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تقييم معارف واتجاهات الطلبة نحو التهاب الكبد نوع(بي) و(سي) في جامعة سوهاج/مصر

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الخلاصة:
الهدف: تهدف الدراسة إلي استطلاع معلومات وسلوك طلاب وطالبات جامعة سوهاج تجاه الالتهاب الكبدي بي و سي قبل وبعد التثقيف الصحي.
طريقة البحث: أجريت هذه الدراسة للفترة من 25/4/2011 - 8/11/2010 وكانت عينة الدراسة 1230من الطلاب من اربع كليات في جامعة سوهاج تمت الدراسة الاستطلاعية الأولى(الاختبار القبلي) من خلال استبيان صمم من قبل الباحثين تمّ تحقيق ثبات أدوات القياس من خلال استعمال معامل ارتباط بيرسون والذي كانت نتيجته (0,69) أمّا مصداقية أدوات القياس فقد تحققت من خلال عرضها على مجموعة من الخبراء من جامعة سوهاج لغرض مراجعتها وتقويم درجة مصداقيتها ووزع بين طلاب الحضور قبل الاستماع للمحاضرات التوعويه من خلال الندوات. أما الاستطلاع الثاني (الاختبار البعدي) أجري بعد نهاية الندوة وقبل المناقشة وقد استخدم نفس الاستبيان القبلي بالإضافة إلي 5 أسئلة تم إضافتها لمعرفة مدي تأثير الندوة علي معرفة واتجاهات طلاب وطالبات جامعة سوهاج.
النتائج: أشارت النتائج إلي إن نسبة الإجابات الصحيحة للطلاب الذين حضروا الندوات والتي كانت متعلقة بمدى المعرفة عن تعريف وأسباب وأنواع الفيروسات حيث كانت قبل التدخل التوعوي (2و51%, 3و33%, 2و25) علي التوالي وأصبحت بعد التدخل (1و95%, 2و86% ,6و97%) كما زادت نسبة الإجابات الصحيحة للطلاب زيادة ذات دلالة في الأسئلة الخاصة بالأشخاص الأكثر عرضة للإصابة بهذه الأمراض وتوافر التطعيمات والعلاج اللازم لهذه الأمراض حيث كانت قبل التدخل التوعوي (5و45%,8و35%,9و56%) وأصبحت بعد التدخل التوعوي (0و87% ,1و95% ,5و93%) .كما أظهرت الدراسة انه لا توجد علاقة بين السن و الجنس ومحل الإقامة سواء كان في الريف أو الحضر بينما وجدنا أن نوع الدراسة كان لها علاقة بمستوي المعلومات لدي الطلاب. (4و23%) كانوا أعمام وعمات الطلاب كما وجدت الدراسة أن 5و39% لم يخضعوا لأي اختبارات للالتهاب الكبدي الوبائي طيلة حياتهم .
الاستنتاج: يعد التثقيف الصحي أداة ضرورية لتحسين معرفة واتجاه وممارسات طلاب وطالبات الجامعة خاصة طلاب كليات العلوم غير الحيوية حول عوامل الخطر ومنع حدوث الالتهاب الكبدي بي وسي .وقد أثبتت هذه الدراسة مدي فاعلية برنامج التثقيف الصحي لطلاب الجامعة ضد الالتهاب الكبد الوبائي بي و سي وذلك بسبب التحسن الملحوظ في معرفة الطلاب.
التوصيات: توصي هذه الدر اسه على أهمية عقد المزيد من الدراسات المجتمعية لجميع طبقات المجتمع تمتد لفترات أطول وعلى عدد كبير من الطلاب من اجل تسليط الضوء علي أهمية وخطورة هذا المرض لزيادة وعي الطالب في المستقبل مع أيضا الحاجة إلى مزيد من التثقيف الصحي لخلق الوعي الصحي السليم للالتهاب الكبدي بي وسي للطلاب

Abstract:
Objective: To determine the effect of health education on the student knowledge in Sohag University regarding hepatitis B and C and to compare with four different faculties educational fields.
Methods: the study was conducted at Sohag University from the period 8/11/2010 - 25/4/2011. samples was consist of 1230 undergraduate students from four faculties in Sohag University, Sohag Governorate attended an interactive symposiums using Power Point presentation on present study and completed demographic and pre-post-interactive symposiums questionnaires. Both tests included the same questions with addition of five questions added to post-test about customs and attitudes that will be change after symposiums.
Results: The respondents were made up of 540(43.9%) students faculty of Arts, 410(33.3%) faculty of Nursing, 170(13.8%) faculty of Commerce and 110(8.9%) was faculty of Education. Eighty-four 68.3% of the total students were female while 31.7% were males with mean age 18.89 ± 0.98 years (range 17-23). Most of them (52.8%) were rural. The level of knowledge in pre-test scores were poor in all students especially non-biological science compare to the post-test, the overall test scores were improved significantly. There was statistically significant correlation between knowledge and type of education, while the age, gender, and students residence were not found to have an important influence on their knowledge scores as well the study revealed that 27.6% of students were have family history of hepatitis.
Conclusion: Health education through symposiums and awareness campaigns are effective in improving toward hepatitis knowledge and attitude among University students.

Recommendation: The present study demonstrates a need for further HBV, HCV education for a larger number of University students

Keyword: Assessment; Student; Attitude; Knowledge; Hepatitis B virus (HBV); Hepatitis C virus (HCV)

INTRODUCTION

Viral hepatitis is a global public health problem affecting millions of people every year, causing disability and death. Millions of people are living with viral hepatitis and millions more are at risk. Most people who were infected long ago with HBV or HCV are unaware of their chronic infection. They are at high risk of developing severe chronic liver disease and can unknowingly transmit the infection to other people. In the Eastern Mediterranean Region, it is estimated that approximately 4.3 million people are infected with HBV and 800 000 people are infected with HCV annually[1] ,and is consider one of the five important infections that causes premature death in the world[2]. Annually, at least one million people die due to hepatitis in the world[3,4]. All countries in the African Region consider viral hepatitis an urgent public health issue. The burden of viral hepatitis, though not accurately known, is believed to be one of the highest in the world . Hepatitis A, B, C and E are the types mostly found in the Region[1]. Egypt has the largest epidemic of HCV in the world, in the sample included both urban and rural populations and included all 27 governorate of Egypt. Over 11,000 individual (percentage of people) positive for antibody to HCV was 14.7% [5].

Both HBV and HCV are blood-borne viruses but have distinct routes of transmission. Hepatitis B virus (HBV) and Hepatitis C virus (HCV) infections account for a substantial proportion of liver disease worldwide, because the two viruses share similar modes of transmission and co-infection with the two viruses is not uncommon[6]. HBV is acquired by vertical transmission from mother or via horizontal transmission in childhood. However, HCV is primarily transmitted parenterally in adulthood by intravenous drug use, blood transfusion, or medically related parenteral exposures, but rarely through the placenta, breast-feeding, or sexual contact[7,8].

WHO records in 2012 stated that a comprehensive approach to the prevention of viral hepatitis includes a number of strategies help reduce transmission such as, advocacy and raising awareness of all types of viral hepatitis, available the safe and effective vaccines for HAV and HBV infections and an HEV vaccine has recently been licenced in China, implementation of blood safety strategies, infection control precautions in health care and community settings, safe injection and sex practices, harm reduction practices for injecting drug users, in addition occupational safety measures prevent transmission of viral hepatitis to health care workers prevent HAV, HBV and HCV transmission[1]. Health education about hepatitis B/C infections by running awareness programs was found necessary for all students especially for non-biological sciences students in order to improve awareness of these disease[9].

The previous studies showed that medical, dental and nursing students were lack the awareness about hepatitis B, its route of transmission and modes of prevention[10-11-12] .In Egypt in the study by Mohamed and Wafa [13] outlined that, scores of knowledge and practice among studied subjects were increased after participation in the education program. Also the results of this study illustrated that there was statistically significant correlation between knowledge, practice and educational level. Another study by Hassan [14] conducted to assess knowledge, attitude and lifestyle changes among chronic hepatitis C patients showed that, chronic HCV patients have low standard body of knowledge and negative attitude about their disease.

In university, students age is 18 and up years and share other peers in equipment, hair and scarves pins. As well in the future they may be parents advising their children or they may have contact with infected hepatitis patients. In addition high proportion of people in Egypt are illiterate, living below the poverty line and have a fragile health structure; many patients cannot afford costly treatment as the estimated cost of treatment for this disease is very expensive. So in Sohag, some efforts are being mad to raise awareness about hepatitis B and C and their prevention or modifying people's behavior may help to reduce the burden of disease in Egypt through the educational campaigns as symposiums by the researchers to fill the gaps in health education. Such information will serve as a guide for development of information, education, and communication activities for prevention and control of hepatitis B and C. For these reasons, the aim of this study was to determine the effect of health education on the student knowledge in Sohag University regarding hepatitis B and C and to compare with four different faculties educational fields.

METHODOLOG:

Research Design: Pre-post test study.

Setting: present study was conducted in Sohag University involving 1230 students four different faculties, adult Nursing Department- College of Nursing, Egypt, great hall meetings, Sohag University from the period 8/11/2010 - 25/4/2011.

Instrument:

Part I: Socio-demographic data:

Included personal data of the shared students such as: age, sex, type of education, residence, previous investigation, and family history.

Part II: Knowledge regarding hepatitis B/C:

Included 17 questions students related knowledge regarding hepatitis B \C viruses such as: causes, risk person, prevention, availability of vaccine and treatment, universal precautions, in addition one question ask about the benefit of health education.

Part III: Attitude regarding hepatitis B/C:

Included 3 questions students regarding hepatitis B/C attitude change such as: bad habits which causes blood born diseases, participation in health education for others, and desire for screening against hepatitis B\C after education.

Ethical Consideration:

To carry out the study, the official approval obtained from University Vice President for Post graduate Studies and Research and informed consent was obtained from each student before filling the questionnaire.

Technical design: The study is dividing to 3 phases:

1. Phase 1 included baseline data collection and pre-test evaluation:

Invitations University colleges for were sent to share in our symposiums colleague attendance include; Nursing, Arts, Commerce, and Education Faculties. After participants had accepted an invitation to the presentation prior, and the official approval obtained. All students shared in this study were asked to fill the questionnaire about a demographic at baseline followed by a questionnaire assessing hepatitis B and C viruses' knowledge to test their existing knowledge about hepatitis before start of the presentation. The questionnaire consisted of 17 closed-ended questions derived from topics covered in the presentation about different aspects of hepatitis, B and C infection developed by the researchers and based on the most reliable books about infectious disease. After rigorous revision by the experts, questionnaire were finalized based on

their recommendations, and the reliability was assessed using Cronbach′s alpha (0.69). The questionnaire was briefly pre-tested on a smaller group of students′ to ascertain practicability, cogency, and rendition of response. Before they commenced data collection three research assistants they were trained on how to administer the questionnaire and educated on universal precautions to enable them to understand any respondents' question. The structured questionnaire was prepared in Arabic language and reviewing and approved by a panel of expertise in this field for content validation.

2. Health education intervention:

After the questionnaire was filled out, all participants were given a 2-h standardized in-person didactic PowerPoint presentation in each symposium facilitated by the researchers, and a Public and Community health physician. PowerPoint presentation was conducted in Arabic language focus on general knowledge about hepatitis B and C such as definition, types, causes, mode of transmission, availability of vaccines and treatment. It also included information about universal precautions to prevent blood borne pathogens. Subjects were encouraged to ask queries related to topics and all the queries were answered by the investigator. The teaching materials, e.g. PowerPoint presentation, educational brochures, posters and cultural film about viral hepatitis were used as health education.

3. Post-test evaluation:

Following the end of each symposium and watching the presentation and before discussion. The post-test was administered contained the identical questions from the pre-test used, additional 5 questions were included in the question to test the customs and attitude changes after symposiums, such as bad habits which causes the transmutation of the disease, participation in HE for others, the desire for screening against hepatitis B and C after education, and the benefit of HE. The questionnaires were repeated to clarify the impact of the intervention program and retention and application of knowledge. ((Participants were unaware that they would be tested with the same question at end of the symposium and the students were reassured of the confidentiality of their opinions by ensuring that the responses were anonymous)). The questions of the instrument in the pre and post-test were multiple-choice and yes /no. The score system was arranged from 0 -32 points and the total knowledge score was categorized as "poor:<50^{th} percentile" ,"satisfactory: 50^{th} -70^{th} percentile" , "good:>70^{th} percentile".

Statistical Analysis:

Statistical analysis was performed using the SPSS program (SPSS for Windows, version 16.0). Results were presented as the frequencies and percentage. Chi-square test was used to determine if data were normally distributed. Person correlation analysis to test the significance of some variable and effectiveness of the symposium and to determine if the significant differences between the pre and post-symposiums test results was satisfactory. Differences were considered significant at $p < 0.05$.

Table (1): Socio-demographic characteristics of participants in the study sample (n= 1230)

Demographic variable	Frequency	Percent
Age (years):		
< 19 years	440	35.8
≥ 19 years	790	64.2
Mean ± SD (Range)	18.89 ± 0.98 (17 – 23)	
Sex:		
Male	390	31.7
Female	840	68.3
Domicile:		
Urban	580	47.2
Rural	650	52.8
Faculty:		
Faculty of Art	540	43.9
Faculty of Commerce	170	13.8
Faculty of education	110	8.9
Faculty of Nursing	410	33.3
Previous investigations for hepatitis:		
Yes	80	6.5
No	1150	93.5
Source of hepatitis B/C information:		
Classroom lectures and doctors	400	32.5
Family/friends/neighbors	300	24.4
Mass media (TV/ Radio/ Internet)	250	20.3
Personal study of books, magazines/ journals	100	8.1
Hepatitis B/C information brochures, posters etc.	97	7.9
Health workers	83	6.7

This table 1. shows that the distribution of the samples, as regards to their socio-demographic characteristics. The respondents were made up of 540(43.9%) faculty Arts, 410(33.3%) Nursing students, 170(13.8%) Commerce students and 110(8.9%) were faculty of Education. 68.3% of the total students were female while 31.7% were males with mean age of the all subjects was 18.89 ± 0.98 years (range 17-23). Most of them (52.8%) were rural. Regarding to the previous investigation who respondents done previously, it was found that the majority of students (93.5%) did not conduct any investigation previously. The major source of information regarding hepatitis B/C it was from classroom lectures and doctors 400 (32.5%), followed by 300(24.4%) by family, friends, neighbors and teachers.

Table (2): Pre-test, post test scores and increment percentages of the students knowledge regarding hepatitis B&C

Knowledge regarding hepatitis B/C	Pre-test				Post-test				P-value
	Un-satisfactory		Satisfactory		Un-satisfactory		Satisfactory		
	No.	%	No.	%	No.	%	No.	%	
Definition of virus	60	48.8	630	51.2	60	4.9	1170	95.1	0.000*
Types of viruses	920	74.8	310	25.2	30	2.4	1200	97.6	0.000*
Causes of viral hepatitis	820	66.7	410	33.3	170	13.8	1060	86.2	0.000*
Role of periodic examination in early detection	50	4.1	1180	95.9	0	0.0	1230	100.0	0.071
Any vaccines available	790	64.2	440	35.8	60	4.9	1170	95.1	0.000*
Any treatment available	530	43.1	700	56.9	80	6.5	1150	93.5	0.000*
Personal hygiene	550	44.7	680	55.3	0	0.0	1230	100.0	0.000*
Equipment of sterilizations	780	63.4	450	36.6	50	4.1	1180	95.9	0.000*
Disinfectants	1070	87.0	160	13.0	520	42.3	710	57.7	0.000*
Personal protective barriers	650	52.8	580	47.2	50	4.1	1180	95.9	0.000*
High risk persons	670	54.5	560	45.5	160	13.0	1070	87.0	0.000*
Way of get off sharp instrument	550	44.7	680	55.3	180	14.6	1050	85.4	0.000*
Precautions to prevent injury by contaminated sharp objects	1150	93.5	80	6.5	230	18.7	1000	81.3	0.000*
Procedures in injury occur	680	55.3	550	44.7	80	6.5	1150	93.5	0.000*

Chi-square test * Statistical significant difference (P < 0.05)

Table 2 presented the comparison between pre and post test percentage of the total students knowledge regard to identification of virus, type of viruses, causes of viral hepatitis B\C, high risk persons and availability of vaccines and treatment (51.2%, 25.2 %,33.3%,45.5%,35.8% and 56.9% respectively) on pre test compared to (95.1 % , 97.6 % ,86.2%,87.0%,95.1% and 93.5%) in the post test (after intervention). There was a significant improvement in students scores about different items related to viral hepatitis from pre and post educational intervention (p-value < 0.05). With exception of the difference in proportion of pre-and post-test in the question special by role of periodic examination in early detection of the disease was no significance difference (p>0.05).

According to students awareness proportion pre and post-test scores in personal hygiene, equipment of sterilization, disinfection material, and personal protective barrier. It was found the correct responses to four questions were statistically significant for improved post-test scores: identification of personal hygiene was raised from 55.3% to 100.0%; identification of the equipment of sterilization was raised from 36.6% to 95.9%; identification of disinfectants material was raised from 13.0% to 57.7%; identification of protective barriers was raised from 47.2% to 95.9% while those who identification of the high risk persons varied from 45.5% to 87.0%. There was a significant in students knowledge items difference related to universal precautions from pre and post test educational intervention (p-value <0.05).

There were an improvement in student awareness in post-test scores for identification of the way to get of sharp instrument, precautions to prevent injury by contaminated sharp objects and the procedure in injury. Correct responses to three items were statistically significant improved in post-test scores: the percent of students identification of the way to get of sharp instrument was raised from 55.3% to 85.4%; identification of behavior to prevent injury by sharp instruments used was raised from 6.5% to 81.3% ;while those who identification of behavior in injury increase from 44.7% to 93.5%.

There is a significant difference between pre and post test of students (p-value <0.05). Table2.

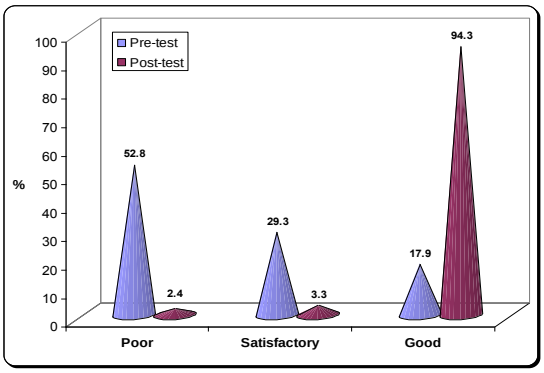

Fig. (1): Score of knowledge about virus B&C in pre and post-tests

Test total scores of students knowledge about hepatitis B\C. illustrates the changes in pre- vs. post-test scores for the students knowledge. It was found that, the majority 94.3% of the students achieved good level score of knowledge regarding to hepatitis B\C, followed by 3.3% had satisfactory and 2.4% got poor after educational intervention compared to pre-test the slightly less than two-thirds reported were poor knowledge (52.8%).

Table (3): Correlations of student's knowledge and some variables in the study groups pre and post-education

	Level of knowledge about hepatitis C						P-value
	Poor		Satisfactory		Good		
	No.	%	No.	%	No.	%	
Age:							
< 19 years	220	50.0	140	31.8	80	18.2	0.878
≥ 19 years	430	54.4	220	27.8	140	17.7	
Sex:							
Male	220	56.4	120	30.8	50	12.8	0.606
Female	430	51.2	240	28.6	170	20.2	
Residence:							
Urban	320	55.2	140	24.1	120	20.7	0.453
Rural	330	50.8	220	33.8	100	15.4	
Faculty:							
Faculty of Art	380	70.4	150	27.8	10	1.9	
Faculty of Commerce	110	64.7	60	35.3	0	0.0	0.000*
Faculty of Education	70	63.6	40	36.4	0	0.0	
Faculty of Nursing	90	22.0	110	26.8	210	51.2	

* P-value =< 0.05

Table 3. Describes the correlation between total knowledge regarding to hepatitis B\C and some variables in the study group pre and post implementation of health education. It points a positive statistically significant correlation between post educational knowledge score and type of education ($p < 0.05$). While there was no significant statistically differences between total knowledge score and age, sex and students residence.

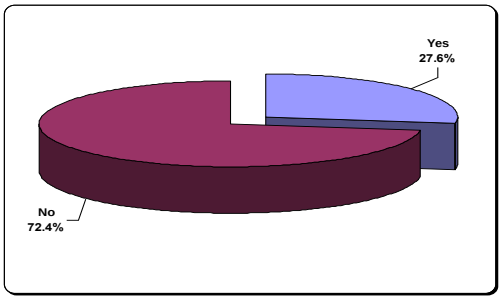

Fig. (2): Family history of viruses

Figure 2. Added another dimension to HBV and HCV infection. The figure illustrated the students family history of hepatitis B\C. It was found 27.6% of students have family history of hepatitis.

Table (4): Type of students relation to infected patient by viruses B &C

	No. (n= 123)	%
Type of student relation to infected patient:		
Mother	20	5.9
Father	60	17.6
Both parents	20	5.9
Brother	30	8.8
Cousin/ nephew	30	8.8
Grandfather/ Grandmother	60	17.6
Husband	10	2.9
Uncle/ aunt	110	32.4

Table 4 shows the type of student relation to infected patient by hepatitis B\C. It was found the uncle/aunt were the most infected member in their families followed by father, grandfather, and grandmother (32.4%; 17.6%; 17.6% respectively).

Table (5): Distribution of students' attitudes toward bad habits change, participation in HE, desire for screening and benefit of HE

Items	No. (n= 123)	%
Bad habits changes:		
Yes	1160	94.3
No	70	5.7
*** Habits changes after education:**		
Avoid contaminated blood	800	69.0
Avoid hugging an infected individuals	480	41.4
Sure of sterilized equipment with dental care	720	62.1
Avoid use other equipment as teeth breach, scissors, glass, razor	860	74.1
Avoid needle stick	720	62.1
Use sterile Syringe (single use)	800	69.0
Participation in health education:		
Yes	1180	95.9
No	50	4.1
Screening after education:		
Yes	990	80.5
No	240	19.5
Get benefit of health education:		
Yes	1230	100.0
No	0	0.0

*****More than answer

Table 5 shows the students attitudes toward bad habits change, going to screening and participation in health education after health education. It was found 94.3% of the students stated the most habits that will be change to prevent the transmission of infection for hepatitis viruses, was avoid sharing personal belongings as (glass, razor, teeth breach, scissors) of other. Also the majority of students said that, they will be participating in health education for other and conduct periodic screening (95.9%; 80.5% respectively). On the other hand, the entire students in 4 colleges reported that, get benefited from the education and knowledge offered and the information about hepatitis B and C was easy to understand and reported that they learned from the health education.

DISCUSSION:

Hepatitis is a public health threat particularly in Egypt requiring prompt attention. Counseling and health education about epidemiology and medical aspects of the disease would probably improve knowledge and attitude. To control infection, efforts should be spent to raise awareness about hepatitis and their prevention or modifying people's behavior. Reduction of the burden of disease in Egypt may be through the educational campaigns[14]. The present study showed that the knowledge of students about hepatitis B and C and the use of preventive measures was inadequate before education and improved after participation in the health educational program. These results are consistent with the finding of Abou Shady[15] who stated that, the staff's knowledge about viral hepatitis and their complain with preventive percussions increased from pre-test to post-test. In Fayoum, Egypt[13] noticed, in addition to increase in the scores of knowledge and practice, there was a significant correlation between knowledge, practice and educational level. Razi et al. [9] added that knowledge attitude and practice studies are useful steps to asses extent to which an individual or community is in a position to adopt a disease risk-free behavior for this disease. In the study by[16] reported that, Ministry of Health activities, hospitals and specialized centers activities and educational campaigns to increase awareness of population at risk and general population recommended. These activities should have the priority to encourage people to take a more active role in preventing exposure to HCV and/or modifying their behavior that permit transmission of HCV to reduce the burden of HCV disease on health related QOl of infected patients in Egypt.

According to the mode of transmission, it was found the abysmal score 33.3% of student knowledge about of the mode of transmission in the pre-test compared to post-test, the percentage is increased to 86.2%. These results is in agreement with[11] who reported that, unsafe blood transfusion as a risk factor of hepatitis B was known by 35.2%, where prevalence of knowledge regarding reused needles and unsafe sex as risk factors were known by one fifth and one tenth of the respondents respectively. In the study by[10] concludes that there is a lack of awareness among the medical students entering into the profession about the hazards of hepatitis B, its rout of transmission and modes of prevention. Moreover all the students were not vaccinated against hepatitis B, which made them more vulnerable to the disease.

The pre-test results showed that the knowledge of student about personal hygiene after accidental contact with blood, body fluid, secretions, or contaminated items in pre-test was low and improved after pos-test (55.3% vs 100.0%). The study conducted by Mohamed and Wafa[13] revealed that, the nurses practice hand washing was low frequency observed in the pre-test and improved after participation in education

program. This may be attributed to inadequate knowledge of the importance of hand washing before and after procedure. El-Ayyat et al. [17] added that, the staff and students nurses in a study assessed the infection control only without intervention needed to be educated in washing their hand.

Our study showed that 35.8% of students only knew the availability of vaccines for hepatitis B and 56.9% knew the availability of treatment and the correct response to this items differed in before and after education (95.1%,93.5% respectively). These results were consistent with [18] who claimed that, about 6.4% and 87 % of the students were unaware of vaccination against hepatitis A and hepatitis B respectively. None of the students had taken vaccine against hepatitis A where two-thirds of the students had been vaccinated for hepatitis B. On the contrary, in the study by Khan et al. [19] 85% of the respondents indicated that they were aware of availability of a vaccine for hepatitis B. There was a big jump in the knowledge regarding the treatment availability in the students in post-test. These results are consistent with [20] who concluded that, the awareness for the presence of medicines to treat hepatitis B was greater for the students after they were included in a curriculum.

In the present study the health education intervention was successful in a significant rise of the knowledge about disinfectants materials used for sterilization of the equipment and instruments (13.0% vs 57.7%). In the study by Razi et al. [9] claimed that, knowing facts and having proper attitudes and behaviors are critical to prevent spread of these infection.

Our study showed that, the students' attitudes toward behavior change about the proper way of getting rid off the sharp instruments increase from 55.3% to 85.4% in pre and post-test respectively this result return to used real situation and open discussion focused on the topic. In the study by Barikani, and Afaghi[21], 20.9% of respondent did not have any knowledge toward needle bent before disposal. Another study by[22] suggested that, guidelines to minimize the risk of HBV, HCV and other blood-born pathogens to health workers. In a study conducted by[13] done in specialized medical units at Mansoura University Hospital showed that, the knowledge of nurses about hepatitis C and the use of preventive measures were inadequate before educational program and improved after participation in the program. Also the results were statistically with significant correlation between knowledge, practice and educational level.

The present study showed that 93.5% of student have not been screened for hepatitis B and C viruses. These results is convenient with Khan et al. [19] who reported that about half of the respondents indicated that they were screened for hepatitis B and only 27.1% were screened for hepatitis C. In the same line in the study by [23] said that most of the students had knowledge on the diseases transmitted by contaminated sharp objects e.g. HBV, HCV and HIV, but 36% of the students reported that hepatitis C infection could be prevented by vaccine. Only, 44.2% of the students correctly answered that pre-vaccination test was not necessary while 56.1% believed that post vaccination test was necessary in relation to hepatitis B immunization. Our study also revealed that, 27.6% of students have family history of hepatitis, and the uncle\aunt were the most infected member in their families. This results is in agreement with[24] reported that, family members of patients with chronic HCV infection are at increased risk of HCV infection but the prevalence of HCV among family members of patients with occult HCV infection is not known.

According to personal protective barriers only 47.2% of the students stated that, should be aware of the protective barriers while dealing with the blood and body fluid to protect themselves from blood born-infection and after education had substantially improvement compared to pre-test ($p< 0.005$). In the study by [23] some students thought that wearing gloves was of no benefit, as the needle would penetrate the glove. Here, majority of incidence of needle sticks injuries occurred during medicine posting (48.5%) followed by family medicine and community medicine posting(42.4%). A similar study on health science students in Northeast China reported that, the students displayed a general lack of knowledge of occupational exposure standards[25]. In a study about impact of knowledge about post exposure prophylaxis among nursing students, reported that the unsatisfactory scores observed in the pre-test questionnaire could be a reflection of the wider ignorance regarding the disease in the general population[26].

When we examined differences in the students of pre and post-test levels of knowledge about high risk persons, we found significant differences in the knowledge at pre-test scores compared to post-test scores. This result reflects gains in incorrect knowledge for the high-risk person for HBV and HCV. These results are in agreement with a study don on the male medical students at a private university in Sindh, Pakistan, which assessed the effect of clinical experience on the knowledge regarding hepatitis B. It was found that, 30.4% students recognized surgeons as the group of people at risk to acquire hepatitis B infection, 20.9% and 26.4% knew risk for paramedical staff and commercial sex workers respectively, while only 9 3.3% students knew that medical students are at risk of acquiring infection[27].

According to the correlation between students knowledge level and some variables in the study group pre and post implementation of health education. It was found that, no significant difference between the students age, sex and residence. These results are inconvenient with another survey in medical students by [19] who reported that, female students showed significantly higher awareness in this regards than male students. The student above 20 years of age showed higher knowledge for questions than younger age. On the other hand in the study conducted by[28] on rural dental students college in Maharashtra, India noticed that, students had adequate awareness and perception level about awareness of hepatitis B infection.

Our study highlighted that the knowledge scores of the students nursing college were significantly higher than those of other colleges ($P<0.005$). This results is in agreement with Maroof et al. [11]who reported that, there was a significant difference in the proportion of students of the different faculties about the correct knowledge about hepatitis B. Mahran and Qalawa [29] said that, today's student nurses are tomorrow's nurse. Hence they need to be educated more and more on the mode of transmission and prevention of hepatitis. In the same line[9] added that, the gaps in knowledge were identified which need to be strengthened in students especially in non-biological sciences group.

According to student desire for screening against hepatitis B\C after education, it was found, 80.5% of the students agreed to do that. These results is consistent with[9] who noticed that, more than half of both groups wanted to be vaccinated against hepatitis B and almost three quarters of both groups were willing to be screened against hepatitis B and C.

According to students assessment of the benefit of the health education, the entire of students (100.0%) reported that, the information about hepatitis B and C verses was

easy to understand and that it taught them about hepatitis and they learned from the health education. This results is in agreement with[20] who reported that, over three-quarters of attendants reported that the information about HBV was easy to understand (77%). Nearly all reported that they learned from the curriculum (94%) and that the activities and handouts were easy to understand (94%). In the study by Min Swe et al. [23] added that, a preventive measures, the health educational programs can produce positive changes in both knowledge and attitudes toward safety protocols. [30] added that, we must educate the students in order to learn all infection control measurements.

CONCLUSION:

The present study indicates that there is lack of knowledge level about hepatitis B/C among University students in pre-test scores compare to the post-test education. This indicated to the retention of knowledge imparted to the students was satisfactory. Also the result of this study illustrated that there was statistically significant correlation between knowledge and type of education, while the age, gender, and students residence were not important influence on their knowledge scores. As well the study revealed that 27.6% of students were having family history of hepatitis, and the uncle\aunt were the most infected member in their families. Based on these findings,

RECOMMENDATION:

1- The present study demonstrates a need for further HBV, HCV education for a larger number of University students from different geographical areas to achieve more generalizable, to increase knowledge toward blood born diseases and to create awareness among them, that according to needs and with approaches suitable to community cultures and values.

2-The preventive measures should be taken by management team of the Universities as well by government for running awareness programs to control this disease, because the students are one of the best groups to be addressed for health education regarding hepatitis who could then act as resource of their families.

3-National endeavors are recommended to boost the contents of curricula related to blood born diseases in order to fill the gaps in the knowledge that underlies most of the misconceptions.

4-Carefully designed strategy with multiple educational approaches directed to all strata of population has to be devised at an early stage through conduction of conferences, workshops, training courses and also development of camps in the rural areas.

5-Awareness campaigns to be launched for various community factions responsible for transmission of such deadly diseases. Programs should included younger individuals, less educated adults and elaborated on the potential serious health consequences of hepatitis B and C. Vehicles for public education should include the physicians' offices and media

6-Continuing in-service education programs on infection control measures for all students and risk groups in our country. Also the dental educators should be alert about the importance of educating their students clearly and comprehensively about infection control measures.

Limitation to this study includes the scarceness of topic on non-biological students colleges in pre and post-test. The data on intention to follow-up with students was self-reported and the design of the study did not allow for the evaluation of long-term retention of knowledge.

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