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## KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING HEPATITIS B INFECTION AMONG OUTPATIENTS HOSPITAL VISITORS

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### ABSTRACT

**Background:** Hepatitis B virus (HBV) remains a significant global health challenge, affecting an estimated 250– 300 million people worldwide. Despite the availability of preventive measures, public awareness and understanding of HBV often remain inadequate, particularly in regions with high endemicity. **Objective:** This study aimed to assess the knowledge, attitudes, and practices (KAP) regarding HBV among outpatient visitors in Baghdad, Iraq, and to explore how these aspects correlate with sociodemographic factors. Methods: A crosssectional study was conducted from March to July 2024 across four major hospitals in Baghdad: Al Yarmouk Teaching Hospital, Al Forat Hospital, Al Kindi Teaching Hospital, and El Sheikh Zayed Hospital. A total of 400 adult outpatients (aged 18 and above) were recruited using a convenient sampling method. Data were collected using a structured 35-item questionnaire covering demographic information and KAP related to HBV. Data analysis was performed using IBM SPSS version 29, with statistical significance set at p < 0.05. Results: Of the participants, 67.3% were male and 62.5% identified as middle-class. Poor knowledge of HBV was noted in 38% of respondents. While 54% recognized jaundice as a main symptom, only 14.5% had undergone HBV screening, and 20.8% had received vaccination. Additionally, 37.5% demonstrated poor preventive practices. Significant associations were found between KAP scores and participants' age, education, occupation, and place of residence. Conclusion: The study reveals a concerning deficiency in knowledge and preventive practices related to HBV among outpatient visitors, highlighting the need for targeted awareness and educational campaigns to improve public understanding and health behaviors.

**KEYWORDS:** Knowledge, Attitudes, and Practices regarding Hepatitis B Infection Among outpatients Hospital visitors.

### **INTRODUCTION**

Hepatitis B virus (HBV) infection remains a major public health concern globally, with an estimated 250-300 million people living with chronic HBV and approximately 1.5 million new infections occurring each year.<sup>[1]</sup> It is believed that nearly two billion individuals worldwide show serological evidence of past or present infection.<sup>[2]</sup> HBV The burden of HBV is disproportionately higher in developing nations, particularly within rural and underserved areas.<sup>[3]</sup> The prevalence of chronic HBV infection varies widely by region, ranging from 0.2% to as high as 20%, with over 45% of the global population living in areas of high endemicity such as sub-Saharan Africa and the Asia-Pacific region, excluding Japan, Australia, and New

Zealand.<sup>[4]</sup> In the Middle East, Egypt shows a hepatitis B surface antigen (HBsAg) prevalence between 3% and 11%<sup>[4]</sup>, while in Iraq, HBV prevalence ranges from 1% in the north to 3.5% in the southern regions, placing much of the country in the intermediate endemicity category.<sup>[5]</sup> Alarmingly, global deaths due to viral hepatitis have increased from 1.1 million in 2019 to 1.3 million in 2022, with 83% attributed to HBV alone.<sup>[6]</sup> The primary routes of HBV transmission include parenteral exposure (e.g., blood transfusions, needle sharing), sexual contact, vertical transmission via body fluids and shared personal items.<sup>[7]</sup> Risk factors vary globally but often include unsafe healthcare practices, unprotected sex, intravenous drug use, and exposure

through barbershops, tattoos, or piercings.<sup>[8]</sup> In highendemicity regions such as Africa and Southeast Asia, vertical transmission is a predominant route, with up to 90% of infants born to HBeAg-positive mothers becoming chronically infected if not immunized.<sup>[9]</sup> Clinical presentation of HBV varies from asymptomatic infection to fulminant hepatitis, with symptoms such as fever, rash, arthralgia, jaundice, and right upper quadrant pain often seen in symptomatic cases.<sup>[10]</sup> HBV is a member of the Hepadnaviridae family and carries a partially double-stranded DNA genome. It encodes several proteins, including surface antigen (HBsAg), core antigen (HBcAg), and the soluble e-antigen (HBeAg), all essential in viral replication and diagnosis.<sup>[11]</sup> Vaccination remains the most effective preventive measure. Since 1982, HBV vaccines have significantly reduced disease incidence, and universal infant immunization is practiced globally.<sup>[12]</sup> Iraq follows a national schedule with four doses beginning at birth.<sup>[13]</sup> Nonetheless, various barriers-such as low awareness, lack of accessibility, and fear-continue to hinder vaccine coverage.<sup>[14]</sup> Additional control optimal strategies include safe injection practices and sterilization of tools in community settings<sup>[15]</sup>, along with antiviral use and timely immunoglobulin administration to prevent mother-to-child transmission.<sup>[16]</sup> Given the public health impact of HBV, assessing knowledge, attitudes, and practices (KAP) among at-risk populations is critical. KAP surveys provide valuable insights into behaviors and beliefs influencing disease spread and prevention strategies.<sup>[17]</sup> Outpatient visitors, who routinely interact with healthcare systems but are not hospitalized, represent a key demographic for such assessments. This study, aligned with Ministry of Health priorities, seeks to evaluate KAP toward HBV among hospital outpatients in Baghdad and analyze how sociodemographic characteristics influence these factors.

## METHOD

A descriptive cross-sectional study was conducted from March 1 to July 31, 2024, to assess knowledge, attitudes, and practices (KAP) regarding Hepatitis B virus (HBV) infection among hospital visitors in Baghdad, Iraq. The study was carried out in four major hospitals: Al Yarmouk Teaching Hospital, Alforat Hospital, Alkindy Teaching Hospital, and El Sheikh Zayed Hospital.

A total of 400 participants aged 18 years and older were selected using a convenient sampling method. Individuals with mental illnesses were excluded from the study to ensure accurate and reliable responses. Data collection occurred twice weekly, with each session lasting approximately five hours. Participants were approached in various consultation departments and interviewed face-to-face after providing verbal consent. The interviews were conducted using a structured 35item questionnaire, which was reviewed and validated by a team of experts, including a specialist in community medicine and a microbiologist. The questionnaire was divided into four sections: sociodemographic data, 20 items assessing knowledge of HBV, 7 items evaluating attitudes, and 8 items addressing preventive practices. Participants' responses were scored and categorized into three levels of awareness: poor ( $\leq$ 50% correct answers), acceptable ( $\leq$ 75%), and good (>75%). To assess the reliability of the questionnaire and the time required for completion, a pilot study was conducted with 20 participants. These individuals were excluded from the final sample as no adjustments were necessary. The data were coded and analyzed using IBM SPSS version 29. Descriptive statistics (frequencies, percentages, means, standard deviations, and ranges) were calculated. Pearson's Chi-square test, with Yate's correction or Fisher's Exact Test when appropriate, was used to assess associations. A p-value  $\leq 0.05$  was considered statistically significant. Ethical approval was granted by the Iraqi Board of Medical Specializations and the Ministry of Health, including the AlKarkh and AlRasafa directorates. Participant health privacy and confidentiality were fully maintained throughout the study.

### RESULTS

The outpatient visitors seem to serve a predominantly young population (20-39 years) in 51%. The higher number of male visitors in 67.3% could indicate gender-specific health issues. The middle Socio-economic predominance in 62.5%. As in table 1.

 Table 1: Distribution of studied sample regarding Sociodemographic characteristics.

I-Socio-demographic cl	No.	%	
	<20years	16	4.0
	2029	204	51.0
$\Lambda q_{2} \left( u_{2} q_{2} r_{2} \right)$	3039	124	31.0
Age (years)	4049	42	10.5
	>50years	14	3.5
	Mean±SD (Range)	29.4±7.9	0 (19-56)
Condor	Male	269	67.3
Genuer	Female	131	32.8
	Low	72	18.0
Socio-economic status	Middle	250	62.5
	High	78	19.5

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35% of Source of hepatitis B information coming from Brochures and posters as in fig 1.



A significant portion of hospital visitors 69% have heard of Hepatitis B, and most understand it is a viral disease that can affect liver function 71% and cause liver cancer 61%. However, there is a notable gap in knowledge regarding transmission methods. For example, only 40.8% know that Hep. B can be transmitted by unsterilized syringes and needles, 40.5% are aware of its potential for transmission via unsafe sex and 60% are aware that transmitted by contaminated blood and products. Furthermore, awareness of prevention through vaccination stands at 50%. As in table 2.

Table 2:	<b>Distribution</b> o	f studied s	ample reg	arding res	ponse to kno	wledge que	estionnaire.
			·· · · · · · · · · · · · · · · · · · ·			······································	

II-Knowledge of Hep. B among Hospital visitors:	No.	%
Have ever heard about Hepatitis	305	76.3
Have ever heard about Hep. B	276	69.0
Hep. B a viral disease	246	61.5
Hep. B can affect liver function	284	71.0
Hep. B can cause liver cancer	244	61.0
Hep. B can affect any age group	211	52.8
The early symptoms of disease are like cold and flu	236	59.0
Jaundice (yellow coloration of skin) is the symptom of Hep. B	228	57.0
Nausea, vomiting and loss of appetite common symptoms	220	55.0
There is no symptoms of disease in some of the patients	177	44.3
Hep. B can be transmitted by unsterilized syringes, needles and surgical instruments	163	40.8
Hep. B can be transmitted by contaminated blood and products	240	60.0
Hep. B can be transmitted by using blades of barber, ear or nose pricking	220	55.0
Hep. B can be transmitted by unsafe sex	162	40.5
Hep. B can be transmitted from mother to child	185	46.3
Hep. B can be transmitted by contaminated water or food prepared by the person suffering with these infections	202	50.5
Hep. B can be cured	190	47.5
Hep. B can be self-cured	196	49.0
There is vaccination available for Hep. B	200	50.0
There is specific diet required for treatment of Hep. B	224	56.0

When the participants answered  $\leq 50\%$  of questionnaire it represents poor,  $\leq 75$  it represents acceptable, >75% it represents good result. Figure 2 Show poor knowledge in 38% of outpatients about hepatitis b virus infection.



Figure 2: knowledge about hepatitis b virus infection.

The majority of respondents 72% believe they could potentially get Hepatitis B, most would seek medical attention as soon as they recognize symptoms 70%, but a substantial portion 44.3% would go directly to a hospital rather than primary healthcare or private clinics. 31% of

outpatients talk to Doctors and medical workers about illness if had hepatitis B. Regarding the cost of diagnosis and treatment, 33.3% think it's "somewhat expensive," and 28.5% believe it is "expensive," highlighting concerns about the financial burden. As in table 3.

Table 3: Attitude toward Hepatitis B among outpatient's visitors.

III-Attitude toward Hep. B:	No.	%	
Think can get Hen D	Yes	288	72.0
типк сап дет пер. в	No	112	28.0
	Fear	202	50.5
Departion if ware found that have	Surprise	110	27.5
Hop D.	Shame	36	9.0
пер. в.	Sadness	16	4.0
	Others	36	9.0
	Doctors and medical workers	124	31.0
	Spouse	104	26.0
Talls to about illness if had Han	Parents	39	9.8
P with	Children	-	-
D with,	Other family members	60	15.0
	Close friends	66	16.5
	No one	7	1.8
What will do if think have	Go to Hospital	177	44.3
symptoms of Hop B:	Go to primary health care	119	29.8
symptoms of hep. b,	Go to private clinic	104	26.0
If had symptoms of Hap D at	When own treatment fails	81	20.3
If had symptoms of hep. b, at	After 3-4 weeks of the appearance of symptoms	35	8.8
facility:	Soon as realize the symptoms are of Hep. B	280	70.0
raemty,	Will not go to physician	4	1.0
	Free	8	2.0
How expensive do think is the	Reasonable	62	15.5
diagnosis and treatment of Hep.	Somewhat expensive	133	33.3
B;	Expensive	114	28.5
	Don't know	83	20.8

	Fear of death	47	11.8
Worries most if will be	Fear of disease spread to family	186	46.5
diagnosed with Hep. B;	Cost of treatment	155	38.8
	Isolation from the society	12	3.0

Only 20.8% of outpatients have been vaccinated, and just 14.5% have undergone screening for Hep. B. However, many do take precautions in certain situations: 52.3% ask

for a new syringe or safe equipment for barbering and ear/nose piercing, and 64% ensure blood screening before transfusion. As in table 4.

### Table 4: Practice related to Hepatitis B among outpatient's visitors.

IV-Practice related to Hep. B:	No.	%
Have done screening for Hep. B	58	14.5
Have been vaccinated against Hep. B	83	20.8
Ask for a new syringe before use or barber to change blade/or for safe equipment's for ear and nose piercing	209	52.3
Ask for screening of blood before transfusion	256	64.0
In case diagnosed with Hep. B, would go for further investigation and treatment	265	66.3
Would like to get vaccinated for Hep. B free of cost	295	73.8
Have ever participated in health education program related to Hep. B	140	35.0

When the participants answered  $\leq$ 50% of questionnaire it represents poor,  $\leq$ 75 it represent acceptable,>75% it

represent good result. Figure 3 Show poor practice in 37.5% of outpatients toward hepatitis b virus infection.



Figure 3 Practices towards hepatitis b virus infection.

The socio-demographic Characteristics included (age, education, occupation, locality) significantly association with knowledge about Hepatitis B. As in table 5.

# Table 5: Association of Socio-demographic Characteristics OF Hospital Visitors and Knowledge about Hepatitis

I-Socio-demographic Characteristics of Hospital visitors			Knowledge about Hep. B (aetiology, sign & symptoms, transmission, treatment & management) (Q20)								
		Po	or	Accep	otable	Good					
		No.	%	No.	%	No.	%				
	<20years	8	5.3	8	6.6	-	-	0.0001			
	2029	82	53.9	52	42.6	70	55.6				
Age (years)	3039	54	35.5	22	18.0	48	38.1				
	4049	8	5.3	26	21.3	8	6.3				
	=>50years	-	-	14	11.5	-	-				
Gender	Male	102	67.1	82	67.2	85	67.5	0.998			
	Female	50	32.9	40	32.8	41	32.5				

	Illiterate	34	22.4	32	26.2	34	27.0	0.001
	Primary/ Read & write	48	31.6	40	32.8	30	23.8	
	Intermediate	22	14.5	30	24.6	16	12.7	
Education	High school/ vocational	14	9.2	4	3.3	14	11.1	
	Institute	-	-	-	-	4	3.2	
	College	30	19.7	16	13.1	28	22.2	
	Higher education (MSc/ PhD)	4	2.6	-	-	-	-	
	Governmental employee	26	17.1	16	13.1	20	15.9	0.0001
	Private employee	36	23.7	44	36.1	70	55.6	
	Self-employee	22	14.5	24	19.7	17	13.5	
Current occupation	Housewife	52	34.2	16	13.1	13	10.3	
	Student	16	10.5	16	13.1	6	4.8	
	Retired	-	-	4	3.3	-	-	
	Unemployed/ Not working	-	-	2	1.6	-	-	
Desidency	Urban	136	89.5	118	96.7	121	96.0	0.021
Residency	Rural	16	10.5	4	3.3	5	4.0	
Socio-economic status	Low	48	31.6	16	13.1	8	6.3	0.0001
	Middle	70	46.1	90	73.8	90	71.4	
	High	34	22.4	16	13.1	28	22.2	
*Significant difference between p	ercentages using Pearson Chi-square te	est $(\gamma^2 - te$	est) at 0.	05 leve	l and Fig	sher Ex	act test	

There is significant association between Source of Hep. B Information and Knowledge about Hep. B. As in table 6.

### Table 6: Association of Source of Hep. B Information and Knowledge about Hep. B.

Source of Hep. B	Knowledge about Hep. B (aetiology, sign & symptoms, transmission, treatment & management) (Q20)								
Information	P	oor	Acce	ptable	Go	r value			
	No.	%	No.	%	No.	%			
Radio	-	-	-	-	-	-	0.0001		
TV	4	2.6	-	-	4	3.2			
Social media	42	27.6	36	29.5	40	31.7			
Brochures & posters	42	27.6	52	42.6	46	36.5			
Health workers	8	5.3	8	6.6	12	9.5			
Family/ Friend/ Neighbors	14	9.2	12	9.8	16	12.7			
Teachers	12	7.9	10	8.2	4	3.2			
Others	30	19.7	4	3.3	4	3.2			
*Significant difference between percentages using Pearson Chi-square test ( $\chi^2$ -test) at 0.05 level and Fisher Exact test.									

The socio-demographic Characteristics included (age, gender, education, occupation, locality) significantly

association with practices towards Hepatitis B. As in table 7.

### Table 7: Association of Socio-demographic Characteristics OF Hospital visitors and Practice related Hepatitis B.

I-Socio-demographic characteristics of hospital visitors		]	Practice	es towa	rds Hep	. B (Q8	)	
		Po	Poor		ptable	Good		P value
		No.	%	No.	%	No.	%	
	<20years	4	2.7	8	5.4	4	3.9	0.015
	2029	88	58.7	58	39.2	58	56.9	
Age (years)	3039	42	28.0	54	36.5	28	27.5	
	4049	10	6.7	20	13.5	12	11.8	
	=>50years	6	4.0	8	5.4	-	-	
Condor	Male	83	55.3	110	74.3	76	74.5	0.0001
Genuer	Female	67	44.7	38	25.7	26	25.5	
	Illiterate	32	21.3	34	23.0	34	33.3	0.0001
Education	Primary/ Read & write	70	46.7	34	23.0	14	13.7	
	Intermediate	24	16.0	24	16.2	20	19.6	

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	High school/ vocational	14	9.3	10	6.8	8	7.8	
Institute		-	-	4	2.7	-	-	
	College	10	6.7	38	25.7	26	25.5	
	Higher education (MSc/ PhD)	-	-	4	2.7	-	-	
	Governmental employee	10	6.7	32	21.6	20	19.6	0.0001
	Private employee	52	34.7	36	24.3	62	60.8	
	Self-employee	23	15.3	40	27.0	-	-	
Current occupation	Housewife	43	28.7	26	17.6	12	11.8	
	Student	20	13.3	10	6.8	8	7.8	
	Retired	-	-	4	2.7	-	-	
	Unemployed/ Not working	2	1.3	-	-	-	-	
Locality	Urban	133	88.7	144	97.3	98	96.1	0.005
Locality	Rural	17	11.3	4	2.7	4	3.9	
	Low	42	28.0	18	12.2	12	11.8	0.0001
Socio-economic status	Middle	98	65.3	88	59.5	64	62.7	
	High	10	6.7	42	28.4	26	25.5	
*Significant difference b	etween percentages using Pearson Cl	hi-squa	re test (	$\chi^2$ -test)	at 0.05 1	evel ar	nd Fishe	er Exact test

There is significant association between practices towards Hepatitis B and knowledge about Hepatitis B virus among outpatient's visitors. As in table 8.

Table 8: C	<b>Correlation between</b>	<b>Practices and</b>	<b>Knowledge about</b>	Hepatitis B.
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Practices towards Hep. B (Q8)	Knowledge about Hep. B (etiology, sign & symptoms, transmission, treatment & management) (Q20)						Develop
	Poor		Acceptable		Good		P value
-	No.	%	No.	%	No.	%	
Poor	68	44.7	56	45.9	26	20.6	0.0001
Acceptable	60	39.5	38	31.1	50	39.7	
Good	24	15.8	28	23.0	50	39.7	

## DISCUSSION

This study provides a detailed insight into the knowledge, attitudes, and practices (KAP) regarding Hepatitis B virus (HBV) infection among outpatient visitors in Baghdad, Iraq. The majority of respondents belonged to the middle socioeconomic class, possibly due to better access to healthcare services and more flexible work schedules. The predominance of male participants mirrors findings from a similar study conducted in Pakistan<sup>[18]</sup>, likely reflecting societal norms that grant men greater autonomy in seeking medical care. Notably, brochures and posters were cited as key sources of HBV information for nearly one-third of participants, highlighting the ongoing role of passive health education materials. With respect to knowledge, the study found that while over half of the participants could identify jaundice as a primary symptom of HBV, gaps remained regarding other transmission routes and prevention. Although 55% were aware of transmission through barber blades and piercings, fewer than half knew that HBV could be transmitted via sexual contact, mother-tochild transmission, or contaminated food and water. Misconceptions such as the belief that HBV is selfcurable and lack of awareness about vaccination reflect significant educational shortcomings. These findings are comparable to those reported in Pakistan<sup>[18]</sup>, suggesting that the lack of structured health education programs, combined with stigma, low literacy, and insufficient

funding, are major contributing factors to poor knowledge. Regarding attitudes, only 31% of HBVpositive patients discussed their condition with healthcare providers. More than half sought care promptly upon symptom onset, but fewer were inclined to visit hospitals, possibly due to perceived inadequacies in care. Furthermore, nearly two-thirds of participants expressed concern over the high cost of diagnosis and treatment, which may hinder timely intervention and continuity of care. These attitudes align with global findings that show cost and perceived quality of care as influential factors in health-seeking behavior.[19] Practices towards HBV prevention were notably poor in this study. The majority of respondents had never been screened for HBV, and less than two-thirds had received the vaccine. These findings are lower than those reported in Cameroon (26.05%)<sup>[20]</sup>, Bangladesh (23.5%)<sup>[21,22]</sup>, and Ethiopia.<sup>[23]</sup> The low screening and vaccination rates likely reflect poor knowledge and low perceived risk, further emphasizing the need for targeted educational interventions. A similar pattern of poor practice was also noted in Malaysia<sup>[24]</sup>, reinforcing the global challenge of translating knowledge into action. Statistically, this study found significant associations between KAP scores and sociodemographic variables, including age, occupation, education, and locality. These associations were not observed in studies from Sudan<sup>[25]</sup> and Iraq<sup>[26]</sup>, but they align with findings from Pakistan.<sup>[18]</sup> The correlation

between higher socioeconomic status and better knowledge may be attributed to increased health literacy, while older age groups may lack exposure to recent health campaigns. The gender gap also highlights structural barriers that limit women's access to health information and preventive services. Finally, the strong positive correlations between knowledge, attitude, and practice underscore the interdependent nature of these constructs in influencing behavior. These results echo findings from India<sup>[27]</sup>, where improved knowledge translated into more positive attitudes and better preventive practices. Therefore, comprehensive public health strategies that address all three components of KAP are essential for controlling the spread of HBV.

### CONCLUSION

In summary, the study's findings show lack of good knowledge and practice regarding Hepatitis B virus infection in more than two third of the outpatient visitors.

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