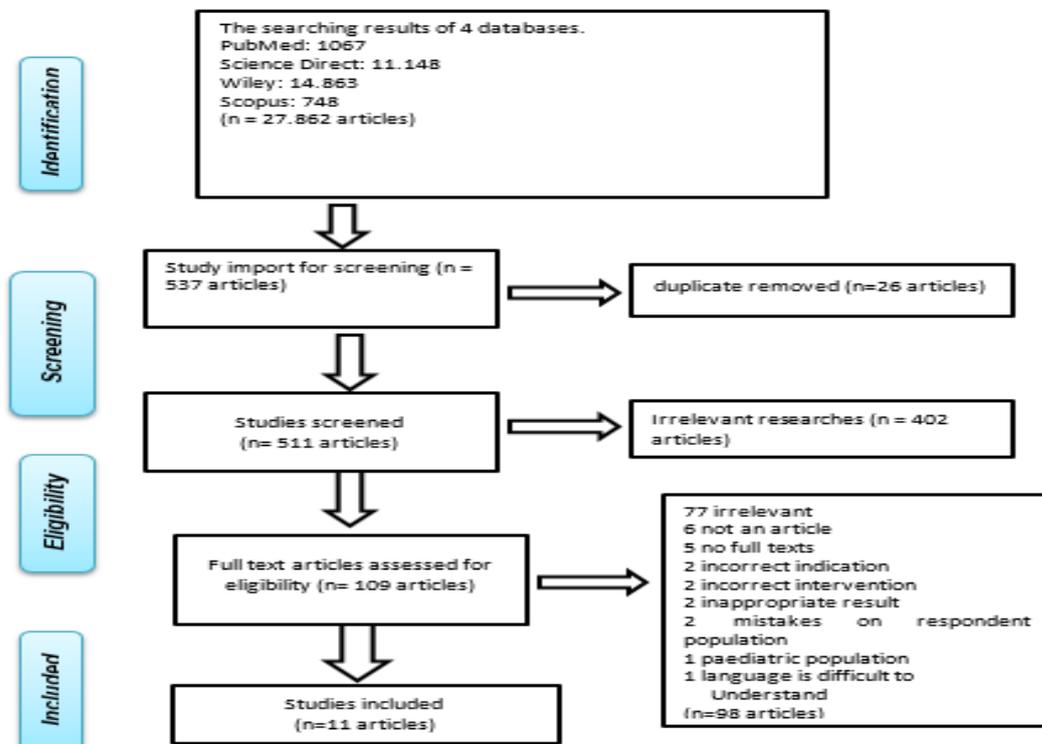


Figure 1. Flowchart Prisma

2.4. Charting the Data

At this stage, the authors collected the data and sort them into tables. Tables were grouped by the author's name, country, aims, research design, sample, and results. The charted data can be seen in Table 2.

Table 2. Charting the Data

No.	Author/Year/ Country	Aim	Data Collection	Participants/ Sample Size	Result
1	Op de Coul et al., 2011 Netherlands, Dutch	Identifying the efficiency of screening for Human Immunodeficiency Virus, Hepatitis B and Syphilis for 3 years.	Case series, Quantitative	In 2008, 190.141 pregnant mothers. In 2007 and 2006, the amounts were 186.141 and 185.942 pregnant women.	In Asia, North Africa, the Middle East, Mid and South America, the prevalence of HBV is high. Screening can prevent transmission of HBV, syphilis, and HIV from mother to baby.
2	Sasagawa et al., 2019, Japan	Assessing the effects of maternal HBV screening and perinatal prevention	Cohorts, Quantitative	3796 pregnant women and neonates	Women who had a high indication of DNA hepatitis B serum did not get the medicine for advanced treatment. All infants of HBV mothers received vaccines, babies who have been HBV are negative vaccines.
3	Huang et al., 2013, China	Following up of the born infants of the HBsAg positive mothers to find out the preventive measures after screening	Cross-sectional, Quantitative	7232 mothers who gave birth in 2010 in 8 hospitals	Unwillingness, lack of knowledge, and inability to buy vaccines
4	Diale et al., 2016, Tshwane district of South Africa	Evaluating the importance of early detection in hospitals or antenatal clinics for people with Human	Case series, Quantitative	2368 mothers suffering from HIV and HBV	the incident amount of HBV was greater in patients suffered from Human Immunodeficiency Virus

		Immunodeficiency Virus			compared to those who were not infected with HIV
5	Harder et al., 2011, Denmark, North Europe	Evaluating the use of HbsAg (in early detecting pregnant women in 2 years trial	Cross-sectional, Quantitative	140,376 pregnant women were tested HBsAg over the course of time 2-year trial	Southeast Asian women had a high prevalence of HBV. The infection of the mother suffering from HBV to a child could be prevented by screening.
6	Chibwe et al., 2019, Mwanza City, Tanzania, East Africa	Seroprevalence (anti-HBs) and HCV antibody investigations in pregnant women	Cross-sectional, Quantitative	339 pregnant women performed in June and July 2017	Age has a risk factor for the prevalence of HBV. HIV status is related to HBV
7	Chotun et al., 2017, South African	HBV screening for pregnant women post-screening management and HBV immunization in infants	Cohort, Quantitative	134 pregnant women	Determining HBV treatment steps after screening
8	Veselsky et al., 2014, Canada	HBV Screening on pregnant mothers	Case series, Quantitative	142 cases.	A technical error that contributed 2 HBsAg results which were initially reactive.
9	Thumbiran et al., 2014, South Africa	Determining the number of HBV infection on HIV sufferers on pregnant mothers and infant immunization policies	Case series, Quantitative	570 pregnant mothers had HbsAg screening to know HBV infection status.	The HBV incidence was higher in women who were infected with HIV than those who were not.
10	Yelemkoure et al., 2018, Africa	HBV screening of pregnant women and infant vaccinations at birth	Cross-sectional, Quantitative	237 women who were pregnant and their babies.	Determining the HBV treatment steps after screening
11	Kunoe, Nielsen and	Ensuring that all born babies with	Cohort, Quantitative	594 mothers and 699	Infants who were not

	Cowan, 2016, Denmark, North Europe	HBsAg positive mothers got vaccinated.		children born in 2006-2010	vaccinated against HBV at birth had incomplete vaccinations at the age of 15 months. More often, ANC reduced the number of incomplete vaccinations. Maternal age had the risk linkage to 15 months old babies getting incomplete vaccination.
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3. Results and Analysis

3.1. Article Evaluation Tool

After collecting the literature, the writer conducted a critical appraisal using the Joanna Briggs Institute (JBI) tools.

3.2. Article Rating

After conducting a critical appraisal, out of the 11 articles that have the best quality as many as 3 articles, namely number (4, 8, 9) with a score of 97.5%, the article explains in detail the important points identified. Articles that have low quality as many as 2 articles, namely number (3,10) with a score of 84%, the important points in the article are difficult to identify. The average score on the article number (1) with a score of 92.5%. Demographically, the Asian region still has a high prevalence of hepatitis in pregnant women.

3.3. Reporting the Results

A total of 11 articles have been identified, 4 articles using cross-sectional designs, 4 articles using case series designs and 3 articles using cohort designs. Based on countries, 5 articles are from developed countries, and 6 articles are from developing countries. Based on the analysis of the articles, we got 5 big themes, each of which has sub-themes. Demographics, risk factors, maternal understanding of screening and post-screening management, benefits of post-screening and barriers.

4. Discussion

4.1. Demographics

In Asia, the Northern African Continent, the Middle East, Eastern and Central Europe Continent, and Mid and South America, the incidence of hepatitis B is great [9]. Southeast Asian women have a high amount of hepatitis B incidents [10]. Demographically, in Asia, the amount of hepatitis B incident is still high in pregnant mothers and its infection from the mothers to the children.

4.2. Risk Factors

HBV prevalence is higher on the HIV sufferers compared to those who are not infected with HIV [11]. HIV status is related to HBV [12]. The incidence of HBV is higher in women who are HIV-infected than in women who are not HIV-infected [13]. Age has a risk factor for HBV prevalence [12]. Mothers with HIV have a greater risk factor for developing HBV compared to pregnant women who do not have HIV because someone who is infected with HIV has a weak immune system that is easily infected or contracted the disease [11]-[13]. The age has a risk factor, it can be understood that someone who is young has a smaller risk of being infected with HBV [12]. The non-vaccination infant at birth having the risk of incomplete vaccine at the age of 15 months shows that giving vaccines immediately after birth is important for infants [14].

4.3. Mother's Understanding of Screening and Post-Screening Management

There are more pregnant mothers coming to the medical personnel to reduce the possibility of incomplete vaccines risk. Maternal age has a risk factor at 15 months of babies who do not get complete vaccination. Mothers who often do prenatal examinations have a smaller risk factor for the incompleteness of the vaccine compared to mothers who rarely do ANC examinations. This is related to the mother's knowledge and information obtained during the mother's prenatal follow-up. In addition, age has a risk factor for the incompleteness of HBV vaccination in children, this is related to the knowledge and comprehension of maternal information [14]. Inadequacy, lack of knowledge and inability to buy HBIG vaccines. The lack of parents' knowledge about the HBIG vaccine still needs serious attention to achieve a decrease in HBV [15].

4.4. Benefits of Post Screening

Screening can prevent transmission of HBV, syphilis, and HIV from mother to baby [9]. The HBV transmission from mother-to-child can be reduced by screening [10]. Screening can be made as an effort to prevent HBV from mother to baby [9]-[10]. Determine HBV treatment steps after screening [16]. Determine HBV treatment measures after screening [17]. Cases with exacerbation of HBV received treatment. All babies born get the HBIG vaccine, after a post-vaccine examination, HBV negative baby [18]. Screening can determine treatment steps and subsequent actions. In article number two, it also states that babies born by mothers with HBV get HBIG and HBV vaccinations as an effort to prevent transmission, and evaluation results indicate that babies who get vaccinated at birth are HBV negative [16]-[18]. The provision of HBV screening for pregnant women can be useful as an effort to avoid the HBV infection from mother to baby and as an effort to determine treatment steps and subsequent actions.

4.5. Obstacles

Women who have high levels of serum HBV-DNA do not get anti-virus therapy. Mothers who have high levels of serum HBV-DNA do not receive anti-virus therapy, this shows there are still obstacles in the implementation of HBV screening [18]. Technical errors that contributed to the two initially reactive HBsAg results and technical errors from health workers can contribute to the results of screening errors. This shows that there is still an obstacle in the implementation of screening that is human error [19].

The results of the literature review that has been done, there are two articles related to understanding. The more the mothers check their pregnancy to the medical personnel, they can reduce the possibility of the risk of incomplete vaccines. Maternal age has risk factors for incomplete vaccination at 15 months [14]. This relates to the mother's understanding of screening and post-screening management. Mothers who diligently visit ANC are more often to be exposed to information about preventive measures. In addition, mothers who are very young or too old have different responsiveness in terms of understanding the information that has been obtained.

As well as unwillingness, lack of knowledge and inability to buy HBIG vaccines [15]. An understanding of screening is very important for pregnant women and is closely related to the achievement of decreasing HBV incidence. If mothers understand the importance of screening for vertical HBV prevention, they will take preventative measures correctly and as directed. Providing health education about HBV screening to mothers in ways and languages that are easy to understand is necessary so that mothers can understand HBV screening and prepare post-screening management to reduce the transmission from mother suffering from HBV to baby and to achieve a reduction in HBV incidence. Besides, there are still a few articles that discuss success screening from the perspective of a mother's understanding.

5. Conclusion

The incidence of HBV is still high and the mother's understanding of screening is low. There are still a few articles that discuss the problem of motherhood about HBV screening. One effort to reduce HBV rates in pregnant women is to provide understanding through health education so that mothers understand and can prepare the next steps to prevent HBV transmission from mother to baby. The authors' recommendation for further research is to review the understanding of pregnant women regarding HBV screening, because there are still few articles that discuss from the perspective of understanding mothers, as well as providing health education for pregnant women regarding HB screening.

The advantage of scoping review is the process of extracting and analyzing data, using a clear theoretical framework to support the findings. The topic of understanding pregnant women about HBV screening is still very little researched, so this literature study can be used as a reference for further research.

The limitation in the scoping review is that most studies took place in Africa, so the results of the research are more biased towards African culture. This will be biased if the research results are applied in other areas because they have different cultures.

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