

Research Article

Knowledge, attitude and practice of Tanta University medical students towards hepatitis B and C

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ABSTRACT

Background: Egypt lies among the world's highest prevalence rates of HCV and intermediate levels of HBV infection. The objectives of the study were detection of the knowledge, attitude and practice of Medical Students of Tanta University towards hepatitis B and C.

Methods: This was a cross-sectional study, conducted in The Faculty of Medicine, Tanta University, Egypt; from 15th October 2013 to 15th of January 2014.

Results: The study included 185 Students; their ages ranged between 17 to 28 years with a mean 20 ± 1.731 years. Sixty percent of students were males and 65% were urban residents. 50.8% of the participants were in the basic level of the academic study. More than half (57.85%) of the participants had sufficient knowledge, 77.3% of them had a positive attitude towards hepatitis C and B and more than two-thirds (68.1%) showed good practice. A significant association occurred between a positive attitude and good practice. Sufficient knowledge was significantly recorded among older students, females, urban residents and the clinical stage students. The most frequent sources of student information were family or friends, internet followed by TV or radio, healthcare workers, and newspapers.

Conclusions: The students had reasonable knowledge, positive attitude and good practices towards B and C viral hepatitis. Areas of insufficient knowledge needed to be reinforced included some modes of transmission, complications, and treatment for B and C viral hepatitis.

Keywords: Hepatitis B and C, Knowledge, Attitude, Practice, Medical student

INTRODUCTION

Referring to a specific pathogen, the term "hepatitis" implies injury to the liver by inflammatory cells, a condition caused by numerous origins. All inclusive, most cases of hepatitis are caused by viruses, predominantly the hepatitis B and C viruses (HBV and HCV); these viruses are able to produce chronic infections. HBV has been recognized since 1965, and the first vaccines were approved in the early 1980s.

HCV was not identified until 1989. It was known as non-A, non-B hepatitis and no vaccine exists up till now. Both viruses are endemic in many countries of the globe, nonetheless, prevalence rates fluctuate extensively.

Above 170 million persons are infected with HCV worldwide which is nearly 3% of the total population¹

HBV is more widespread: 2 billion people have been infected globally, and 360 million suffer chronic infection.² The widely held number of infections are found in developing nations, especially in Asia and Africa. Both diseases could be complicated by cirrhosis of the liver and hepatocellular carcinoma (HCC) in their chronic sequelae. In spite of the fact that a minority of HBV- and HCV-infected patients, develop serious pathologies, still the burden of disease is considerable.³

Many studies have confirmed that Egypt's viral hepatitis epidemic, especially HCV, resulted from the 1960s and

1970s throughout a mass campaign of parenteral antischistosomal therapy (PAT) via incompletely sterilized glass syringes.^{4,6} Incidence is estimated at 2-6/1,000 per year in rural Egypt. Depending on the community prevalence of HCV viremia, it is estimated that 70,000-140,000 new infections occur annually, most of them in rural areas.⁷

In Egypt, The existing and upcoming burden of viral hepatitis is considerable.⁸ HBV accounts for 10-30% of chronic liver disease.⁹ Existing liver mortality, including liver cirrhosis and cancer, is over 40,000/year and is increasing yearly. This signifies more than 10% of the entire mortality. Liver disease is thus the second commonest cause of death in Egypt, after heart disease.¹⁰

Parenteral drug use, needle stick injuries, hemodialysis, tattooing and various sexual partners have been recognized as frequent means of viral hepatitis B and C transmission all over the world.¹¹ Parenteral routes are considered as the most probable issues for HBV and HCV transmission include unsterilized needles and syringes in health-care settings.^{12,13}

Between the health care providing staffs, HBV and HCV are transmitted by skin injury with contaminated needles and syringes or through unintentional inoculation of a minimal amount of blood throughout surgical and dental procedures. Knowledge regarding HBV, HCV infection, and safety measures is desired to reduce the acquired infections among health care providers. Health care personnel should have comprehensive knowledge of viral hepatitis infections, significance of vaccinations and practice of modest hygienic measures together with specific protective measures.^{14,15}

Medical students being a part of the health care delivery system are liable to the similar hazard as other health care workers at the time they come in contact with patients and contaminated instruments. They are predictable to start activities associated with patient care with the start of their clinical years. Consequently, this study was done to measure the knowledge, attitude and practice of medical students regarding hepatitis B and C infection and its transmission and prevention.

METHODS

Study design and setting

This study was a descriptive cross-sectional study. It was conducted in Faculty of Medicine, Tanta University, Egypt; during a period of three months from 15th October 2013 to 15th of January 2014.

Sampling and population

The study included a non-probability sample drawn from students in Tanta Faculty of Medicine with a sample size (N= 185 student). A representative proportion from

students was taken from all the six academic years. The least sample size was calculated Using Epi-Info program of statistics. The least sample accepted in medical students with a total population 4500 students, 70% average proportion for KAP and 10% confidence limits at 95% confidence level was 80 students.

Study subjects

Inclusion criteria

Medical students in all academic years in The Faculty of Medicine, Tanta University.

Exclusion criteria

Students of other faculties and those who refused to participate in the study were excluded.

Methods of data collection (tools)

The data collected via predesigned self-administered questionnaire. This questionnaire was based on preceding surveys and articles with alike aim.¹⁶⁻¹⁸ For validating the questionnaire, experts in standardizing questionnaire, Community Medicine, and Biostatistics, Internal Medicine, and Microbiologist confirmed the validity contents of the primary questionnaire.

The questionnaire was pre-tested during a pilot study that was conducted among 35 students. This was done to ensure clearness, significance, and settle on the time needed to answer all items. The results of the pre-test were evaluated, and some modifications were accordingly made. The average time needed to fill all items in the questionnaire was about 15 min. Results of the pilot study were not integrated into the final analysis.

The questionnaire sheet contains questions about:

- Sociodemographic data as sex, age, residence, university grade, medical and family histories of having HB and HCV infection.
- 18 Questions about their knowledge regarding hepatitis B&C (basic information, modes of transmission, complications, prevention and treatment).
- 5 Questions about the source of their knowledge
- 4 Questions about the attitude of the students regarding hepatitis B&C
- 4 Questions about the practices of the students regarding prevention and control of hepatitis B&C, including HBV vaccinations and personal protective measures.

Scores of knowledge, attitude and practice

As regards the knowledge, there were 18 questions, answered as correct, incomplete correct and wrong answer and scored as 2, 1 and 0. The total score of

knowledge ranged from 0 to 36. Those who achieved $\geq 75\%$ from the total score (≥ 27), was considered to have sufficient knowledge and those $< 75\%$ were of insufficient knowledge.

Regarding the attitude, there was four questions answered as yes, not sure and no and scored as 2, 1 and 0. The total score ranged from 0 to 8. Those who achieved $\geq 75\%$ from the total score (≥ 6), was considered to have a positive attitude while less than 75% considered having a negative attitude.

For practice, there were four questions answered as yes and no and scored as 1 and 0. The total score ranged from 0 to 4. Those who achieved $\geq 75\%$ from the total score (≥ 3) considered as having a good practice while those who achieved less than 3 as having poor practice.

Ethical consideration

Subjects were informed about the purpose and procedures of the study and benefits of sharing in it. Oral consent of approval obtained from each subject to participate in the study and those who refused participation were excluded. Confidentiality and privacy were guaranteed during the whole period of the study.

Statistical analysis of data

- Statistical analysis was performed using SPSS for Microsoft Windows, version 16.
- Qualitative data were tabulated and summarized in proportions and percentage, using chi-square test and fisher’s exact tests to test hypotheses whenever appropriate. - Quantitative data were summarized by the Mean \pm SD and range. The 5% level of significance was adopted in this study.

RESULTS

Table 1 displays Characteristics of the studied group of students and their knowledge sources. It reveals that the ages of the 185 participants ranged between 17 and 28 years with an average of 20 ± 1.731 . Nearly 60% of the participants (110 students) were males. Residents of urban areas represented 65% of the study group (120 students). The participants included nearly equal proportions of students from the basic and clinical academic levels (50.8% and 49.2% respectively). Only 5 students (2.7%) gave medical histories of B or C viral hepatitis and 62 (33.5%) students gave a positive family history of either B or C viral hepatitis.

Regarding sources of knowledge; family or friends and the internet were the most frequent sources 62.7% and 62.2% in that order followed by mass media (radio and TV.) and health care providers 57.8% and 55.7% correspondingly and lastly came newspapers (18.9%).

Table 1: Characteristics of the studied group of students and their knowledge sources.

Characteristics	Average and frequencies no. (%)
Age	
Range	17-28
Mean \pm SD	20 ± 1.731
Gender	
Males	110(59.5)
Females	75(40.5)
Residence	
Urban	120(64.9)
Rural	65(35.1)
Academic level	
Basic	94(50.8)
Clinical	91(49.2)
Past history of HCV infection	
Yes	5(2.7)
No	180(97.3)
Family history of HCV infection	
Yes	62(33.5)
No	123(66.5)
Knowledge sources	
Family or friends	116(62.7)
Internet	115(62.2)
Mass Media (Radio and TV)	107(57.8)
Healthcare, providers	103(55.7)
Newspapers	35(18.9)

Table 2 shows Knowledge, attitude and practices of students according to their socio- demographic characteristics, medical and family history of hepatitis C and B. In this table 57.8% of the participants (107 students) had sufficient knowledge. Their average age (23.0 ± 4.21) was significantly higher compared to that of the insufficient knowledge students (21.2 ± 3.98). Higher proportions of female participants (68.0%), urban residents (67.5%) and students in the clinical academic years (73.6%) had sufficient knowledge compared to males (50.9%), rural residents (40.0%) and students in the basic academic level (42.6%). No significant association did occur between either past or family history of B or C viral hepatitis and sufficiency of knowledge.

The table displays also that out of 185 participants in this study 143 students (77.3%) had positive attitudes towards B and C viral hepatitis. No significant association occurred between each of age, gender, residence, academic level of students, past and family histories of hepatitis (B and C) and their attitudes toward B and C viral hepatitis. From this table also 126 students (68.1%) reported good practices and 59 (31.9%) reported bad practices. No significant association did occur between socio-demographic characteristics of the participants (age, gender, residence and academic level), past and family histories of hepatitis (B and C) and their practices.

Table 3 shows the relationship between knowledge, attitude and practice of the participants regarding HBV and HCV infection. It displays that 91.6% of sufficient knowledge students had a positive attitude towards HBV and HCV infection compared to only 57.7% of insufficient knowledge students. 72.0% of the positive attitude students reported good practices compared to only 54.8% of the negative attitude students. No significant association did occur between student knowledge and their practices.

Table 4 displays students' correct, incorrect and not known information regarding B and C viral hepatitis. In this study the knowledge that tattooing, dental procedures

(including teeth brushing) and sexual contact are potential sources of HCV and HBV transmission was incorrectly known or not known by 20.0%, 13.5% and 32.9% of the participants respectively. Nearly two-thirds of the students (63.3%) did not know correctly whether food or water are vehicles of transmission of hepatitis B and C viruses. 18.3% of the study group did not know correctly that cancer liver might complicate hepatitis B and C. In this table also 34.6% and 49.7% of the students did not have correct information or did not know that there is a treatment for B and C viral hepatitis. Also, 13.5% of them did not correctly know that there is a vaccine for B viral hepatitis.

Table 2: Knowledge, attitude and practices of students according to their socio- demographic characteristics, past and family history of hepatitis C and B.

Socio-demographic characteristics	Knowledge		Significance	Attitude		Significance	Practice		Significance
	Sufficient 107 (59.8%)	Insufficient 78 (42.2%)		Positive 143 (77.3%)	Negative 42 (22.7%)		Good 126 (68.1%)	Bad 59 (31.9%)	
Age Mean±SD	23±4.21	21.2± 3.98	t: 3.459 P:0.0021*	23.41± 3.21	22.8± 4.05	t: 0.905 P: 0.351	23.77± 4.04	22.23± 3.99	t: 1.798 P:0.078
Gender									X ² :
Male No. (%)	56(50.9)	54(49.1)	X ² : 5.341	82(74.5)	28(25.5)	X ² : 1.173	71(64.5)	39(35.5)	1.591
Female No. (%)	51(68.0)	24(32.0)	P; 0.02*	61(81.3)	14(18.7)	P; 0.283	55(73.3)	20(26.7)	P; 0.21
Residence			X ² :						
Urban No. (%)	81(67.5)	39(32.5)	13.081	93(77.5)	27(22.5)	X ² : 0.008	84(70.0)	36(30.0)	X ² :0.01
Rural No. (%)	26(40.0)	39(60.0)	P ; 0.00*	50(76.9)	15(23.1)	P; 0.93	42(64.6)	23(35.4)	P; 0.93
Academic level									
Basic no. (%)	40(42.6)	54(57.4)	X ² : 18.31	73(77.7)	21(22.3)	X ² : 0.010	63(67.0)	31(33.0)	X ² :0.01
Clinical no. (%)	67(73.6)	24(26.4)	P : 0.00*	70(76.9)	21(23.1)	P; 0.91	63(69.2)	28(30.8)	P; 0.91
History of C or B Hepatitis									
Yes No. (%)	1(20.0)	4(80.0)	Fisher's exact:	5(100.0)	0(0.00)	Fisher's exact:	5(100.0)	0(0.00)	Fisher's exact:
No No. (%)	106(58.9)	74(41.1)	0.162	138(76.6)	42(23.3)	0.59	121(67.2)	59(32.8)	0.18
Family History of C or B Hepatitis									
Yes No. (%)	34(54.8)	28(45.2)	X ² : 0.343	43(69.4)	19(30.6)	X ² : 3.352	47(75.8)	15(24.2)	X ² :2.54
No No. (%)	73(59.3)	50(40.7)	P : 0.56	100(81.3)	23(18.7)	P; 0.07	79(64.2)	44(35.8)	P; 0.11

Table 3: The relationship between knowledge, attitude, and practice regarding HBV and HCV infection among medical students.

	Attitude		Significance X ² (P)	Practice		Significance X ² (P)
	Positive no. (%)	Negative no. (%)		Good no. (%)	Poor no. (%)	
Knowledge						
Sufficient	98(91.6)	09(8.40)	27.6375(0.000)*	75(70.1)	32(29.9)	0.46(0.48)
Insufficient	45(57.7)	33(42.3)		51(65.4)	27(34.6)	
Attitude						
Positive				103(72.0)	40(28.0)	4.46(0.035)*
Negative				23(54.8)	19(45.2)	

Table 4: Students' correct, incorrect and not known information regarding B and C viral hepatitis.

Information items	Students' Knowledge					
	Correct		Incorrect		Don't know	
	no	%	no	%	no	%
Basic information:						
- Causative organisms.	168	89.8	8	4.3	9	4.9
-The main affected organ.	178	96.2	4	2.2	3	1.6
Modes of transmission:						
-Un-sterilized syringes [true]	178	96.2	3	1.6	4	2.2
-Contaminated blood [true]	175	94.6	5	2.7	5	2.7
- Blades of barbers[true]	171	92.4	8	4.3	6	3.3
-Tattooing [true]	148	80.0	19	10.3	18	9.7
- Dental procedures and (tooth brush)true]	160	86.5	18	9.7	7	3.8
-Sexual contact[true]	124	67.0	43	23.2	18	9.8
- Scissors- surgical instruments (e.g. used during circumcision- operations)[true]	174	94.1	6	3.2	5	2.7
-Drug use[true]	161	87.1	13	7.0	11	5.9
-Food or water [false]	68	36.7	108	58.4	9	4.9
Potential complications:						
-Liver failure[true]	174	94.1	2	1.1	9	4.9
-Cancer liver[true]	151	81.6	11	5.9	23	12.4
-Deterioration in health[true]	174	94.1	2	1.1	9	4.9
Vaccination and treatment:						
- Presence of hepatitis B vaccine [true]	160	86.5	7	3.8	18	9.7
- Presence of hepatitis B treatment[true]	121	65.4	36	19.5	28	15.1
- Presence of hepatitis C vaccine[false]	49	26.5	114	61.6	22	11.9
- Presence of hepatitis C treatment[true]	93	50.3	72	38.9	20	10.8

Table 5: Attitudes of the participants towards B and C viral hepatitis.

Relevant situations:	Students' attitude					
	Positive		Negative		Not sure	
	No.	%	No.	No.	No.	%
Acceptance to get screened for hepatitis B and C?	157	84.9	22	11.9	6	3.2
Acceptance to get further investigations and treatment if found positive for hepatitis B or C?	158	85.4	15	8.1	12	6.5
Acceptance to marry a person known that he/she has hepatitis B or C?	52	28.1	97	2.4	36	19.5
Acceptance to share others in needles, shaving machines or toothbrushes?	151	81.6	29	15.7	5	2.7

Table 6: Practices of participants relevant to B and C viral hepatitis.

Practice	Yes		No	
	No.	%	No.	%
Use of sterilized syringe when required?	164	88.6	21	11.4
Asking barber to use new blades for shaving or hair cutting?	147	79.5	38	20.5
Sharing personal belongings (razors, towels, tooth brush) with others?	34	18.4	151	81.6
Having a blood transfusion before?	34	18.4	151	81.6
*Getting the blood screened for hepatitis B and C before transfusion?	23	12.4	11	5.9

*In the case of having blood transfusions.

Table 5 presents the attitude of the participants towards B and C viral hepatitis. It reveals that 11.9% and 3.2% of the study sample respectively did not accept or were not sure about accepting screening for B and C viral hepatitis.

8.1% and 6.2% of the participants either did not accept or were not sure to accept to get further investigations and treatment if found positive for hepatitis B or C. 52.43% and 19.6% of the study sample respectively did not

accept and were not sure to accept marriage with a hepatitis B or C person. Most of the students (81.6%) did not accept to share or practice sharing syringes, toothbrushes, or barbers blades with others.

Table 6 displays practices of Participants relevant to B and C viral hepatitis. It shows that 11.4% of the participants were not always using sterilized disposable syringes when required. 20.5% of the students did not ask barbers to use new blades for shaving or hair cutting. 18.4% of the sample shared personal belongings (razors, towels, and toothbrushes).

DISCUSSION

In human health research, KAP studies of specific populations could be conducted to assess the KAP towards a specific disease. These studies help to understand what people know about a specific disease (transmission, symptoms, ability to diagnose intervention necessity and risk behaviour). KAP surveys show also feelings of people towards the disease (are they scared of getting infected, are they willing to protect themselves against it and are they aware of the danger of the disease?). The practice questions give an idea on how they protect themselves against the disease and whether they engage in any risk behavior.¹⁹ In this study medical students were targeted as they might be exposed to infection either during their practical training or during their future career. They might have also a direct or indirect health education role in their communities and C viral hepatitis were the specific diseases in this research due to their high prevalence rates in addition to the availability of prevention and control measures in Egypt.

The present study revealed that 57.8% of the participants had sufficient knowledge about B and C viral hepatitis. Participants of higher ages, females, urban residents and being in the clinical academic level were significantly associated with knowledge sufficiency. These findings were in agreement with the results of a research held by Zuberi BF, et al in Pakistan during the year 2008 and a study carried out on Omani medical students during the year 2004.^{20,21}

In this study participants got their knowledge concerning B and C viral hepatitis mainly from family members and/or friends (62.7%) and the internet (62.2%). Mass Media (Radio and TV) were reported as a source of information by 57.8% of the studied group. Health care workers were the source of knowledge to a smaller proportion (55.7%). Newspapers played the least role in this respect. In another study major source of information was TV while the internet was the second source of information.²² Both studies agreed on the findings that smaller proportions of respondents got their information from health care workers. Respondents had access to a variety of sources of information regarding hepatitis, within their own family, communities and in the wider atmosphere such as internet or media. Electronic and

Mass Media were more common sources of knowledge than health care worker as the accessibility of these two sources are wider and easier. A matter indicating the need for strengthening health education activities provided by health care workers besides controlling health knowledge disseminated through media.

Areas of poor knowledge in this study included some of the modes of infection transmission, potential complications, and availability of specific treatment and vaccine. The knowledge that tattooing, dental procedures (including teeth brushing) and sexual contact are potential sources of HCV and HBV transmission was incorrectly known or not known by reasonable proportions of the participant. Nearly two-thirds of the students did not know correctly whether food or water is a vehicle of transmission of hepatitis B and C viruses this goes hand in hand with the findings of Amir Razi, et al in 2010.²² Despite the high ranks of B and C viral hepatitis among the risk factors for hepatocellular carcinoma, nearly one-third of the participants did not know correctly that cancer liver might complicate hepatitis B and C. In spite of the high prevalence of C viral hepatitis in Egypt and the great efforts directed to treat cases nearly half of the participant did not know that there is treatment for this disease. Also, more than one-tenth of them did not know that there is a vaccine against B viral hepatitis despite being a component of the expanded program of immunization since several years. These findings were in agreement with the results of Talpur et al in 2007.²³ who claimed that the lack in the knowledge concerning the availability of treatment for hepatitis C and a vaccine for hepatitis B might hinder health care workers efforts to control these diseases.

The present study showed that more than three-quarters of the participants had a positive attitude towards B and C viral hepatitis. Small proportions of the respondents had negative or non-sure attitudes towards accepting screening for B and C viral hepatitis, getting further investigations and treatment if found positive for hepatitis B or accepting marriage with a hepatitis B or C person. Most of the students in the current study (81.6%) did not accept to share or practice sharing syringes, toothbrushes, or barbers blades with others. These findings were similar to the results of Amir Razi et al in 2010 and Torda AJ et al 2008.^{22,24} The non-significant association between socio-demographic characteristics of the participants and their attitudes towards B and C viral hepatitis (Table 2) besides the significant association between knowledge and attitudes (Table 3) indicated that the areas of negative or non-sure attitudes could be corrected through improving knowledge.

In this study, more than two-thirds of the participants (68.1%) achieved good practice score (≥ 3). Participants achieved bad practices score (< 3) were distributed as 11.4% were not always using sterilized disposable syringes when required, 20.5% were not asking barbers to use new blades for shaving or hair cutting and 18.4% of

them were sharing personal belongings (razors, towels, and toothbrushes). This was in agreement with the findings of Amir Razi et al, Wajiha Raza et al published in 2008, Janjua NZ and Nizam MA in.^{22,25,26}

This study revealed that no significant association did occur between socio-demographic characteristics of the participants and their practices towards B and C viral hepatitis. The same was also observed for history and family history of B and C viral hepatitis (Table 2). Also, no significant association occurred between sufficiency of knowledge and good practices of the participant. Meanwhile, positive attitude was significantly associated with good practices (Table 3). This was also observed by Setia et al 2013.²⁷ And was in concordance with the results of a study held in Guilan University (Medical Sciences), Rasht, Iran 2013.²⁸ A matter which means that dissemination of relevant knowledge alone might not be able to modify bad practices. In order to modify bad practices and support good ones; knowledge has to be tailored and disseminated in a manner that can establish and strengthen positive attitude towards B and C viral hepatitis.

CONCLUSION

Medical students of Tanta University had reasonable levels of sufficient knowledge, positive attitude and good practices towards B and C viral hepatitis. Areas of insufficient knowledge included some modes of transmission, potential complications, and availability of treatment for B and C viral hepatitis and a vaccine for B viral hepatitis. Efforts to improve knowledge should not omit socio-demographic characteristics of the target population. Improving knowledge per se could not upgrade practices. These might be upgraded via building up and strengthening positive attitude towards the disease. From this study also, health care workers had a smaller role in the dissemination of knowledge concerning B and C hepatitis compared to Mass Media and Internet. Accordingly one might recommend: strengthening the health education role of health care providers besides assessment of relevant information disseminated through Mass Media and internet. Disseminated knowledge has to be prepared in a manner that can establish and support positive attitude towards B and C viral hepatitis.

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