

## Assessing the Knowledge and Attitude about Hepatitis C among Dental Students in Tehran, Iran in 2014-2015

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Received: 2015/08/13

Accepted: 2015/10/02

### Abstract

**Introduction:** Hepatitis C is a common viral disease of the liver, with an estimated 4.5 million infected individuals in the US. The lack of adequate knowledge of the hepatitis C has been reported among clinicians, dentists and other occupational groups. The present study showed the Knowledge and attitude of undergraduate and postgraduate students in Shahid Beheshti Dental School regarding hepatitis C: 2014-2015.

**Methods:** In this descriptive cross-sectional study, 100 undergraduate and postgraduate students (80 and 20 individuals) were selected and studied by means of a questionnaire. The questionnaire included 17 knowledge and 9 attitude questions. The attitude and knowledge of dental students were assessed by Chi-Square Test.

**Results:** Of the total studied individuals, 32 students (32%) showed poor knowledge, 48 ones (48%) moderate knowledge and 20 ones (20%) had good knowledge of hepatitis C. Furthermore, 12 cases (12%) demonstrated poor attitude, 49 cases (49%) moderate attitude and 39 cases (39%) had good attitude. Value Odds ratio postgraduate students than the undergraduate students of the Group has the knowledge and attitudes of high compared to the moderate knowledge and attitude were 2/5 and the group has the knowledge and attitudes of high compared to low 4/5, respectively, Odds ratio in Female students than male of the above Groups were 1/3 and 1/8. No significant effect of gender and course were shown on the student's attitude and knowledge. (P. value > 0/05)

**Conclusion:** It was concluded that although fair knowledge and attitude were shown among undergraduate and postgraduate students of this center, some important knowledge or attitude gap persist, for which, more stresses are required and adequate educational interventions are necessitated to prevent hepatitis C transmissions among population.

**Keywords:** Hepatitis C, Knowledge, Attitude

### Introduction

Hepatitis C is the most common viral liver disease and about 5.4 million people in the United States are infected with Hepatitis C, based on the results of several studies [1]. The carriers of this disease are about 3% and 3-4 people become infected annually [2-4]. Around 70 to 80% of patients with Hepatitis C enter the chronic phase and more than 50% of them are symptom-free and are not aware of their disease [5,6]. Hepatitis C is identified as an important factor in chronic liver diseases and liver cancer. Inability caused by Hepatitis C is not only limited to liver disease; 15% of cases have extra-hepatic symptoms, including glomerulonephritis, lymphoma, leukemia, Sjogren's syndrome, and lichen planus [7-9]. Also, Hepatitis C is the leading cause of liver transplantation, because of the high prevalence of the disease in the United States [10]. This disease has no vaccine and no cure, because of the high ability of mutations in the genome, and prevention is the only way to avoid it [11]. This

infection is currently considered a health-related problem in different communities [12].

Because of the progressive nature of disease, preventing new cases and treating patients in the early stages, are the main methods for controlling it [10,13]. Appropriate perception of HCV (Hepatitis C virus) infection has a great importance among health care workers, because 80% of patients are initially assessed and diagnosed by them [14]. According to Souza'D and colleagues (2004), the majority of physicians in East London confessed to their little knowledge of chronic Hepatitis C and were in need of further training [15]. Zickmund and colleagues (2007) also assessed the knowledge and attitude of health care workers about HCV and showed that there are defects in their knowledge, which might be a barrier to receiving proper treatment [16]. The research of Laraqui et al (2009), regarding knowledge and function of health care workers in different cities of Morocco, showed the risks of Hepatitis C and B infections are not respected enough by health care workers [17]. In the study conducted in Iran, Rahmati Najarkolaei et al. (2013) demonstrated that

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educational intervention could improve the knowledge of the female students regarding HIV/AIDS [18].

Dental students are at high risk for occupational exposure to blood-borne pathogens via sharp injuries such as needle stick injuries so it is necessary for general dentists and dental students to know about risk factors, diagnosis, treatment, and side effects of Hepatitis C [19]. On the other hand, epidemiologic researches on Hepatitis C concerning infectious diseases such as AIDS or Hepatitis are limited and few studies have focused on the knowledge and attitude of dentists and dental students about this infection [18]. Given the importance of the subject, this study aimed to assess the knowledge and attitude of dental students of Shahid Beheshti University of Medical Sciences about Hepatitis C from 2014 to 2015.

## Methods

Descriptive-analytical study was performed with cross-sectional design. Data collection for this study was conducted through self-administered questionnaire, presented in the appendices 1. Non-randomized sampling was performed and each person was regarded as a statistical population after selection. Considering the total number of students of Tehran, Iran University of Medical Sciences and according to the list provided by the Department of Education, 100 general and specialized students (academic terms :7 to 12 ; educational years: 4 to 6 ) during 2014-2015 who expressed their interest to participate in the study and completed the research questionnaires. Of the 100 total male and female selected cases, 80 were general students (80%), who have passed all virology courses, general and specialized pathology, infection control, and mouth disease 1 and 2. The questionnaire was also completed by students of different specialized fields, including prosthetics, restorative, endodontics, orthodontics, surgery, oral medicine, pediatrics, periodontics, pathology, radiology (one male and one female from each field).

Regarding lack of valid and reliable questionnaire for assessing the knowledge and attitude of dental students about Hepatitis C, a questionnaire was designed based on available reference from articles [20-22]. Then, the questionnaire was corrected and modified based on the assessments of the supervisor, a gastrohepatologist, and a methodologist. Research questionnaire included three parts; demographic data (three questions), knowledge of Hepatitis C (seventeen questions), and attitude -related questions (nine questions). Assessing the relation of the questions to the subject (content validity) was performed using 5 different options (quite related, somewhat related, without comment, relatively unrelated, and completely unrelated). According to the results of this assessment, there was no irrelevant question. Then, as a pilot study, the questionnaire was experimentally filled by a small number of students (n=20), (Cronbach's alpha coefficient=0.808, CVR=0.68, CVI=0.87). In order to eliminate the accidental response of knowledge and attitude, the option "I do not know" have also been added. For this purpose, frequency and percent of students' answer to all questions of knowledge and attitude were determined and participants were divided into the following groups based on the obtained points: weak (0-18 points), moderate (21-36 points), and good knowledge (39-51 points) or a poor (0-3 points), moderate (4-6 points), and good attitude (7-9 points). The students'

attitude included questions of high risk patients, possibility of infection with HCV, HCV-positive patients' admission for treatment, treatment of HCV-positive or high risk patients at clinics specialized for certain diseases, compulsorily testing dentists for HCV, putting penalty for patients hiding their HCV, prosecution of dentists who refuse to accept patients with HCV, reporting HCV-positive patients to advanced centers, and charging HCV-positive patients more. In the knowledge section, the students' judgment about estimate of their awareness and general knowledge about Hepatitis C and HCV virus, transmission methods of HCV, the risk of intestinal transmission of HCV from an infected person or carrier to others, the risk of HCV transmission from infected mothers to fetus through the placenta or by breast milk in condition of baby's oral health, similarity of transmission methods of HCV to other hepatitis virus family, the dependency or independency of HCV virus pathogenesis to simultaneous presence of viruses HBV and HDV, the incubation period of HCV after entering host's body, the estimated risk of transmission of HCV in medicine and dentistry interventions from a virus carrier than the risk of transmission of HBV from the same person, clinical general consequences of HCV infection, the clinically important factor in positivity from an infected patient, the clinically important factor in positivity of a needle-stick person from an infected patient, the efficacy of vaccine to prevent Hepatitis C, the role of anti-HCV immunoglobulin in reducing the risk of HCV transmission to the body, reliable laboratory tests in diagnosis of HCV, routine tests used to diagnose HCV infection, possibility of conversion of final stages of infection to HCC (hepatocellular carcinoma), and treatment protocol in patients with Hepatitis based on common standards and standard drugs prescribed for patients with Hepatitis C. For each correct answer in knowledge and attitude sections, three and one points were determined respectively.

The researcher gave the questionnaires to the students and provided necessary explanations about the research objectives and controlled them, so that the students do not consult with each other or refer to other resources. Data obtained from research questionnaires was analyzed using SPSS software version 0.17. Chi-Square test was used to assess the effect of students' field (general, specialized) on their knowledge and attitude group about Hepatitis C.

## Results

The demographic data included student's academic term, gender, and general or specialized dentistry (Table 1 and 2).

the frequency of academic terms 7, 8, 9, 10, 11, and 12, were 17.5%, 13.75%, 13.75%, 17.5%, 20%, and 17.5%, respectively were regarded as the research population, To rate the students' response to knowledge -related questions (17 questions), 3 scores were assigned to each correct answer. In addition, samples were divided according to their attitudes to Hepatitis and one point was assigned to each of the students' correct answers. The frequency of correct answers to the knowledge and attitude questions are shown in Tables 3 and 4.

To evaluate the effect of student's field (specific and general) on their knowledge and attitude group, Chi-Square test the was used. The odds ratio of specialist students to general students was 2.5 in the group with high

knowledge and attitude compared to the moderate group 4.5 in the group with high knowledge and view compared to the poor group. Also, the odds ratio of female students to male students was 1.3 in the group with high knowledge and attitude compared to the moderate group and 1.8 in the group with high knowledge and attitude compared to the poor group.

**Table 1.** The demographic data for general dentistry

General dentistry			
Academic term	Total	Male	Female
7	14	7	7
8	11	6	5
9	11	6	5
10	14	7	7
11	16	8	8
12	14	7	7

**Table 2.** The demographic data for specialized dentistry

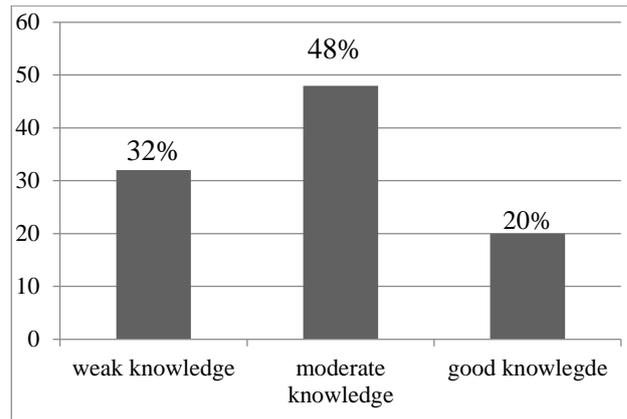
Specialized dentistry			
Type	total	male	female
Prosthetics	2	1	1
Restorative dentistry	2	1	1
Endodontics	2	1	1
Orthodontics	2	1	1
Oral surgry	2	1	1
Oral medicine	2	1	1
Periodontics	2	1	1
Pathology	2	1	1
Radiology	2	1	1
Pediatric dentistry	2	1	1

**Table 3.** The frequency of correct answers to the knowledge questions

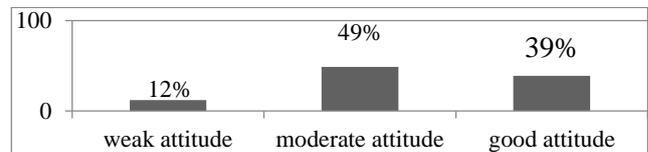
correct answers to the knowledge questions	Frequency	percentage
1	1	1%
2	5	5%
3	8	8%
4	9	9%
5	9	9%
6	9	9%
7	8	8%
8	8	8%
9	7	7%
10	9	9%
11	7	7%
12	7	7%
13	5	5%
14	4	4%
15	2	2%
16	2	2%
17	0	0%
Sum total	100	100%

**Table 4.** The frequency of correct answers to the attitude questions

correct answers to the attitude questions	Frequency	percentage
1	1	1%
2	4	4%
3	7	7%
4	9	9%
5	15	15%
6	25	25%
7	22	22%
8	14	14%
9	3	3%
Sum total	100	100%



**Chart 1.** The percentage of frequency of correct answers to the knowledge questions



**Chart 2.** The percentage of frequency of correct answers to the attitude questions

The results of this analysis showed that none of these variables are significantly associated with the knowledge and attitude about Hepatitis C (P value>0.05) with the Chi-Square test.

**Discussion**

According to the results, 32 students (32%) had weak, 48 (48%) moderate, and 20 students (20%) favorable knowledge about Hepatitis C. In addition, samples were divided according to their attitude and 12 students (12%) had poor, 49% moderate, and 39% good attitude.

Numerous studies have assessed different population’s knowledge and attitude about Hepatitis C. Gaze and colleagues (2006) indicated that the knowledge of health care workers were incorrect in some cases about blood transmission and its association to Hepatitis C, which can affect prevention and control programs. In their study, a questionnaire was anonymously completed by 190 health care staff participating in a training course and the results were compared among doctors, nurses, dentists (115), and others (66 cases) [20]. However, most cases were women, which has affected the generalizability of the results. Cohen-Moreno et al. (2010) investigated the knowledge of patients receiving methadone about Hepatitis C virus. In this study, 512 patients were assessed through interviews, out of which 53% were infected with HCV. The results showed that participants had weak knowledge about HCV and very limited knowledge about diagnosis and treatment [23].In this study the knowledge and attitude of patients’ group were assessed and the health care workers didn’t evaluated.

Proeschold-Bell et al. (2010) examined the knowledge about the management, transmission, and prevention of Hepatitis C virus among patients infected with HIV over 18 years. According to their results, knowledge about HCV infection was significantly associated with higher level of education and HCV infection and thus, health-related training is essential to prevent HCV infection [24]. However, a limitation of the research in addition to the

patients target group is reporting HCV, as some participants might not have a clear understanding of the types of Hepatitis, regarding the common conditions of Hepatitis A, B, and C. Prodanovska-Stojcevska et al. (2010) also assessed the nursing students' knowledge about Hepatitis C infection in Bitola Medical School of Croatia. The cross-sectional research was conducted on 210 master's student and the collected data of 110 participants in the classes of recent 6 terms was compared to 100 half-time students who had previously worked as a nurse. The results showed that they also needed further education in this regard, although their knowledge level about Hepatitis C was appropriate, which was more prominent among half-time students [21].

Chen and colleagues (2013) assessed the changes in the knowledge and attitude of patients with HCV infection and patients with HCV and HIV infection before and after education and demonstrated that educational intervention has increased their knowledge, but caused no change in their attitudes and needed interventional studies to change the attitude effectively about HCV and its treatment [25]. The study by Bianco et al. (2013) measured the level of knowledge and attitude of hemodialysis nurses in Calabria (Italy) about the prevention of Hepatitis C virus transmission. Positive attitude was significantly higher among nurses with more knowledge. The correct answers concerning transmission pattern ranged from 73.7% to 99.3% and was significantly higher in cases who knew the HCV patients' isolation is not recommended, who knew the previous blood infection should be registered, and among less experienced nurses. Researchers found the strong necessity of primary focus on the behavioral changes to prevent HCV infection among nurses [22].

In another study by Ghanei et al. (2013), knowledge and attitude of 424 medical students in Gilan University of Medical Sciences about Hepatitis B and C were assessed using a standard questionnaire. The results showed that married students, anesthesia students, students of the 4<sup>th</sup> academic year, and people working at a hospital had clearly higher mean scores of knowledge about HCV infection and their attitude about HBV and HCV had a positive correlation with their level of knowledge [26].

A general conclusion of various studies' results on Hepatitis C shows that none of the occupational groups or different people have complete knowledge about Hepatitis C and weakness is observed in all fields. Because the studied groups in the available researches are different from our study population, detailed comparisons between them was not possible. Undoubtedly the awareness of dentists, nurses, and doctors would be different due to different educational background. The initial purpose of this study was to assess the status of knowledge and attitude of dental students of Shahid Beheshti University to be able to offer more educational programs to raise the knowledge and improve attitude about Hepatitis C. Accordingly, there were some weak points in this study, despite the positive points; as the students participated in this study were young and did not have enough occupational experience of occupational diseases, the need to raise knowledge and attitude should be considered more in them. Most students in the study had moderate knowledge and a positive attitude on the question of risk of HCV infection in patients, their treatment in special clinics, and testing dentists for HCV.

There was a minor superiority in female's knowledge and attitude compared to male students and in specialized students' knowledge and attitude compared to general students, which can be associated to more comprehensive educations in this group. Generally, the results of ordinal logistic regression analysis showed no statistically significant association between variables of the research (student's field or gender) with their knowledge and attitude about Hepatitis C that seems to be associated to the fact that they have received relatively similar trainings in a uniform educational system that has reduced the effect of variables in this area. The limitations of this study was the sectional assessing and limitation in sample size, therefore it could be difficult to generalize these results.

## Conclusion

The results of the present study showed that most dental students had poor to moderate knowledge. Regarding the numerous risks of Hepatitis and since prevention is still the most important way to deal with this disease, it is essential that students and dentists receive the necessary training. Also, regarding the assessment of attitude most students had a moderate attitude and secondly good attitude. Despite the importance of assessing the status of knowledge and attitude about different types of diseases, especially viral diseases such as Hepatitis C among dental students, this study was only conducted in one university and the results are obviously generalizable only among this sample. Therefore, it is suggested that students of different dentistry universities in the country be randomly selected to assess their knowledge and attitude about Hepatitis C.

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