

Knowledge and attitude about hepatitis B virus and its transmission from mother to child among a sample of pregnant women attending the primary health care centres in Baghdad, Iraq

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ABSTRACT

INTRODUCTION: Hepatitis B virus (HBV) is one of the most common viruses in the modern world and ranked by the WHO as one of the top ten killers. The virus is responsible for approximately 1.5 million deaths worldwide each year, two thirds of which are attributable to primary hepatic carcinoma following HBV infection.

OBJECTIVE: To assess the knowledge and attitudes towards hepatitis B and its transmission from mother to child among pregnant women attending the primary health center.

METHODS: A cross sectional study was carried for the period from 1st of Sep. /2018 – 15th of Nov. /2018, at nine primary health centers at Baghdad. A convenient sampling technique was conducted to choose the primary health centers; pregnant women 15-49 years old were included, pregnant women who refuse to participate were excluded. A questionnaire was administered via face-to-face interviews. The questionnaire consisted of 26 items, divided into three parts: demographic information, knowledge of HBV, and attitudes about HBV.

RESULTS: The proportion who agreed to participate was high (93%). The most common age groups were (25-29) years old and (20-24) years old, (27.5%) and (26.5%) respectively. More than half of the women were housewives 144 (72%). more than half of the pregnant did not know that hepatitis B is caused by a virus 161 (80.5%). 105 (52.5%) did not know that HBV can be transmitted through the use of unsafe needles, sharps, doing tattoo or during dentist visit and nearly (81.0%) did not know that HBV can be transmitted from mother to infant. 123 (61.5%) of the respondent agreed that the person with HBV should always be isolated to prevent HB infection to others.

CONCLUSION: Pregnant women had insufficient general knowledge regarding HBV infection and their conception regarding mode of transmission, vaccination and prevention of MTCT were poor. Despite more respondent being aware of the importance of antenatal screening, neonatal vaccination and postnatal follow up of HBV; their attitude towards infected person were poor.

Key words: knowledge, attitude, hepatitis B virus, pregnant women.

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INTRODUCTION

Hepatitis B is an inflammatory process of the liver caused by a viral infection that is found worldwide. The World Health Organization (WHO) estimated that in 2015 about 240 million people were chronic carriers of hepatitis B virus (HBV),¹ with more than 686,000 deaths annually.²

It ranges from acute presentation, mild or

fulminant hepatitis to chronic infection with liver cirrhosis, liver failure, hepatocellular carcinoma and death.³

HBV infection can be prevented by using protective barriers, sterilized medical equipment, and a suitable hospital waste management system.⁴ HB immunization as part of childhood vaccination has decreased rate of infection, especially among adults under 20 years.⁵



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HBV is transmitted by blood and blood products, sexual contact and vertically from mother to child. Vertical transmission has been identified to be one of the causes of the high prevalence of HBV infection in Sub-Sahara Africa.⁶ Mother-to-child-transmission (MTCT) is the major mode of HBV transmission worldwide with around 90% of infected infants progress to chronic hepatitis B; a risk which is much higher than that seen in horizontal transmission where the rate of chronicity is 30–50% when infected before 6 years of age and < 5% when infected in adulthood.⁷

Despite improved childhood HBV vaccination worldwide, MTCT still accounts for about 50% of new HBV infections in high endemic countries and one-third in low endemic countries.⁸ Therefore, preventing MTCT is crucial for decreasing HBV prevalence. Prevention requires HBV-infected mothers to be aware of their disease status and to understand the consequences of HBV transmission to their child. Although, many studies have demonstrated that insufficient knowledge of HBV infection in the general public and among health care workers,^{9–11} only a few studies have assessed knowledge of hepatitis B and MTCT among pregnant women.¹² Those studies also indicated gaps in the knowledge and attitude of those mothers towards methods of preventing MTCT of hepatitis B. Their attitudes could affect their willingness for prenatal screening and to follow the current WHO immune prophylaxis guidelines, which include birth dose vaccine, hepatitis B immunoglobulin for their infants, and completing HBV vaccine series prior to 1 year of age.¹³

The aim of this study is to assess the knowledge and attitudes of pregnant women who attended primary health care centres in Al-Rusafa Health Directorate in Baghdad towards hepatitis B and its transmission from mother to child.

METHODS

Study design and setting: A cross sectional study was carried out at nine primary health care centres belongs to Al-Rusafa Health Directorate (Al-Rusafa sector, Al-Ademiyah sector and Al-Baledyate First sector) in Baghdad from the 1st of September 2018 to the 15th of November 2018.

Ethical consideration: The study has been ap-

proved by the scientific and ethical committees for research at Al-Rusafa Health Directorate. Aims of the study were explained to all participants and verbal consent was taken from each participant before being enrolled in the study.

Definition of cases, inclusion and exclusion criteria: All the pregnant women (age range 15–49), attending the health centre in their first antenatal visits were included. The targeted sample was 215 pregnant women, 15 of them has refused to fill the questionnaire form and declined to participate so the respondent rate was 93 %. Analysis has done on the remaining 200 participants.

Sampling technique: A convenient sampling technique was used to choose the primary health care centres due to limited resources and available facilities; three sectors included, from each sectors we chose three primary health care centres (PHCC).

Questionnaire: The questionnaire was jointly developed by the study team in English based on previous survey¹⁴ and then translated into Arabic. The questionnaire was pre-tested on 10 pregnant women who are not included in the study to verify that it is understandable to them. The questionnaire and its translation into Arabic language has been reviewed and approved by an independent committee included experts in gastroenterologists, community, and family physicians.

The questionnaire consisted of 26 items, divided into three parts: demographic information, knowledge of HBV, and attitudes about HBV. The demographic information included age, self-reported HBV infection status, number of children, stage of trimester, occupation and education level. **The knowledge section** tested three aspects: **1) general knowledge** of HBV included 4 items: question 1,7,8, and 9; **2) modes of transmission** included 5 items: question 2, 3, 4, 5, and 6; and **3) knowledge of vaccine and MTCT of HBV** included also 5 items: question 10, 11, 12, 13, and 14. For each item there were three response options: 'yes', 'no', and 'don't know'. **The attitude section** consisted of 6 items; question 15, 16, 17, 18, 19, and 20 and was mainly about prevention of MTCT of HBV and follow-up after birth. For each item there were three response options: 'agree', 'disagree', and 'don't

know’.

Data collection: The questionnaire was administered via face-to-face interviews because many participants had a limited literacy and it was difficult for them to fill the questionnaire without assistance. The interviews were conducted by the researcher or by a trained paramedical staff who was working in the antenatal care unit.

Statistical analysis: - The statistical analysis of the study was performed with the statistical package for social sciences (SPSS) 23. Categorical data formulated as number and percentage, numerical data with normal distribution were described as mean and standard deviation.

RESULTS

The response rate in this study was 200 out of 215 (93%). The participant’s ages range from 15-49 years with a mean $\pm$ SD of 27.94 $\pm$ 6.76 years. Other Socio-demographic features and some obstetric variables of the participants are seen in [table 1](#).

[table 2](#) illustrates frequency distribution of pregnant knowledge about hepatitis B infection. Regarding the general knowledge questions more than two-thirds of participants do not know that Hepatitis B is caused by virus and can lead to liver cirrhosis and cancer and only about 37 (18 %) participants realized that HBV infection could be asymptomatic. [See Table 2](#). More than 80% of participants do not know that HBV can be transmitted from mother to her foetus. Their knowledge about other ways of transmitted were also very limited [table 2](#). Regarding knowledge about vaccine and MTCT, the majority of the participants 173 (86.5%) knew that a hepatitis vaccine was available; however, 125 (62.5%) of them did not know that receiving less than three doses of hepatitis B vaccine does not give protection against HBV infection. Their knowledge about how to protect a foetus to a mother infected with HBV by drugs, vaccine and HB immunoglobulin were very scarce [table 2](#).

Attitude towards HBV: of the respondent, a total of 173 (86.5%), 180 (90.0%) were willing to be screened for HBV during antenatal care and let their baby receive HBV vaccine, respectively. Only, 46 (23.0%) of them were willing to get pregnant, if they got HBV infection. Moreover, if they were diagnosed with HBV, only 43 (21.5%)

Table 1:- Distribution of pregnant women according to socio-demographic characteristic.

Demographic variables		Number	%
Age (year)	15-19	12	6.0
	20-24	53	26.5
	25-29	55	27.5
	30-34	43	21.5
	35-39	25	12.5
	40-44	12	6.0
	45-49	0	0
Occupation	Student	4	2.0
	Employed	52	26
	Housewife	144	72
Educational level	Illiterate	16	8.0
	Primary school	91	45.5
	Secondary school	37	18.5
	University and higher	56	28.0
Obstetric variables			
Gravidity	Primigravida	29	14.5
	Multigravida	171	85.5
Trimester	1st trimester	57	28.5
	2nd trimester	109	54.5
	3rd trimester	34	17.0
Total		200	100

of them agreed to let their doctor and their husbands know and tell their husband that they should receive HB vaccine, while 193 (96.5%) of the pregnant agreed to let their baby HBV testing during the baby’s first year. 123 (61.5%) of the respondent agreed that the person with HBV should always be isolated to prevent HB infection to others as shown in [table 3](#).

DISCUSSION

Hepatitis B (HB) is a serious global public health problem which affects liver and caused by hepatitis B virus (HBV). It is contagious and easy to be transmitted from one infected individual to another by blood to blood contact, mother to child, unprotected sexual intercourse, and other barber shop and beauty salon equipment.¹⁵ Increasing prevalence of HBV infection among women of childbearing age places a significant number of infants and newborns at risk of vertical transmission.¹⁶

In our study, we approached women of child bearing age so more than 50 % of our sample were 20-29 years. Although the majority of

Table 2:- Distribution of pregnant women according to their knowledge about hepatitis B

Knowledge variable		No.	%
General Knowledge			
A person can be infected with hepatitis B and not have any symptoms of the disease	Yes	37	18.5
	No	110	55.0
	Do not know	53	26.5
Hepatitis B is caused by a virus	Yes	27	13.5
	No	12	6.0
	Do not know	161	80.5
Hepatitis B infection can lead to cirrhosis (scarred liver)	Yes	18	9.0
	No	54	27.0
	Do not know	128	64.0
Hepatitis B infection can lead to liver cancer	Yes	16	8.0
	No	33	16.5
	Do not know	151	75.5
Mode of transmission			
Hepatitis B can be transmitted from mother to fetus	Yes	22	11.0
	No	16	8.0
	Do not know	162	81.0
Hepatitis B can be transmitted through use of unsafe needles, sharps, tattoo or dentist visit	Yes	15	7.5
	No	80	40.0
	Do not know	105	52.5
Hepatitis B can be transmitted through unprotected sexual intercourse	Yes	11	5.5
	No	30	15.0
	Do not know	159	79.5
An individual can be infected by both Hepatitis B and HIV	Yes	9	4.5
	No	179	89.5
	Do not know	12	6.0
Hepatitis B can be transmitted through blood transfusion	Yes	7	3.5
	No	20	10.0
	Do not know	173	86.5
Vaccine and MTCT knowledge			
There is a vaccine for hepatitis B	Yes	173	86.5
	No	21	10.5
	Do not know	6	3.0
Vaccination of less than three doses does not give protection against hepatitis B?	Yes	50	25.0
	No	25	12.5
	Do not know	125	62.5
If you got HBV infection, do you know that you should take drugs that are known not to harm the developing baby in pregnancy to prevent transmitting HBV to your baby?	Yes	46	23.0
	No	125	62.5
	Do not know	29	14.5
Babies that are infected perinatally (at or around the time of delivery) are at high risk for eventual complications of liver fibrosis, cirrhosis or liver cancer	Yes	10	5.0
	No	90	45.0
	Do not know	100	50.0
If you got HBV infection/ do you know that your baby should receive anti- HBV antibodies (immunoglobulin)?	Yes	9	4.5
	No	168	84.5
	Do not know	23	11.5
Total		200	100

Table 3:- Distribution of pregnant women according to their attitude towards hepatitis B virus.

Attitude variable		No	%
Are you willing to take your baby back to the clinic to test his/her HBV status a few times during the 1st year after birth?	Agree	193	96.5
	Disagree	3	1.5
	Do not know	4	2.0
Are you willing to let your baby receive HBV vaccine?	Agree	180	90.0
	Disagree	7	3.5
	Do not know	13	6.5
Are you willing to be screened for hepatitis B during an antenatal care visit (blood test)?	Agree	173	86.5
	Disagree	12	6.0
	Do not know	15	7.5
The person with HBV should always be isolated from other people to prevent infection?	Agree	123	61.5
	Disagree	16	8.0
	Do not know	61	30.5
Are you willing to get pregnant if you make sure that you have got hepatitis B?	Agree	46	23.0
	Disagree	29	14.5
	Do not know	125	62.5
If you got hepatitis B, are you willing to let your doctor and your husband know and tell your husband that he should receive hepatitis B vaccine?	Agree	43	21.5
	Disagree	92	46.0
	Do not know	65	32.5
Total		200	100

women participated in this study have received some formal education, their knowledge about HBV infection was generally low. Our results are lower than that reported in a study from Erbil city in Iraq¹⁷ which also stated that even medical students had poor knowledge. A similar adequate knowledge has been reported in Sudan.¹⁸

In our study, general knowledge about HBV infection is limited, for example more than 80 % did not know that HB is a virus and can lead to liver cirrhosis and liver cancer. (See table 2) This is consistent with the results of a study conducted on a trained health care workers in China,¹⁹ and lower than that conducted in Mumbai.²⁰ In contrast, about two-thirds of the participants from Erbil Iraq¹⁷ and 40 % of participants from Iran²¹ knew that HBV can cause liver cancer. The overall general knowledge of the pregnant women in our series was approximately in line with the level of knowledge among Cambodian Americans,²² but much lower than the knowledge of hairdressers.²³

The medical and other health and non-health students showed various low levels of knowledge about HBV,²⁴⁻²⁶ this wide variation may be due to the type of sampling method used,

size of screened population, the variation of geographical location and age group included in these studies.

It's worth mentioned that some studies have reported a good knowledge about HBV among their participants; in China¹⁴ about 60 % knows that HBV can lead to liver cirrhosis, in Ghana 90.8 % knew that HB is a virus,²⁷ and more than 70 % of participants from Saudi Arabia know that it is a viral infection and can cause liver cancer.^{28, 29} the higher level of knowledge in Saudi studies may be explained by the fact that the participants were interviewed through internet in the former study and being medical students in the later, giving them the change to improve their answers.

Regarding mode of transmission, **table 2** shows that more than 90 % of the participants have answered wrongly or said that they did not know for the questions regarding mode of transmission. These results were very low comparing to that of another study on students of medical and health colleges conducted in Baghdad.³⁰ The reason for this clear difference is expected as the sample in the second study has a great probability to being exposed to a medical knowledge. However, our result about mode of transmission sounds similar to that from Pakistan.³¹

Some studies have come to a similar low knowledge about mode of transmission; in France a study showed low level of knowledge about transmission of HBV through sex contact and using unsafe needles.³² Similarly, Adeymi from Nigeria³³ and Mkandawire from Ghana³⁴ come to this result. Although the study from Mumbai²⁰ showed a relatively low level of knowledge about mode transmission of HBV, the results were better than ours apart from having a similarly low level of knowledge about transmission through use of unsafe needles.

Studies from different countries showed much higher level of knowledge about mode of transmission of HBV like sex contact, use of infected needles, blood transfusion and mother to foetus than ours. These studies showed adequate knowledge about modes of transmission in a rate ranging between 50% - 90%. The above higher level of knowledge can be explained by targeting people who are more educated and exposed to medical knowledge or due to using different way of data collection that permits

enough time from the participants to check their answers; Erbil study in Iraq¹⁷ asked medical students, a study²⁸ from Saudi Arabia asked people through internet, another Saudi study questioned medical students.²⁹ and a study from China.¹⁴

Of our participants, 86.5 % were aware that HBV vaccine were routinely available in Iraq, these results goes in line with a study conducted among medical student in Saudi Arabia (86.5%).²⁹ another Iraqi study³⁵ has reported that 100 % of medical staff and 91 % of paramedics knew that the effective vaccine for HBV is available. This very high rate can be explained by the fact that physicians and paramedics had more training years and continuous medical education activities in the postgraduate years, therefore they had wider knowledge. Also, a study on immigrant Asian Americans has show that 95 % of the enrolled participants understand that HBV is preventable by vaccination.^{36,37} Our results is higher than that reported by many studies^{17,14, 28} where knowledge about vaccine ranged between about 60 -75 %, the relatively higher level in our study can be due to our sample which targeted pregnant women who are more concerned with vaccination that unmarried or non-pregnant women.

Generally, the respondent had positive attitudes on screening, baby testing for HBV and receiving vaccine. Less than half of them were willing to get pregnant if they got the disease, because they have beliefs that the disease might affect the baby. Some of them refuse to let their doctor or their husband know if they got HBV infection and some had beliefs that the infected person should be isolated. These negative attitudes may be linked to the low level of satisfactory knowledge in general and specifically to the poor knowledge at the domain of disease transmission and prevention. In compliance with the WHO recommendations for universal immunization against HBV infection by all countries, Iraq is implementing a universal coverage of HBV vaccination but more campaigns using public social medias is needed to raise awareness of different sectors of the population including pregnant women. Such campaigns will change the negative attitude and improve the knowledge of the community about this potential serious disease.

CONCLUSION

Pregnant women had insufficient general knowledge regarding HBV infection and their conception, mode of transmission, vaccination and prevention of MTCT.

Despite more respondent being aware of the importance of antenatal screening, neonatal vaccination and postnatal follow up of HBV, their attitude towards infected person were still poor.

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Abbreviation list: Hepatitis B virus (HBV), Mother-to-child-transmission (MTCT), Primary health care centres (PHCC), Standard Deviation (SD), Statistical package for social sciences (SPSS), World Health Organization (WHO)

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