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Hossein Ansari
Department of Epidemiology and Biostatistic,
Faculty of Health,
Zahedan University of Medical Sciences,
Zahedan, Iran

Tel: +98541-2442197
Fax: +98541-2438487

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Assessment of Knowledge of Students of Zahedan University of Medical Sciences about Viral Hepatitis Infections and Related Factors

[1]H. Ansari, [2]G.R. Masoudi, [2]F. Rakhshani,
[3]F. Kord-Mostafapour and [4]A. Arbabi-Sarjo

The purpose of this study was to assess the knowledge of students of Zahedan University of Medical Sciences about VHI and it's related factors. This cross sectional study was performed on 356 students of Zahedan University of Medical Sciences. The subjects were selected using stratified random sampling. The data collected using structured questionnaire. Maximum score of knowledge was 100. The data were analyzed by SPSS version 13 software using descriptive and analytical (ANOVA, Independent T, Spearman correlation coefficient and chi square tests) statistics. The mean of total score of students were 40.2±18.2. The mean of knowledge score about hepatitis A and E (32.8±22.7), hepatitis B, C and D (47±18.6), about symptoms and treatment (32.1±13.5) and about prevention from these infections was 58±27.3. There was statistically significant relationship between knowledge of students and average, field, semester and graduate level ($p<0.05$). The knowledge of student about prevention of hepatitis infections was more than other aspects of disease such as symptoms, treatment and transmission, so teaching about treatment and symptoms of these infections to diagnosis is too important. The students of health course should be educated about VHI more than others students and educational program should be performed with respect to variables that were related to awareness of students.

Key words: Viral hepatitis infections, students of Zahedan University of Medical Sciences, knowledge

[1]Department of Epidemiology and Biostatistic, Faculty of Health, Zahedan University of Medical Sciences, Zahedan, Iran
[2]Department of Public Health, Faculty of Health, Zahedan University of Medical Sciences, Zahedan, Iran
[3]Department of Environmental Health, Faculty of Health, Zahedan University of Medical Sciences, Zahedan, Iran
[4]Department of Nursing, Faculty of Nursing, Zahedan University of Medical Sciences, Zahedan, Iran

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INTRODUCTION

Hepatitis can appeared in acute form, with jaundice, dark urine, anorexia, weakness, severe fatigue, pain and tender Right Upper Quadrant (RUQ). Viral hepatitis is one of the five important infectious that causes premature death in the world (Beltrain and Alvardo-Rani, 2003). The history of hepatitis infections come back to the thousand years ago. Now with respect to diagnosis of these virus characteristics, clinical symptoms and it's complications, prevention of these infections is most important in the societies (Chironna *et al*., 2003; Robyn *et al*., 2005).

Annually, at least one million people die due to hepatitis in the world. There are more than 450 million carriers of hepatitis virus around the world (about 6% of population in the world) and also about 3% of Iranians are carriers of hepatitis B virus and 200-300 thousands people are suffering from hepatitis B. Also, it is known that hepatitis D may be appeared among the people who have got hepatitis B. In addition, hepatitis A and E are one of the most common viral infections in the developing countries such as Iran (Ghahramani *et al*., 2006; Hu *et al*., 2004). These chronically infected persons are at high risk of death from cirrhosis of the liver and liver cancer disease.

Viral Hepatitis Infections (VHI) mostly are inapparent among children and sometimes among adults, so prevention from VHI and enhancement of people awareness, especially medical students, about these infections are very important (Ghahramani *et al*., 2006; Ayyat *et al*., 2004). It must be mentioned that hepatitis is a preventable disease and the students of medical sciences have an effective role in its prevention (Ayyat *et al*., 2004).

The previous studies showed that medical students and staff of health providing services are at high risk of these infections and their awareness about VHI still is low. For example a study conducted by Al-Jabri *et al*. (2004) indicated that the under graduated medical student's knowledge about hepatitis is low. Another study conducted among the Turkish nurses showed that about 76.2% of them had been injured with injection needles and about 1.4 and 7.9% of them were suspected to hepatitis B and C respectively (Kosgeroglu *et al*., 2004). This study showed that their awareness about hepatitis infections is low.

The previous studies conducted in Iran outlined that the awareness of obstetricians, nursing and dentistry students about hepatitis infections is less than what they should know (Ghahramani *et al*., 2006; Askarian *et al*., 2007). A study by Adebamow and Odukagbe (2002) indicated that awareness of obstetricians about VHI is low and educational programs should be performed for this group.

The staff of health providing services should be familiar not only with treatment but also with epidemiological aspects of disease such as transmission, prevention and control (Robyn *et al*., 2005). Therefore, it is important to study the level of knowledge among these groups in different fields, such as hepatitis, one of the most prevalent infectious diseases.

General awareness of health staff about viral hepatitis and its transmission and prevention is too important and can cease the spread of the disease in hospitals and societies (Ayyat *et al*., 2004).

Since medical students (especially medicine, dentistry and nursing students) are in close contact with hepatitis patients, so they may be in danger of acquiring viral hepatitis especially type B and C. In addition these groups are responsible for prevention and control of these infectious in societies. In another words, they are harbingers in fighting to diseases. It must be mentioned that in addition to hepatitis B and C, the prevalence of hepatitis A and E is high in developing countries such as Iran. The prevalence of VHI in Sisitan and Baluchistan province in Iran is high, too (Ghahramani *et al*., 2006). Therefore, it is very important to enhance the knowledge of medical students of this province.

This study was done due to the importance of the role of medical student's knowledge in prevention of hepatitis. The aim of this study is to determine the awareness level of students of Zahedan University of Medical Sciences about the hepatitis.

MATERIALS AND METHODS

This cross-sectional study was conducted on 356 students in different fields from five School of Zahedan University of Medical Sciences by proportional stratified random sampling, in 2007. The sample was selected with respect to number of students at each faculty. In this sampling method, the faculties that had more students provided more sample. The data collected using a structured questionnaire. This questionnaire had contained 33 items about different aspects of hepatitis and was distributed among students of the faculties. The questions of the questionnaire were multiple choices and based on the most reliable books about infectious disease. Validity of this questionnaire verified by epidemiologists and infectious disease specialists and the reliability of it was 0.74. The questionnaire started with questions asking the sex, age and information about filed of students and the academic term. The rest of the

questions were specified and related to all type of hepatitis, its transmission, prevention and symptoms.

The questionnaire in this study were about general awareness about hepatitis and awareness about prevention, symptoms and transmission of hepatitis A, B, C, D and E. In this study based on general awareness, the students divided to 3 groups, weak awareness (score of 30 or less), intermediate awareness (scores of 30-60) and good awareness (score of 60 or more). Kolmogrove-Smirnove test was used to determine the normality of data and had a normal distribution. The data were analyzed by SPSS version 13 soft ware using descriptive and analytical (ANOVA, Independent T, Spearman correlation coefficient and chi square tests) statistics. Significant level was set as 0.05.

RESULTS

The mean age of the subjects was 23±2.2 (mean±SD). One hundred and forty eight of participants were males and 208 were females. Descriptive results consist on sex, marital status, educational degree, field, semester and average are shown in Table 1.

The mean of total score of student's awareness about all types of hepatitis was 40.2±18.2 , about hepatitis A and E was 32.8±22.7, hepatitis B, C and D was 47±18.6. The score of student's knowledge about hepatitis prevention was 58±27.3 and about it's symptoms and treatment 32.1±13.5.

There was a statistically significant relationship between student's average and semester with awareness level of hepatitis ($p<0.05$). According to the showed data in Table 2, with increasing in the average and semester, student's awareness about hepatitis also increases directly (Table 2).

As illustrated by Table 3, with increasing average and semester, the mean score of student's awareness about hepatitis in all cases also increases directly. Also the Table 3 shows that, the mean score of student's awareness about symptoms and treatment is less than other fields in all groups.

Table 4 shows the mean score of student's awareness by sex. The highest awareness level is about hepatitis B, C and D among males and females. The lowest awareness level about all types of hepatitis is about symptoms and treatment among males and females. However as indicated by Table 4, there was not a statistically significant relationship between sex and awareness level ($p>0.05$).

There was not significant difference between awareness rate of hepatitis prevention methods and educational degree ($p>0.05$) but there was a statistically significant relationship between educational degree of students with total score of awareness and awareness about types of hepatitis separately ($p<0.05$).

Table 1: Demographic variables of Zahedan University of medical sciences students

Demographic variables	No. (%)
Sex	
Male	148 (41.6)
Female	208 (58.4)
Marital status	
Married	21 (5.8)
Single	335 (94.2)
Graduate level	
Associated diploma	85 (23.8)
Bachelor	136 (38.2)
Medicine doctor	135 (38.0)
Field	
Medicine	101 (28.4)
Dentistry	34 (9.6)
Nursing	54 (15.2)
Para medicine	75 (21.1)
Health	92 (25.7)
Semester	
1-3	55 (15.4)
4-6	160 (45.0)
7-10	73 (20.5)
10+	68 (19.1)
Average	
<14	100 (28.0)
15-17	167 (47.0)
>18	89 (25.0)

As illustrated by Table 5, there was also a significant relationship between student's awareness about all types of hepatitis and educational degree ($p<0.05$). Duncan post hoc test showed that the difference between students of Medicine Doctor (MD) and associated diploma students is significant ($p<0.05$). Also there was a significant differences between educational degree of students and awareness level about hepatitis B, C and D by ANOVA test ($p<0.05$). Duncan post hoc test showed that the difference between students of Medicine Doctor (MD) and associated diploma students is significant ($p<0.05$). Also there was a significant relationship between student's awareness level about hepatitis A and E with educational degree ($p<0.05$). Also Duncan post hoc test showed that the difference between students of Medicine Doctor (MD) and Bachelors (B.Sc.) students is significant ($p<0.05$).

There was also a significant relationship between awareness level of students about symptoms and treatment of hepatitis with educational degree ($p<0.05$). Duncan post hoc test showed that this significant correlation is between students of Medicine Doctor (MD) and Bachelors (B.Sc.) students ($p<0.05$) and also between students of Medicine Doctor (MD) and associated diploma students ($p<0.05$). Of course, in this section, the table also indicates that these students have least awareness about symptoms and treatment of hepatitis in all educational degree.

Table 2: Correlation coefficients between average and semester of student with their awareness about hepatitis

	Average*		Semester	
Awareness	Correlation coefficient (r)	p	Correlation coefficient (r)	p
Awareness about hepatitis A and E	0.54	0.05	0.47	0.05
Awareness about hepatitis B, C and D	0.44	0.05	0.52	0.05
Awareness about prevention of hepatitis	0.39	0.05	0.46	0.05
Awareness about symptoms and treatment of hepatitis	0.49	0.05	0.63	0.05
Total score	0.43	0.05	0.68	0.05

*: To study time. In first semester student average of diploma was asked

Table 3: The mean and SD of total score of student's awareness about hepatitis by Semester and Average

	Semester				Average		
Awareness	1-3	4-6	7-9	>10	<15	15-17	>18
Awareness about hepatitis A and E	25.5±31.7	32.9±29.4	34.4±28.1	36.3±25.5	29.0±7.19	31.4±28.1	35.2±25.5
Awareness about hepatitis B, C and D	38.0±17.0	45.1±18.1	49.8±21.8	56.2±18.9	34.3±19.1	46.1±15.7	65.5±36.9
Awareness about prevention of hepatitis	51.9±34.9	52.5±36.9	64.3±29.8	70.6±26.2	50.9±14.9	61.3±22.8	65.6±26.2
Awareness about symptoms and treatment of hepatitis	21.9±7.90	28.5±16.9	34.3±19.8	41.6±16.2	25.9±14.9	34.3±22.8	37.6±26.2
Total score	31.5±14.8	34.2±16.2	45.5±19.2	53.3±18.3	36.1±15.7	49.9±29.9	48.2±25.5

Table 4: The mean and SD of total score of student's awareness about hepatitis by sex

Awareness	Sex	Mean±SD	p
Awareness about hepatitis A and E	Male	33.2±33.4	0.14
	Female	32.1±31.6	
Awareness about hepatitis B, C and D	Male	49.8±31.5	0.94
	Female	46.1±29.6	
Awareness about prevention of hepatitis	Male	58.2±18.7	0.40
	Female	59.9±14.8	
Awareness about symptoms and treatment of hepatitis	Male	33.1±15.1	0.33
	Female	31.5±18.3	
Total score	Male	41.5±21.8	0.29
	Female	39.4±19.3	

Table 5: The mean and SD of total score of student's awareness about hepatitis by educational degree

	Educational degree				
Awareness	Associated diploma (A)	Bachelor (B)	Doctor (C)	p	p (between groups)*
Awareness about hepatitis A and E	19.8±20.3	30.9±28.1	47.9±29.7	0.001	NS
					NS
					0.05
Awareness about hepatitis B, C and D	44.6±17.1	47.8±19.8	50.6±19.9	0.010	NS
					0.05
					NS
Awareness about prevention of hepatitis	56.3±28.6	58.9±36.2	62.1±30.3	0.410	NS
					NS
					NS
Awareness about symptoms and treatment of hepatitis	23.4±21.3	25.1±22.6	48.3±32.8	0.010	NS
					0.05
					0.05
Total score	35.4±14.3	39.6±18.3	47.4±19.1	0.001	NS
					0.05
					NS

*: Comparison between group A and B, A and C and B and C, respectively; NS: Non Significant

In general, the mean scores of student's awareness in various educational fields were 55.8±8 (medicine doctor), 45.2±15.6 (dentist), 43.7±15.2 (nursing), 41.7±20.3 (Para medicine) and 31.2±12.1 (health), respectively.

Table 6 shows frequency distribution of student's awareness about hepatitis by their field. As indicated by Table 6, most good awareness level is among medicine students and least good awareness level is among health students (55.5 vs. 27%), also most weak awareness level is among health students and least weak awareness level is among nursing students (49 vs.14.8%). There was a statistically significant relationship between student's awareness about hepatitis and educational field by chi square test ($p<0.05$).

No significant differences was observed between educational level of student's parents and their knowledge about hepatitis ($p>0.05$). Although mothers of most of them that had good awareness had prospered from academic students. There was not relationship between awareness of students about hepatitis with marital status and residential status of students ($p>0.05$).

Table 6: Frequency distribution of student's awareness about hepatitis by field

	Awareness							
	Good		Moderate		Weak		Total	
Field	Frequency	(%)	Frequency	(%)	Frequency	(%)	Frequency	(%)
Medicine	56	55.4	20	19.8	25	24.8	101	100
Para medicine	26	34.7	29	38.7	20	26.6	75	100
Nursing	21	38.8	25	46.5	8	14.7	54	100
Health	25	27.2	22	23.9	45	48.9	92	100
Dentistry	17	50.0	10	29.4	7	20.6	34	100
Total	145	40.7	106	29.8	105	29.5	356	100

$\chi^2 = 39.9$ $p = 0.0001$

DISCUSSION

In general, the finding of current study showed that medical sciences student's awareness about all types of hepatitis, especially type A and E is weak and awareness about prevention is more than other fields such as symptoms and treatment. Since medical sciences students have low information about symptoms and treatment of hepatitis, therefore they should be trained and justify about it, because identification and diagnosis of disease symptoms, treatment and control it, is a preventive method and can be decrease the incidence of these infections.

This study showed that student's awareness about hepatitis B, C and D is more than types A and E. These findings were parallel with previous conducted research in Iran (Askarian *et al*., 2007). Since transmission of hepatitis A and E is fecal-oral and occurs in societies with almost low level of health such as Iran and other developing countries, thus, students should be more educated about hepatitis A and E. It must be mentioned that hepatitis E have an epidemic history in Iran and it is important among pregnant women. We know that hepatitis A and E have healthy importance, especially in developing countries so we should not neglect about the fighting and control of these types of hepatitis infections and a good way to fight is arising knowledge of people especially medical students.

Author obtained results in this study indicate that student's awareness about hepatitis in all fields was statistically correlated with educational degree, semester, field and average. In the present research, there was not relationship between awareness of students about hepatitis with sex, educational level of their parents, marital status and residential status of students ($p>0.05$).

This study indicated that 29.4, 29.7 and 40.9% of student's awareness about hepatitis respectively was good, intermediate and weak. These findings were not parallel with a conducted research in Taiwan (Hu *et al*., 2004).

In this study junior student's awareness level was less than the senior students and student's awareness level was increased with semester and educational years increasing. This finding is parallel with a conducted study in New Delhi (Chhabra *et al*., 2002). Since medical sciences students deal with types of disease from early educational years, therefore it is important that student's awareness level should be increased and the students should familiar about hepatitis importance when they are freshman.

As state earlier, student's awareness level about hepatitis B and C was more than other types of hepatitis. Awareness level of medicine doctor students about hepatitis A and E was more than other students but awareness level about hepatitis B, C and D was same among all fields and all students, which is consistent with finding of other study that performed on Australian junior and senior high school students about hepatitis (Lindsay *et al*., 2005). Also the previous study in Indiana showed the same results (Chhabra *et al*., 2002).

Current research stated that health student's awareness was less than other students. With regard to this point that health students will work in health centers in the near future and undertake main part of prevention duty, thus these student's awareness level increasing is an important priority. However, working in hospitals and other treatment centers is a reason for good awareness level of medicine doctor, nursing and dentistry students as compared with health students.

Present study indicated that there is a significant relationship between average and awareness level of students. As above regarded, the students that have better educational status, have better awareness about hepatitis. A reason for mentioned point can be that students with high educational status have high motivation for learning about hepatitis infections and another field.

Another result obtained in current study is that awareness level of associated diploma students is less than bachelors and medicine doctor students. The reasons for this result are (a) period of education for associated diploma students is less than others and these students have low experience (b) education of associated diploma students about infectious disease is low (c) these students justified less than other students about infectious disease such as hepatitis.

A study conducted by Ayyat *et al.* (2004) showed that nursing students and nurses needed to be educated in washing their hands, avoiding common syringe in order to control hepatitis B, C. In the same study in Taiwan, it was shown that knowledge of hepatitis B and C in dental students was 80 and 75%, respectively, which is much higher than that in medical students (Hu *et al.*, 2004). Considering to these studies and results obtained in our study, we should enhanced the awareness level of other student's similar to medical students ones.

The knowledge of hepatitis B was more than that of other types of hepatitis in medical students. But the knowledge of hepatitis B, C and D is equal among all the students. A study done on junior and senior high school students of Australia showed that they had very little information about hepatitis C and could not differentiate between the three types A, B, C (Lindsay *et al.*, 2005). In a study conducted by Chhabra *et al.* (2002) on medical students of Delhi to measure their level of information about hepatitis A and B, a questionnaire including information on hepatitis B vaccine, its transmission, symptoms and prevention, was distributed among the first, third and last year students. The results showed that senior students had the highest level of information compared with other two groups (Chhabra *et al.*, 2002). On the whole, however, they had little information about vaccine dose, transmission via personal objects and precautions and prevention. This result is almost parallel to the results we have obtained in this study.

Billing and Stokes (1989) believe that the following can influence health habits of individuals: age, occupation, race, socio-economic status, information about the disease and the level of health education, so we should consider to these variables in educational programs.

Robyn *et al.* (2005) suggested that some factors such as age, occupation, race, socio economical status and knowledge about disease can be effective on health behaviors. Thus with regard to the obtained results in this study, it is necessary for educational centers such as medical universities to plan for serious education about infectious disease such as hepatitis especially in regions such as Zahedan that have high prevalence of disease.

The results of this study suggest that the educational program should be preformed with respect to independent variables which related to awareness of students about VHI and since the information of this group was relatively low, they should be trained accordingly.

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