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# Knowledge and Behavioural Intention about Prevention of Hepatitis B in Medical and Non-Medical College Students

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## ABSTRACT

Hepatitis B infection is the primary cause of liver diseases and liver cancer. The aim of this study is to determine the knowledge and behavioral intention about hepatitis B among college students. This cross sectional study was carried out on 1145 college students of Yazd universities both medical and non-medical, which recruited them with a random sampling method. The data gathering was done with standard self-administered questionnaire. Data were analyzed by SPSS-20 using t-test, Chi-square and ANOVA statistical tests at the 95% significant level. The Results showed there was a significant relation between knowledge and behavioral intention about hepatitis B among medical and non-medical college students. In addition, there were significant relation between gender, type of university and level of education with knowledge and behavior intention ( $P < 0.05$ ). Our findings indicated the degree of knowledge and behavioral intention about hepatitis B was low among non-medical college student. We suggested the designing and implementing of education programs for increasing knowledge and behavioral intention about hepatitis B among non-medical college students.

**Key words:** Knowledge, Behavioral Intention, Hepatitis B, College Students

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## 1. INTRODUCTION

Hepatitis B is one of the major worldwide public health problem and an estimated 2 billion persons worldwide are infected (1, 2). Hepatitis B infection may progress to chronic liver disease, including cirrhosis and hepatocellular carcinoma, one of the most common cancers in the world. Following acute hepatitis B virus infection, between 1-10% of adults and 30- 90% of children become chronic carriers, a part of who are at risk to develop life threatening diseases (3). Hepatitis B is a significant causal agent of morbidity and mortality worldwide. An estimated one third of the world's population has been infected, over 350 million people are chronic carriers and hepatitis B virus infection results in an estimated 620000 to 1 million deaths annually (4). Viral hepatitis is one of five most important infectious causes in the US (5). Infection with hepatitis B during adolescence

and adulthood is linked with a lower risk of chronic infection, so it is an important public health problem. In areas of high endemicity, the lifetime risk of hepatitis B virus infection is more than 60% and most infections occur at birth or during early childhood, when the risk of chronic infection is greatest. Because most early childhood hepatitis B virus infections are asymptomatic, there is little recognition of acute disease, but rates of chronic liver disease and liver cancer are high. Regions of high endemicity include most of Asia (except Japan and India), for the most part of the Middle East, the Amazon Basin of South America, most pacific Island Groups, Africa, and other places(2). Once infection occurs, transmission can occur horizontally via contact with blood products, through sexual contact and even through apparent casual household contacts (6). The Islamic Republic of Iran has a large number of hepatitis B carriers. The Hepatitis B surface antigen is found frequently in this area as compared to the

United States of America (USA) and Western Europe. The carrier rate of HBsAg among the Iranian population has decreased in the past 2 decades (7). Estimations indicate about 3% of the Iranian people are chronically infected with hepatitis B virus (8). Studies have shown hepatitis B is a preventable disease and the students of Universities especially; students of medical sciences have an effective role in its prevention. A survey proved that the undergraduate medical students' knowledge about hepatitis is low (9). The staffs of medical and wellness services are familiar with treatment, transmission, prevention and control of diseases. Therefore, it is important to assess the level of information on them in different fields of infectious diseases and hepatitis B as one of those diseases. This article compares the knowledge and behavioral intention of medical and non-medical students of Yazd universities about hepatitis B infection.

## 2. MATERIALS AND METHODS

This cross-sectional study was conducted on 1145 college students aged 19 to 35 years old in Yazd University of Medical Sciences and Islamic Azad University, Yazd branch, during 2011. The sample size was calculated at 95% significance level according to the results of a pilot study and a sample of 1145 was estimated. Of the population of 1145, 1128 (98%) signed the consent form and voluntarily agreed to take part in the survey. Participants were selected by cluster sampling in completing the questionnaire of the survey. Prior to conducting the main project, a pilot study was conducted to obtain feedback about the clarity, length, comprehensiveness, and completion time of the questionnaire, as well as estimating the internal consistency of the questionnaires.

The questionnaire included three sections:

1) Demographic questions:

Background data; Age, Gender (male/female), level of education (technician/ BSc/ MSc/ MD) and type of university (medical/ non-medical).

2) Knowledge about hepatitis B: Student's awareness hepatitis B was measured by a standard 8-item scale (10). Examples:

'Do you think hepatitis B can be spread by eating food prepared by an infected person?'

Choice of response: yes /no/ I do not know.

The reliability coefficient for the knowledge scale was 0.84, suggesting that the internal consistency was adequate.

3) Behavioral intention: Behavioral intention was measured with a standard 5-item rating scale (10). Each item was measured on an ordinal 5-point Likert-type scaling. The reliability coefficient for the scale was deemed adequate ( $\alpha = 0.73$ ). The Statistical Package for the Social Sciences version 20 (SPSS) was used for the purpose of data entry, manipulation, and analysis. Descriptive statistical analyses were used to summarize and organize the data. Furthermore, data were analysed by using T-test, Chi-square and ANOVA statistical tests at 95% significance level.

## 3. RESULTS AND DISCUSSION

The mean age of respondents was 23.72 years [SD: 2.87], ranged from 19 to 35 years. Almost, 61.2% (690/1128) of participant was men and 38.8% (438/1128) of them was women. Regarding the educational status: 25% (282/128) technician, 60.8% (686/1128) BSc, 7.4% (84/1128) MSc, and 6.7% were MD student. In addition, 48.3% (545/1128) participants were medical college students and 51.7% (583/1128) were non-medical college students.

The frequency of correct answers to knowledge questions among medical and non-medical students showed in

Table 1.

Table 1. Frequency of correct answers to knowledge questions

Questions of knowledge	Correct answers	Medical students		Nonmedical Students		P-value
		N	%	N	%	
Does hepatitis B easily spread from person to person? <sup>a</sup>	Yes	402	72.8	57	9.8	0.001
If someone is infected with hepatitis B but they look and feel healthy, do you think that person can spread hepatitis B? <sup>a</sup>	Yes	402	72.8	58	9.9	
Do you think hepatitis B can be spread by eating food prepared by an infected person? <sup>b</sup>	No	431	78.1	68	11.7	0.001
Do you think hepatitis B can be spread by sharing a toothbrush with an infected person? <sup>a</sup>	Yes	411	74.5	59	10.1	0.001
Do you think hepatitis B can be spread by eating food that has been preceded by an infected person? <sup>a</sup>	Yes	395	71.6	83	14.2	
Do you think hepatitis B can be spread by being coughed on by an infected person? <sup>b</sup>	No	411	74.5	113	19.4	0.001
Do you think hepatitis B can be spread by having sexual intercourse with an infected person? <sup>a</sup>	Yes	447	81	144	24.7	
Do you think hepatitis B can be spread by holding hands with an infected person? <sup>b</sup>	No	449	81.3	121	20.8	

<sup>a</sup> Yes versus no or not sure.

<sup>b</sup> No versus yes or not sure.

We found the significant association between, levels of education, gender, type of university with knowledge about

hepatitis B, and behavioral intention (Table 2 and Table 3).

Table 2. Association between sex, type of university, and educational level with knowledge about hepatitis B

	Variable	Mean	SD	t	P
Sex	Women	4.18	2.67	6.353	0.001
	Men	3.14	2.68		
Type of University	Medical	6.05	1.45	64.937	0.001
	Nonmedical	1.20	1.03		
f					
Educational Level	Technician	1.99	2.08	105.252	0.001
	BSc	3.57	2.64		
	MSc	5.53	2.26		
	MD	6.84	1.72		

Table 3. Association between sex, type of university, and educational level with behavioral intention

	Variable	Mean	SD	t	P
Sex	Women	16.30	5.75	7.193	0.001
	Men	13.87	5.38		
Type of University	Medical	19.98	2.68	63.312	0.001
	Nonmedical	9.99	2.61		
f					
Educational Level	Technician	12.07	4.72	66.983	0.001
	BSc	14.95	5.51		
	MSc	17.63	5.92		
	MD	20.73	2.68		

In addition, we found the significant association between, 4. frequency of answers to behavioral intention questions among medical and nonmedical students showed in Table

Table 4. Frequency of answers to behavioral intention questions

Behavioral intention	Students	Not at all likely		Somewhat likely		Neither likely nor unlikely		Likely		Very likely		P-value
		N	%	N	%	N	%	N	%	N	%	
How likely are you to ask someone to get you more information about Hepatitis B immunizations	Medical	9	1.7	55	10.1	50	92.2	195	35.8	236	43.3	0.001
	Nonmedical	159	27.3	229	39.3	189	32.4	4	0.7	2	0.3	
How likely are you to seek more information about Hepatitis B	Medical	4	0.7	49	0.9	49	0.9	146	26.8	297	54.5	0.001

	Nonmedical	256	43.9	132	22.6	163	28	21	3.6	11	1.9	
How likely are you to do something for Hepatitis B Prevention in your area	Medical	39	7.2	27	5	60	11	165	30.3	254	46.6	0.001
	Nonmedical	161	27.6	293	50.3	118	20.2	6	1	5	0.9	
I already know enough information about Hepatitis B			Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree					
	Medical	19	3.5	70	12.8	63	11.6	160	29.4	233	42.8	0.001
Nonmedical	502	86.1	13	2.2	61	10.5	2	0.3	5	0.9		
How many You have received hepatitis B vaccine			None	One	Two	Three						
	Medical	35	6.4	18	3.3	49	9	443		81.3		0.001
Nonmedical	215	36.9	43	7.4	65	11.1	260		44.6			

Finally, we were significant about bivariate associations between knowledge and behavioral intention ( $r = 0.814$ ). Our findings showed mean knowledge about hepatitis B among the participants was 3.54, ranged from 0 to 8; this score shows that the participants had obtained 44% of the total scores of knowledge. Furthermore, our result showed a low level of knowledge about hepatitis B among the nonmedical college students. In this regard, Paul and et al in their study among the oral health care workers in Saudi Arabia, reported poor knowledge about hepatitis B among them and noted the necessary for implementing the educational program (11). Lynne et al also, reported similar result (12). In addition, the least knowledge score in medical students was about question No 5 – ‘does Hepatitis B can transmit by eating food that previously chewed by a hepatitis B virus (HBV) positive person?’ that 71.6% of them answered correctly. In non-medical students the best-answered question was question No 7- ‘does Hepatitis B can transmit by sexual contact with a HBV positive person?’ that only 24.7% answered correctly. The result of this study does not confirm result of John’s study about medical students, but is concomitant with it about non-medical students (13) in John study even medical students had a low level of knowledge about HBV transmission. In another study Hwang showed that the Vietnam students of American universities have a low level of knowledge about possible hazards of Hepatitis B (14). In another study in Yazd city, Iran about 47.3% of study cases had answered correctly to questions about the ways of HBV transmissions, while in our study correct answer to this question was 72.8% of medical students and 9.8% in non-medical students. Another finding of present study the best means of knowledge and behavioral intention among women students. It is notable that there was a significant relationship between gender and knowledge ( $P < 0.001$ ). These results are confirmed by some other studies (14,15) that have shown knowledge of women is better than men and women have more tendencies to use protective ways for prevention of Hepatitis B compared with men. Furthermore, our result showed high level of correlation between knowledge and behavioral intention. In this regard, the correlation between knowledge and behavioral intention to healthy behavior was shown in several studies (16-18). In addition, several studies have reported behavioral intention can predict the

explain health behavior (19-21). Finally, the current study showed the significant association between level of education and knowledge about hepatitis B. This result is consistent with the Rashwan *et al.* (22), and Provost *et al.* (23).

#### 4. CONCLUSION

Overall, our findings showed the knowledge and behavioral intention about hepatitis B among the non-medical college students was low. It is necessary for attention this issue and designing the education programs for increasing knowledge and behavioral intention about hepatitis B among nonmedical college students.

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#### AUTHORS CONTRIBUTION

This work was carried out in collaboration between all authors.

#### CONFLICT OF INTEREST

The authors have declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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