ORIGINAL ARTICLE

Assessment of knowledge, Attitude, and Practice of Patients with Chronic Hepatitis B Viral Infection in Kurdistan Region: A Cross-Sectional Study

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ABSTRACT

Background: The basic information that can be obtained from patients with HBV infection knowledge, attitude, and practice can be important tool to design effective health policies for the health care facilities and for the community.

Aim: To assess the knowledge, attitude, and practice among Hepatitis-B patients in Sulaimani Governorate/ Kurdistan Region of Iraq.

Methodology: A descriptive cross sectional study was performed on Hepatitis-B virus patients (n=312) attending the gastrointestinal and liver centre in Sulaimani city between 16 July and 12 September 2020. The knowledge, attitude, and practice of patients with HBV infection were evaluated using a structured questionnaire (attached file) containing 23, 7 and 15 questions for knowledge, attitude and practice, respectively. Besides, the questionnaire has 7 demographic data. **Results:** More than 55% have fair or good knowledge but still 44% were with poor knowledge. Highest proportion of the patients (58%) had fair attitude toward HBV infection, also less than half of the patients (42%) had good attitude, while few percentage of the patients (0.3%) had poor attitude. Most of the HBV patients (92.3%) have either poor or fair practices, while only 7.6% of them have good practice.

Conclusion: The highest percentages of HBV patients in Sulaimani city have poor knowledge, fair attitude, and poor practice.

Keywords: Hepatitis B virus, Knowledge, Attitude, Practice, Sulaimani City

INTRODUCTION

In spite of the presence an effective and safe vaccine against Hepatitis B virus (HBV), the infection with this virus is still a significant public health issue, and it is estimated that nearly one third of world population is infected with HBV, and more than three hundred millions have chronic hepatitis B viral infection, and thousands of the patients are at the risk of developing complications such as liver cirrhosis and liver cancer¹.

The prevalence of chronic HBV infection is varying among different countries and can range from 0.5% in one region up to 20% in another². In the Eastern Mediterranean Region, it has been estimated that HBV infection has a prevalence rate of 3.3%³. In Iraq, HBV infection is not uncommon, and a prevalence rate of 1.6% was calculated in the years 2005 and 2006; and since that time no new large survey among all the 18 Iraqi governorates was carried out ⁽⁴⁾. In Kurdistan Region of Iraq, the prevalence rate of HBV infections is nearly similar to the rest of Iraq⁵.

HBV infection has psychological and social consequences on the patient, the disease can run in a chronic and asymptomatic course; it is mostly diagnosed during screening for interventional medical techniques like surgical operation or during screening for marriage or applying for a job and it will cause a negative psychological issue for the patient and his relatives. HBV infection is contagious and can be transmitted through body fluids especially blood, prenatal transmission, during breastfeeding, or through sexual contact⁶.

The basic information that can be obtained from patients with HBV infection knowledge, attitude, and practice can be important tool to design effective health policies for the health care facilities and for the community. The accurate knowledge, feelings, and tendencies about HBV patients about their disease will improve their attitude to follow the correct practicing methods that can touch better self-health and prevent the transmission of HBV to others⁷.

Up to date, in Iraq, including Kurdistan Region, the HBV patients' information about the Knowledge, attitude, and practice regarding HBV infection has not been identified previously. The objectives of this study are to assess the knowledge, attitude, and practice among Hepatitis-B patients in Sulaimani Governorate/Kurdistan Region of Iraq.

MATERIALS AND METHODS

A descriptive cross sectional study was performed on Hepatitis-B virus patients attending the gastrointestinal and liver centre in Sulaimani city between 16 July and 12 September 2020. Sulaimani governorate is the most populous governorate in Kurdistan Region of Iraq with a population near 2 million in 2018. Rapid growth and development was the remark in the last decade in the governorate with large number of refugees from Syria and internally displaced people from Iraq. The inclusion criteria for people enrolled in this study were patients with chronic HBV confirmed by laboratory HBV markers with HbsAg positive for more than 6 months. The total number of HBV patients participated in this study was 312 patients. HBV patients who refuse to answer or did not answer all the questions were uninvolved in this survey. The knowledge, attitude, and practice of patients with HBV infection were evaluated using a structured questionnaire (attached file) containing 23, 7 and 15 questions for knowledge, attitude and practice, respectively. Besides, the questionnaire has 7 demographic data.

The questionnaire was validated before it was applied in this survey study. The patients demographic data and the mean scores of knowledge, attitude and practice were recorded then analyzed by Mann–Whitney U test and Kruskal Wallis tests, p < 0.05 and the association between knowledge, attitude and practice were measured using Spearman's rho correlation. Ethical approval was obtained from the ethical committee in Sulaimani polytechnic university and a verbal consent was obtained from each patient participated in this study.

RESULTS

Demographics of the patients: We asked 376 patients with chronic HBV infection to participate in this study, 359 patients agreed to participate, however, only 312 of them answered the questionnaire, with a response rate of 86.9%.

Table 1: The Demographics of the patients with chronic HBV infection

Variable	Frequency	%
Age		•
Mean ± SD	36.8 ± 1	0.72
18 - 30 years	100	32.1
31- 40 years	94	30.1
41 -50 years	79	25.3
51 -61 years	39	12.5
Gender		
Male	244	78.2
Female	68	21.8
Marital status		
Single	73	23.4
Married	220	70.5
Divorce	12	3.8
Widow	7	2.2
Education level		
Illiterate	95	30.4
Primary	118	37.8
Secondary	10	3.2
Preparatory	27	8.7
University degree	62	19.9
Occupation		
Government employee	34	10.9
Private sector employee	147	47.1
Self-employed	49	15.7
Retired	80	25.6
Others (housewife, unemployed)	2	0.6
Income		
<300\$ per month	47	15.1
300-900 \$ per month	161	51.6
≥1000\$ per month	104	33.3
Residency		
City centre	209	67.0
District	81	26.0
Village	22	7.1
Total	312	100%

The number of males (n=244) was much higher than females (n=68), with a rate of 3.6:1; the mean age of the patients was 36.8 ± 10.72 years and the predominant age group is 18 - 30 years [n=100 (32.1%)]. Most of the patients were married [n=220, 70.5%] and 68.2% were

either illiterate or with only primary school educational level, 147/312 of the patients were working in private sector; More than half of the patients (51.6%) had fair income status with 300-900 USA\$ per month. The highest percentage (67%) of the patients was living in Sulaimani city centre, table 1.

The knowledge of chronic HBV patients towards their disease: The knowledge of chronic HBV patients was assessed by questions concentrating on etiological agent of the disease, mode of transmission, effect on the body, clinical features, diagnosis, management, and its control and prevention, as mentioned in table 2.

Table 2: The Knowledge of the patients enrolled in the study towards $\underline{\mathsf{Hepatitis}}\ \mathsf{B}$ infection

Hepatitis B Infection			
Knowledge	Frequency	%	
Have you ever heard of a disease termed as Hepatitis?			
Yes	44	14.1	
No	121	38.8	
Not sure	147	47.1	
Do you know the nature of the disease	e?		
Yes	99	31.7	
No	123	39.4	
Not sure	90	28.8	
Did your physician describe mode of	transmission?		
Yes	47	15.1	
No	182	58.3	
Not sure	83	26.6	
Did your physician describe the conse	equences of HE	3V?	
Yes	50	16	
No	181	58	
not sure	81	26	
Is HBV disease a viral disease?			
Yes	111	35.6	
No	135	43.3	
Not sure	66	21.2	
Can Hepatitis B affect liver function?			
Yes	81	26.0	
No	151	48.4	
not sure	80	25.6	
Can Hepatitis B cause liver Cancer?			
Yes	197	63.1	
No	65	20.8	
Not sure	50	16.0	
The early symptoms of Hepatitis B are	e same like colo	and flu (fever,	
running nose, cougn)	40	45.7	
Yes	49	15.7	
NO Nat aug	160	51.3	
Not sure	103	33.U	
Jaundice is one of the common symp		IS D (
tes	107	03.0	
NO Not outro	119	36.1	
Are nauces, vemiting and less of ann	20	0.3	
Honotitic R2	ente common s	ymptom or	
	00	20.0	
tes No.	90	30.8	
Not ouro	190	02.0	
Not sure	20 20	0.4	
above symptoms?	ou surrerea froi	in any of the	
Voc	03	20.8	
No	200	23.0	
Not sure	10	3.2	
Can Henatitis B he transmitted by un-	sterilized svrin	ues needles and	
surgical instruments?			
Yes	146	46 79	
No	51	16 35	
Not sure	115	36.86	
Can Henatitis B be transmitted by con	taminated bloc	d and blood	
products?			
Yes	257	82.4	
No	44	14.1	
Not sure	11	3.5	
		5.0	

Can Hepatitis B be transmitted by using blades of the barber/ear and			
nose piercing?			
Yes	34	10.9	
No	243	77.9	
Not sure	35	11.2	
Can Hepatitis B be transmitted by uns	safe sex?		
Yes	74	23.7	
No	194	62.2	
Not sure	44	14.1	
Can Hepatitis B be transmitted from r	nother to child	?	
Yes	38	12.2	
No	146	46.8	
Not sure	128	41.0	
Can Hepatitis B be transmitted by con	ntaminated wat	er/food prepared	
by person suffering with these infecti	ons?		
Yes	13	4.2	
No	198	63.5	
Not sure	101	32.4	
Is Hepatitis B curable / treatable?			
Yes	252	80.8	
No	18	5.8	
Not sure	42	13.5	
Can Hepatitis B be self-cured by body?			
Yes	153	49.0	
No	29	9.3	
Not sure	130	41.7	
Is vaccination available for Hepatitis	B?		
Yes	172	55.1	
No	97	31.1	
Not sure	43	13.8	
Did you receive an advice from physician to vaccinate your family members?			
Yes	255	81.7	
No	23	7.4	
Not sure	34	10.9	
Is specific diet required for the treatment	ent of Hepatitis	s B?	
Yes	132	42.3	
No	44	14.1	
Not sure	136	43.6	
Do you have family history of HBV?			
Yes	8	2.6	
No	243	77.9	
Not sure	61	19.6	
	-		

A correct answer was given 2 score, 1 score for fair answer, while a zero score was given for false answer; the maximum score was 23 while the minimum was zero, total ≥32.2 score was considered as good knowledge, also the score between 23.1-32.1 was counted as fair knowledge, and poor knowledge score was <23. More than 55% have fair or good knowledge but still 44% were with poor knowledge (table 3).

Table 3: The freque	ncy and percentage of HBV p	patients according
to their knowledge	scores	

knowledge score	Frequency	%age
Poor	139	44.6
Fair	121	38.8
Good	52	16.7
Total	312	100.0

The attitude of chronic HBV patients towards their diseases: The HBV patients answered 7 questions to assess their attitude towards HBV infection, as described in table 4. The questions were scored from zero, one, or two for poor, fair and good attitude respectively. The highest score was 11, while the minimum score was 0. A range 0-6 was considered as poor attitude, while 6-8 and >8 were as fair and good attitudes respectively. All HBV patients never

expected getting infected with virus. Also, (42.8%) of the patients shied when they discovered having the disease and more than half of the patients (59%) talked with their spouses about their infection. Some of the patients preferred consulting a private clinic (49%) while the remaining 51% patients visited governmental health facility. Most of the patients (55.4%) thought that medication price was affordable. Furthermore nearly half of the patients (48.7%) were worried about spreading the disease to their family members; Highest proportion of the patients (58%) had fair attitude toward HBV infection, also less than half of the patients (42%) had good attitude, while few number of the patients)0.3) had poor attitude (table 4 and 5).

Table 4: The attitude of HBV patients

	Frequency	%
Did you ever think that you will be	infected with HE	SV?
Yes	0	0.0
No	312	100
What was your response when you HBV?	I know that you	have
Feared	57	18.3
Shied	133	42.6
Surprised	122	39.1
With whom you talked first about y	our disease?	
Doctor	44	14.1
Spouse	186	59.6
Parents	60	19.2
No one	22	7.1
What was your action when you kr	new your infection	on with
HBV?	-	
Went to health facility	111	35.6
Went to disease control and	48	15.4
prevention centre		
Went to a private clinic	153	49.0
At which stage of disease you sou	ght medical serv	/ice?
Own treatment fails	16	5.1
After 3–4 weeks of the appearance	35	11.2
of symptoms		
Soon as I realize the symptoms are	261	83.7
of Hepatitis B		
Do you think that the cost HBV ma	nagement is hig	h?
Free	6	1.9
Reasonable	173	55.4
Somewhat expensive	75	24.0
Don't know	58	18.6
What was your distress when you	know you have	HBV?
Fear of death	89	28.5
Fear of disease spread to family	152	48.7
Cost of treatment	27	8.7
Isolation from community	44	14 1

Table 5: The distributions of different attitude scores among the study group

Attitude	Score	Frequency	%age
Poor	<4	1	0.3
Fair	6-8	180	57.7
Good	>8	131	42.0
	Total	312	100.0

The practices of patients towards their HBV infections: The patients were asked 15 questions related to their practices toward their HBV infections; the actions that have the risk of HBV transmission were scored 0 and regarded as poor practice while those actions were the transmission in unlikely were scored 2 and considered as good practice, the actions between the above were scored 1 and mentioned as fair practice. The best good practice was having a score of 23; a total practice with a score below 12 was considered as poor practice, while practices with scores between 12 and 16 was deemed as far, whereas a total score for a patient above 16 was good practice (tables 6 and 7). Most of the respondents (90.1%) did not receive blood previously and only 3% out of those who received blood were sure about viral screen before receiving blood. Viral screening done before dental procedures was the main method (40.7%) of discovering their HBV infections. The highest percentage (46.8%) of the patients was asking the barber to use disposable razor; the majority of the patients (77.9%) didn't request the new instruments for piercing their nose or ears. Only 5.4% of the patients used condoms during sexual intercourse. The utensils of 61.2% of patients were unused by others; about 80% of patients were on continuous regular treatment. 73.1% of the patients informed their employers about their diseases and nearly all (99.6%) of the employers were having positive responses to their employees HBV infections. Most of the participants 281(90.1%) were not sure if they were tested for anti-HBsAbs and 78.8% of the patients did not receive health education and 55.1% did not avoid people contact 172, table 6. Most of the HBV patients (92.3%) have either poor or fair practices, while only 7.6% of them have good practice, table 7.

Practice	Frequency	%
Have you received blood previously?		
Yes	31	9.9
No	281	90.1
Did you ask about blood test before blo	ood transfusion?	
Yes	3	9.7
No	12	38.7
Not sure	16	51.6
How you discovered that you have HB	/?	
Blood donation	66	21.2
Marriage screening	1	0.3
Pre-surgical screening	72	23.1
Pre- dental procedure screening	127	40.7
General routine investigations	46	14.7
For male patients, did you ask your ban razor?	ber to use dispo	sable
Yes	114	46.8
No	40	16.3
Not sure	90	36.9
Did you request the use of unused inst your nose or ears?	rument for pierci	ng of
Yes	34	10.9
No	243	77.9
Not sure	35	11.2
Did you use Condoms?	-	
Yes	17	5.4
No	295	94.6
Did other people use your utensils?		_
Yes	93	29.8
No	191	61.2
Not sure	28	9.0

Did you avoid people contact?		
Yes	64	20.5
No	172	55.1
Not sure	76	24.4
Did you take the treatment completely?		
Yes	251	80.4
No	61	19.6
Are you continuing on your treatment?		
Yes	251	80.4
No	61	19.6
Did you participate in health education a	bout HBV?	
Yes	66	21.2
No	246	78.8
Have your family member been tested for	or HBV?	
Yes	31	9.9
No	264	84.6
Not sure	17	5.4
Have any of your family members been the antibodies?	tested for anti- H	BV
Yes	19	6.1
No	12	3.8
Not sure	281	90.1
Did you inform your Employer that you I	have HBV?	
Yes	228	73.1
No	84	26.9
If yes, what was their response?		
Grant me leave for treatment	98	43.0
Fired me	0	0.0
Changed my work	1	0.4
Helped me	129	56.6
	228	

Table 7: Assessment of patients practices towards their HBV infections

Practice	Score	Frequency	%age
Poor	<12	149	47.8
Fair	12-16	139	44.6
Good	>16	24	7.6
Total	23	312	100.0

The association of demographic characteristics and knowledge scores is mentioned in table 8. Age, gender, marital status, educational level, occupation, and residency were statistically significant (p<0.05) when compared to the HBV patients' knowledge score; only the income of the patients was not statistically significant related to knowledge score of them.

The attitude scores were statistically significant with gender, marital status, and residency; while the other demographic data including age, educational level, occupation, and the income of patients were statistically, insignificantly, associated to attitude score, table 9.

The age, marital status, and residency were statistically insignificant when compared to practice scores of the participants, while gender, educational level, occupation, and income were significantly associated (p<0.05) with practice scores as described in table 10.

The associations between the knowledge score and the attitude or practice scores revealed a significant association (p<0.05) among them as mentioned in table 11.

Table 8: Association between Knowledge and Demo	graphic Variables
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Variables		Knowledge score			Total	P-value
		Poor	Fair	Good		
Age	18-30 Years	37	43	20	100	0.02
	31-40 Years	52	29	13	94	
	41-50 Years	33	36	10	79	
	51-61 Years	9	21	9	39	

Gender	Male	78	122	44	244	<0.001
	Female	45	15	8	68	
Marital	Single	21	35	16	72	< 0.001
status	Married	105	85	31	221	
	Divorce	3	6	3	12	
	Widow	2	3	2	7	
Education	Illiterate	40	39	16	95	<0.001
level	Primary	46	39	33	118	
	Secondary	3	6	1	10	
	Preparatory	14	11	2	27	
	University degree	36	26	0	62	
Occupation	Government employee	14	11	9	34	0.03
	Private sector employee	67	62	18	147	
	Self-employed	14	26	9	49	
	Retired	42	22	16	80	
	Others (housewife, unemployed)	2	0	0	2	
Income	<300\$ per month	21	20	6	47	0.17
	300-900 \$ per month	69	57	35	161	
	>1200\$ per month	49	44	11	104	
Residency	Governorate (city centre)	106	77	26	209	0.001
	District	22	34	25	81	
	Village	11	10	1	22	

Table 9: Association between Attitude and Demographic Variables

Demographic variable			Attitude so	ore	Total	P value	
	Poor	Fair	Good				
Age	18-30	12	57	31	100	0.882	
-	31-40	13	52	29	94		
	41-50	9	40	30	79		
	51-61	3	21	15	39		
Gender	Male	25	143	76	244	0.018	
	Female	12	27	29	68		
Marital status	Single	9	38	26	73	0.025	
	Married	26	128	66	220		
	Divorced	2	3	7	12		
	Widowed	0	1	6	7		
Education level	Illiterate	13	52	30	95	0.061	
	Primary	9	73	36	118		
	Secondary	3	3	4	10		
	Preparatory	1	17	9	27		
	University degree	11	25	26	62		
Occupation	Government employee	5	21	8	34	0.48	
	Private sector employee	16	75	56	147		
	Self-employed	9	26	14	49		
	Retired	7	46	27	80		
	Others (housewife, unemployed)	0	2	0	2		
Income	<300\$ per month	5	25	17	47	0.47	
	300-900 \$ per month	19	95	47	161		
	>1200\$ per month	13	50	41	104		
Residency	Governorate (city centre)	27	104	78	209	0.02	
-	District	7	57	17	81		
	Village	3	9	10	22		

Table	10. Association	hetween	practice	score an	nd demogra	nhic vari	iahles
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	data		Practice score	Total	P value	
		Poor	Fair	Good		
Age	18-30 Years	11	77	12	100	0.24
	31-40 Years	8	74	12	94	
	41-50 Years	9	50	20	79	
	51-61 Years	4	29	6	39	
Gender	Male	31	172	41	244	0.01
	Female	1	58	9	68	
Marital status	Single	4	55	14	73	0.38
	Married	27	160	33	220	
	Divorced	1	8	3	12	
	Widowed	0	7	0	7	
Education level	Illiterate	4	68	2	74	0.001
	Primary	3	79	5	87	
	Secondary	4	11	5	20	
	Preparatory	9	17	15	41	
	University degree	12	55	23	90	
Occupation	Government employee	6	20	8	34	< 0.001
	Private sector employee	9	112	26	147	
	Self-employed	9	34	6	49]
	Retired	6	64	10	80	

	Others (housewife, unemployed)	2	0	0	2	
Income	< 300\$ per month	6	35	6	47	0.02
	300-900 \$ per month	12	118	15	145	
	>1200\$ per month	14	77	29	120	
Residency	Governorate (city centre	20	153	36	209	0.65
	District	11	59	11	81	
	Village	1	18	3	22	
	Total	32	230	50	312	

Table 11: The relation between knowledge scores and the attitude and practice scores

		Knowledge			Iotal	P value
		Poor	Fair	Good		
Attitude	poor	21	13	3	37	< 0.001
	fair	62	60	48	170	
	good	56	48	1	105	
Practice	poor	5	16	11	32	0.004
	fair	111	84	35	230	
	good	23	21	6	50	

DISCUSSION

This study sought to assess KAP of HBV patients towards their infections. Upon searching in medical journals search engines, including Thomson Reuters, US National Library of Medicine journals, Elsevier's, and Cochrane the KAP among HBV patients was not done before only in only two studies ^(8, 9). In the current study, the highest percentages the patients were with poor knowledge, fair attitude, and poor practice. More than 75% of the patients either do not know or not sure about the nature of their diseases or its causative agent, and this was worsen by poor doctor explanation about their HBV infections and its mode of transmission.

More than two third of HBV patients do not know the early symptoms or the gastrointestinal tract symptoms of the disease but nearly 50% can recognize the jaundice as a significant symptom; these data about HBV clinical features reflect their poor knowledge in their HBV infections. The majority of the patients knows that this infections can be transmitted through blood but only <25% of them knew that it can be transmitted through sex, using blades of the barber/ear and nose piercing. or from mother to child; this low awareness in HBV mode of transmission has a negative impact on disease transmission in the community. 80% of patients said that HBV is curable but when asked about self-cure only 49% recognize this fact, the same impression was got when they were asked about vaccination, and this uncertainty in knowledge is due to absence of health education programs for HBV patients. These results are consistent with a study reported in Pakistan (8) among HBV patients. Globally, poor knowledge was also reported among general population¹⁰⁻ ¹²; however, there are little studies regarding KAP of HBV patients worldwide and no data were recorded previously in Irag or in Kurdistan Region of Irag.

On the contrary, the attitude score was fair or high in nearly all (99.7%) the participants. They did not hide their disease to others and quickly consulted the medical professionals for help, and they were concerned about disease transmission to others. The attitude results were in part against the results reported in two Pakistani studies ^(8, 13).

Nearly half of the patients had poor practice towards HBV infection. Screening for HBV before medical procedures was the main method of diagnosis their infection especially

screening before dental procedures. Many male patients did not ask the barbers to use disposable razor. The practice of piercing of the nose or ears is not a prominent one, so the patients did not request the use of unused instrument for piercing. The majority of the patients did not show a concern to the use of condom during sexual intercourse which exposes the partner to the danger of HBV transmission, this unsafe sex practice was also reported by UI Haq N, *et al*⁶.

Six demographic parameters were considered in this study, age, gender, marital status, family income, educational level, and residency; all of them except family income were significantly associated to knowledge of HBV patients; the gap in knowledge emphasizes the needs to improve the HBV health education among infected patients. In contrast to our results, Mursy, *et al* ⁽¹⁴⁾, found that age, occupation, educational degree where not related to the HBV knowledge among nurses in Sudan.

In the current study, the gender, marital status, and patients' residency were significantly associated with patients' attitude score towards HBV infection, while UI Haq, *et al.* found that education, occupation, and locality are related to HBV patients' attitude⁸. The majority of HBV patients, whether males or females, single, married, divorced, or widowed, were having fair or good attitude towards their disease, the same results were obtained when we assessed the patients' locality as most of them wherever they live in urban or rural areas were having fair and good attitude for HBV infection.

The gender, occupation, educational level, and patients' incomes were significantly associated with patients' practices towards HBV infections, while UI Haq, *et al.* found that occupation, educational level, and locality were significantly associated with HBV patients practice⁸. The poor practice was more among males than females; this might be due to higher frequency of infections among males than females, or more job responsibilities of males in Sulaimani governorates, which make them of less practical concern. Surprisingly, the percentage HBV patients with the highest monthly income were the predominant among poor and the good practices.

CONCLUSION

The highest percentages of HBV patients in Sulaimani city have poor knowledge, fair attitude, and poor practice.

There is a need to improve the health educations among HBV patients by providing well-trained health workers to improve the knowledge of the patients and the physicians should participate in this health education to the patients towards their disease. All these measures will augment the HBV control measures Among HBV patients in Sulaimani city

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