KAP STUDY

Knowledge, attitude and practice of nursing staff regarding hepatitis B at Kut city, middle Iraq

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Abstract

Objective: To assess the level of knowledge, attitude and practice of nursing staff towards hepatitis B virus infection.
Method: The cross-sectional study was conducted at three hospitals in Kut, Iraq, in July 2020, and comprised nursing staff regardless of age and gender. Data was collected using a predesigned questionnaire exploring demographic details as well as knowledge, attitude and practice of the nursing staff regarding hepatitis B virus infection. Data was analysed using SPSS 21.
Result: Of the 3,008 nurses, 341(11.33%) were randomly enrolled; 170(49.9%) males and 171(50.1%) females. There were 140(41.1%) subjects aged 20–30 years, while 16(4.7%) were aged ≥50 years. The mean knowledge score was 22.22±2.79 (range: 18-35 years), indicating better knowledge. The mean attitude score was 19.23±2.74 (range: 11-26), indicating positive attitude. The mean practice score was 13.04±1.84 (range: 8-17) indicating good practices.
Conclusion: The knowledge level related to hepatitis B virus among the nursing staff was good. Overall improvement related to knowledge, attitude and practice among the nursing staff was needed.
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Introduction

The term hepatitis refers to an inflammation in the liver cell.[1] Hepatitis B (HB) is life-threating disease produced by hepatitis B virus (HBV).[2] HBVs are hepatotropic, non-cytopathic viruses which can cause liver cirrhosis and hepatic carcinoma.[3] HB is considered one of most important public health problems in the world, especially in the developing countries.[4] About 2 billion people globally are exposed to the HBV infection and around 350 million are with chronic infection.[5] According to the Centre for Disease Control and Prevention (CDC), it was estimated that 1 of 20 persons have infection with HBV.[6] In Iraq, HB has moderate endemicity with 3% infection rate[7]. The transmission of HBV occurs via body fluids, including blood and serum. Also, it can be transmitted vertically through diffusion from mother to child. In addition to unsafe injections, including intravenous (IV), drugs are common routes for HBV infection[2]. In healthcare settings, blood and its products are the major vehicles of transmission. Exposure at workplace to HBV infection is most common among healthcare providers (HCPs) through daily work activities by handling biomedical wastes, blood, and/or its products. Globally, there are approximately 35 million healthcare workers (HCWs) infected with HBV. It has been established that about 66,000 HB viral infections are caused by needle stick injuries yearly.[8,9,10] Prevention of infection is focussed on vaccination of high-risk groups, especially those among them who are working in the field of healthcare.[11]

The current study was planned to assess the level of knowledge, attitude and practice (KAP) of nursing staff towards HBV infection, and to promote preventive measures that could help HCWs to avoid the infection and its effects.

Subjects and Methods

The cross-sectional KAP study was conducted at three hospitals in Kut, Iraq, in July 2020. The sample comprised nursing staff regardless of age and gender working at Al-Zahraa Teaching Hospital, Al-Karama Hospital and Al-Kut Hospital. The subject were randomly enrolled. The sample size was estimated by online sample size calculator.[12] In order to reach the targeted number, it was decided to recruit a specific number of nurses from each hospital after taking informed consent from each subject.

Data was collected using a predesigned questionnaire. The questionnaire consisted of four parts. Part I focussed on socio-demographic characteristics of the participants, including age, gender, education, duration of work and their sources of information about HB. Part II had 12 questions related to knowledge, part III had 10 questions about attitude regarding HB, and part IV had 8 questions focussing on practices.

The self-administered questionnaires were distributed among the participants during their rest time, and they were briefed about the technical terms used and how to answer each query.

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Prior to the commencement of the study, an agreement was reached and a contract was signed with the Wasit Health Department for Training and Human Development Centre Questionnaire. The ethical approval was obtained from the Kut Health Office. The questionnaire was first checked by an expert panel. A pilot study was then conducted and Cronbach alpha value of 0.82 indicated good reliability. The questionnaire was generated in English, then translated into plain Arabic before being used to collect data, and then translated back into English.

The exclusion criteria was nurses who had less than 6 months of experience and those who were less than 20 years age.

The range of knowledge scores was 12-62, and knowledge score <20.6 was considered indicative of poor knowledge, while score up to 41 indicated moderate knowledge, and >41indicated high knowledge. Attitude scores ranged 10-30, with scores 30, 20 and 10 indicating good, moderate and bad attitude, respectively. Practices scores ranged 8-24, and they were categorised as good, moderate and bad.

Data was analysed using SPSS 21. Descriptive statistics were used, and analysis of variance (ANOVA) was used to assess differences. Chi-square test was used to find a link between KAP and demographic factors. The influence of socioeconomic and demographic factors on KAP was investigated using ordinary least square (OLS) regression analysis (Figure 1).

Results

Of the 3,008 nurses, 341were randomly enrolled; 170(49.9%) males and 171(50.1%) females. Of the total, 114(33.3%) were from each of the 2 hospitals and 113 (33.1%) from the third hospital. There were 140(41.1%) subjects aged 20-30 years, while 16(4.7%) were aged ≥50 years. In terms of education, 119(39.4%) respondents had nursing school degree, followed by 125(36.7%) had an institute degree, and 97(28.4%) had college degree. Most of the respondents 195(57.2%) had less than 5 years of work experience, 50(14.7%) had >11 years of experience (Table 1).

The mean knowledge score was 22.22±2.79 (range: 18-35), mean attitude score was 19.23±2.74 (range: 11-26), and the mean practice score was 13.04±1.84 (range: 8-17), indicating good practices (Table 2).

A significant difference was found between knowledge and all the demographic variables (p<0.05) (Table 3). There was a significant difference between demographic variables and attitude score (p<0.05) (Table 4). Also, there was a significant difference in practice score in relation to all the demographic variables (p<0.05) (Table 5).

Gender, age, educational level, and work experience were significantly associated with knowledge, attitude and practice related to HB (p<0.05) (Table 6).

Regression analysis Showed that high scores implied increased KAP, and that had significant association with most socio-demographic variables (Table 7).

There was a significant association of nursing knowledge with age, gender and work experience (p<0.05), while there was no significant association between education and nursing knowledge, and of work experience with attitude and practice (Table 8).

Multivariate analysis showed significant association of age, gender, education and work experience with KAP (Table 9).

Table-1: Demographic data.

Variables	n (%)
Age	
20-30	140 (41.1)
31-40	104 (30.5)
41-50	81 (23.8)
< 50	16 (4.7)
Gender	
Male	170 (49.9)
Female	171 (50.1)
Education	
Nursing school	119 (34.9)
Institute	125 (36.7)
College	97 (28.4)
Years of Work	
> 5 Years	195 (57.2)
5 - 10 Years	96 (28.2)
< 11 Years	50 (14.7)

Table-2: Knowledge, attitude and practice (KAP) scores.

Variables	Mean ± SD	Min	Max
Knowledge score	22.22 ± 2.79	18	35
Attitude score	19.23 ± 2.74	11	26
Practice score	13.04 ± 1.84	8	17

SD: Standard deviation.

Table-3: Association of overall knowledge scores with demographic characteristics.

Variables		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	57.885	12	4.824	7.033	0.000
	Within Groups	224.977	328	.686		
	Total	282.862	340			
Gender	Between Groups	19.340	12	1.612	8.020	0.000
	Within Groups	65.910	328	.201		

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Table-3: *continued from previous page*

Variables		Sum of Squares	df	Mean Square	F	Sig.
	Total	85.249	340			
Education	Between Groups	39.367	12	3.281	6.141	0.000
	Within Groups	175.213	328	.534		
	Total	214.581	340			
Work Experience	Between Groups	38.798	12	3.233	7.337	0.000
	Within Groups	144.545	328	.441		
	Total	183.343	340			

Table-4: Association of overall practice scores with demographic characteristics.

Variables		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	73.220	13	5.632	8.785	0.000
	Within Groups	209.642	327	.641		
	Total	282.862	340			
Gender	Between Groups	12.428	13	.956	4.293	0.000
	Within Groups	72.821	327	.223		
	Total	85.249	340			
Education	Between Groups	37.664	13	2.897	5.355	0.000
	Within Groups	176.917	327	.541		
	Total	214.581	340			
Work Experience	Between Groups	21.406	13	1.647	3.325	0.000
	Within Groups	161.937	327	.495		
	Total	183.343	340			

Table-5: Association of overall practice scores with demographic characteristics.

Variables		Sum of Squares	df	Mean Square	F	Sig.
Age	Between Groups	99.701	9	11.078	20.019	
	Within Groups	183.161	331	.553		
	Total	282.862	340			
Gender	Between Groups	7.911	9	.879	3.762	
	Within Groups	77.338	331	.234		
	Total	85.249	340			
Education	Between Groups	69.865	9	7.763	17.756	
	Within Groups	144.715	331	.437		
	Total	214.581	340			
Work Experience	Between Groups	36.145	9	4.016	9.031	
	Within Groups	147.198	331	.445		
	Total	183.343	340			

Table-6: Association of social and demographic characteristics with overall mean scores.

Characteristic	Knowledge score		Attitude score		Practice score	
Gender	Mean ± SD	*p*-value	Mean ± SD	*p*-value	Mean ± SD	*p*-value
Male	21.42 ± 1.99	0.000	19.21 ± 2.75	0.000	12.86 ± 1.83	0.000
Female	23.01± 3.22		19.25± 2.74		13.23± 1.84	
Age						
20 – 30	22.49± 3.00	0.000	18.91± 2.29	0.000	12.98± 1.76	0.000
31 – 40	21.45± 2.51		19.48± 2.83		13.15± 1.72	
41 – 50	22.17± 2.57		19.15± 3.28		12.77± 1.86	
<50	25.13± 3.05		20.81± 2.29		14.31± 2.73	
Educational level						
Nursing school	22.31± 3.08	0.000	19.84± 1.99	0.000	13.68± 1.70	0.000
Institute	22.38± 2.75		19.10± 2.64		13.19± 1.79	
College	21.91± 2.46		18.64± 3.45		12.07± 1.69	
Work Experience						
> 5 Years	21.78± 2.11	0.000	19.16± 2.40	0.000	13.11± 1.59	0.000
5-10 years	22.84± 3.54		18.57± 3.31		12.67± 2.19	
< 11 Years	22.74± 3.22		20.76± 2.21		13.52± 1.89	

Table-7: Ordinary least square regression results of the subjects regarding hepatitis B virus.

Characteristic	Knowledge β (SE)	Attitude β (SE)	Practice β (SE)
Gender			
Male	-1.508 (0.228) *	-0.058 (0.215) NS	-0.353 (0.221) NS
Age			
20 – 30	-2.918 (0.572) *	-0.961 (0.552) NS	-2.553 (0.581) *
31 – 40	-3.748 (0.566) *	-0.322 (0.534) NS	-2.316 (0.562) *
41 – 50	-2.741 (0.545) *	-0.472 (0.525) NS	-2.154 (0.552) *
Educational level			
Nursing school	0.394 (0.263) NS	0.792 (0.264) *	1.882 (0.282) *
Institute	1.531 (0.272) *	0.213 (0.261) NS	1.699 (0.279) *
Work Experience			
> 5 Years	-0.558 (0.350) NS	-0.515 (0.349) NS	-0.151 (0.357) NS
5-10 years	0.930 (0.354) *	-0.792 (0.352) *	0.261 (0.359) NS

Table-8: Ordinary least square regression results of the subjects regarding hepatitis B virus.

Characteristic	Knowledge F (Sig)	Attitude F (Sig)	Practice F (Sig)
Corrected Model	24.51*	8.19*	17.19*
Intercept	30869.04*	11485.76*	17919.25*
Age (years)	78.11*	2.92*	22.92*
Gender	109.95*	.634NS	4.36*
Education	1.26NS	8.19*	35.00*
Work Experience	41.76*	2.23NS	0.789NS
Age*Gender	5.48*	15.98*	10.04*
Age*Education	22.03*	9.06*	11.23*
Age*Work Experience	10.02*	9.14*	20.63*
Gender*Education	37.62*	4.83*	16.09*
Gender*Work Experience	1.08NS	.628NS	21.07*
Education* Work Experience	12.42*	20.97*	20.10*
Age*Gender*Education	16.89*	1.06NS	4.33*
Age*Gender*Work Experience	18.87*	.234NS	43.81*
Age*Education* Work Experience	0.216NS	.024NS	5.88*
Gender*Education* Work Experience	0.545NS	5.86*	13.55*
Age*Gender*Education*Work Experience	-	-	-

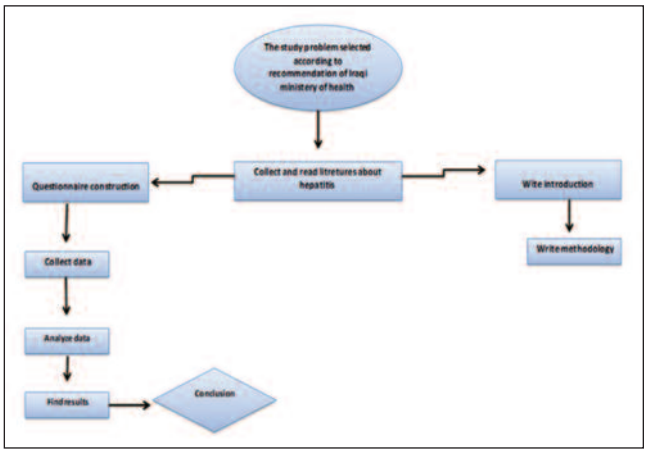

Figure: Syudy flowchart.

Discussion

The study 41.1% subjects aged 20-30 years, which is in line with studies done in Nigeria[13] and Kuwait.[14] A shade over 50% of the current sample comprised females, which was in agreement with one study, but not with other studies.[13,15] The difference is because in Iraq the number of women working in health institutions is higher than that of males in general, and the response of females was higher than that of males during data-collection. According to educational level, the current study had 36.7% subjects with diploma, which is contrary to earlier results.[15] According to work experience, the majority of the subjects had <5 years of experience.

Nursing knowledge was assessed by a number of questions focussing on the HB cause, mode of transmission, incubation period, treatment and preventive measures. In general, the study found that there was moderate knowledge of nurses about hepatitis, but there was significant between knowledge score and age, with most nurses having moderate knowledge being in the 20-30 years age group. This was in agreement with a study done in Sudan[16]. Different results have also been reported.[16,17] The difference is because of the different approaches in education about

Table-9: Multivariate analysis.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Knowledge	Age	57.885	12	4.824	7.033	0.000
	Gender	19.340	12	1.612	8.020	0.000
	Education	39.367	12	3.281	6.141	0.000
	Work Experience	38.798	12	3.233	7.337	0.000
Attitude	Age	73.220	13	5.632	8.785	0.000
	Gender	12.428	13	.956	4.293	0.000
	Education	37.664	13	2.897	5.355	0.000
	Work Experience	21.406	13	1.647	3.325	0.000
Practice	Age	99.701	9	11.078	20.019	0.000
	Gender	7.911	9	.879	3.762	0.000
	Education	69.865	9	7.763	17.756	0.000
	Work Experience	36.145	9	4.016	9.031	0.000

the disease in different settings. The results revealed that males had better knowledge than females, and the level of moderate knowledge was among the nurses who had <5 years of work experience. This finding was in disagreement with a study done in Nigeria.[13] This was due to the fact that in the current sample, the number of new employees was more than that of the old workers.

The present study displayed that most nurses had a moderate attitude about the disease, and majority of them were aged 20-30 years. Regarding the educational level and years of experience, which also had a significant association with the attitude of nurses, there were positive tendencies among those with 5-10 years of work experience and a university degree. This was in line with earlier results, and illustrated that attitude was not influenced by gender[16,18,19].

In the current study, there was good nurses' practices towards the disease, like taking vaccine, wearing protective equipment when dealing with patients' fluid, and checking immunity level, especially among those aged 41-50 years, having 5-10 years of work experience, and having university education. The finding was in line with one study, but not with another one[20,21]. It is possible to attribute this difference between the two studies to the difference in the nursing environment.

Conclusion

The knowledge level related to HBV among the nursing staff was good. Overall, KPA improvement among the nursing staff was needed.

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