

Screening of Hepatitis C Virus among Final year Nursing Students at Helwan University

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Abstract: Hepatitis C virus (HCV) is a common, serious cause of chronic liver disease and liver damage. The World Health Organization (WHO) has reported that more than 500 million people are living with chronic viral hepatitis in the world. Health-care workers including nurses are potentially at high risk of blood-borne diseases such as HCV. **Aim:** This study aimed to do screening of HCV infection among final year nursing students at faculty of nursing and technical institute of nursing at Helwan University. **Design:** This study utilized a descriptive-analytical research design. **Setting:** The study was carried out in the faculty of nursing and technical institute of nursing at Helwan university, Egypt. **Sample:** Convenient sample of 220 male and female students, 101 students from second year of technical institute of nursing and 119 students from fourth year of faculty of nursing. **Tools:** Two tools were being utilized to collect data, these tools were developed by the researchers it includes: I- Socio-demographic data sheet: It covers socio-demographic characteristics such as age, sex, educational level, current residence and marital status. II- Knowledge Assessment tool: It involves questions related to symptoms, mode of transmission, prevention, treatment, diagnosis and complications of HCV. **Results:** The study revealed that (55.5%) of the study sample age ranged from 21 year to 23 year, with mean age $1.55 \pm .498$ and (50.9%) of them were males. There is also significant correlation between current residence and gender and between total awareness of prevention and treatment of HCV and total awareness of its complications. **Conclusion:** The results of this study illustrated a statistically significant correlation between total knowledge of HCV and total awareness of prevention, treatment and its symptoms. There is a significant correlation between total awareness of prevention, treatment of HCV and its complications. **Recommendations:** Expand hepatitis C virus screening into other faculties in the university because most of university students come from rural areas. Health education about hepatitis C infection by running awareness programs for all students especially for non-medical students in order to raise awareness of them by HCV.

Keywords: Final Year, Nursing students, Screening of hepatitis C virus.

I. INTRODUCTION

Hepatitis C virus (HCV) is a blood-borne infection which can be transmitted through the receipt of donated blood or organs, intravenous drug use, sharing of drug equipments, and reuse of injection needles. About 2–8% of HCV-infected mothers infect their children during pregnancy. Sexually transmitted infection has been disputed. There is no available vaccine for hepatitis C till now (Klenerman & Dusheiko, 2015). Hepatitis C virus (HCV) is counted as a worldwide health problem, which can cause both acute and chronic hepatitis infection. The infection of most acutely infected people eventually becomes chronic. Cirrhosis, portal hypertension, hepatic decompensation, and hepatocellular carcinoma are examples of the complications of severe hepatitis C, which result in around 500,000 deaths per year (WHO, 2015).

One of the challenges with diagnosing HCV infection is that it is often asymptomatic. Screening and testing for HCV infection is a basic step in identifying those who are unaware of their infection. Furthermore, the diagnosis of HCV infection can help reduce the burden of disease and decrease transmission to those at increased risk of infection and those at risk of reinfection. The more people with HCV infection are treated, the less transmission and the fewer new cases (Westbrook& Dusheiko, 2014).

Healthcare workers who are exposed to needle- stick injuries in an occupational setting are at risk because of exposure to infectious blood and other body fluids. Different resources have proved that healthcare workers, more than the general population, are at increasing risk of becoming infected(Aida B, Francesca B, Carmelo, Claudia P., Maria P., 2013). Medical staff and the laboratory personnel have been infected more than the others and their positive serological tests are 2 to 27 times greater than those of other health professionals. As medical field students are in the risk group, due to future occupational hazards, and 40% of hepatitis cases in the world were caused by occupational substance exposures(Golshiri P., Badrian M., Badrian H., Isfahani MT, Meshkati M., 2011).

Nursing students are a group of health care workers that are at high risk to get HCV infections because of their direct contact with patients, blood and other body fluids during their professional training, and lack of experience and professional skills increases the risk of infection in the course of invasive medical procedures. Nursing students receive percutaneous injuries as often or more than health care workers and are, therefore, at greater risk of occupational exposure to HCV infections than health care workers, a fact that might partially be explained by poor knowledge and non-adherence to universal infection control procedures(Ibrahim N, Idris A., 2014).

In Egypt, the situation is quite worse. Epidemiologically, Egypt show higher level of anti HCV antibodies than other countries Egypt has the highest recorded prevalence of HCV in the world with an estimate of 10% of the population are infected while 7% are chronically ill, mortality is estimated by 40. 000 Egyptians a year and at least 1 in 10 of the population aged 15 to 59 is infected(Benova L., Awad SF., Miller FD., Abu Raddad LJ., 2015).

Screening asymptomatic patients who may have an increased likelihood of being infected with HCV is an important step toward improving the detection and ultimately treatment of infected persons . So that screening for HCV is an important aspect for disease prevention among students by early detection of the virus and providing early and proper treatment and maintaining good health for all individuals in the community(Jakobsen J., et al., 2016).

Significance of the study:

Hepatitis is an inflammation of the liver. There are several strains of viral hepatitis. The most common types are A, B, and C. HCV is the most widespread blood-borne disease in the United States(U.S.). An estimated 2.7 to 3.9 million people have chronic HCV infection. The virus invades the cells in the liver and causes swelling and dysfunction(CDC., 2016). More than 170 million people Worldwide have been infected with HCV. This includes around 23 million persons in the Middle East region, which represents 1–2% of overall prevalence. Egypt is said to have the highest prevalence internationally with an estimated 14.7% of the total population being seropositive for HCV(Esmat G., 2013).

Aim of the Study:

This study aimed to do screening of HCV infection among final year nursing students at faculty of nursing and technical institute of nursing at Helwan University through:

- 1-Assessing the knowledge of nursing students toward HCV.
- 2- Find out the extent of HCV infection among nursing students .

II. SUBJECTS & METHODS

Design: This study utilized a descriptive- analytical research design.

Setting: The study was carried out in the faculty of nursing and technical institute of nursing at Helwan University.

Sample: Convenient sample of 220 male and female (all the students), 101 students from second year of technical institute of nursing and 119 students from fourth year of faculty of nursing. The current study was conducted among final year students who are expected to have adequate background knowledge and a cautious attitude toward such contagious diseases as hepatitis C.

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Data Collection tools: Two tools were being utilized to collect data include:

I- Socio-demographic data sheet: This tool was developed by the researchers. It covers socio-demographic characteristics such as age, sex, educational level, current residence and marital status.

II- Knowledge Assessment tool: This tool was developed by the researchers. It involved fifteen questions related to knowledge of HCV, its causes and mode of transmission.

Nine questions related to HCV symptoms, Nine questions related to prevention, treatment of HCV, and diagnosis and eight questions related to complications of HCV.

Scoring system: items were scored one = Yes, and Zero = No.

Validity:

The validity of the tools were tested by offered to 5 academic expertise of medical surgical nursing from the Faculty of Nursing , Helwan and Ain Shams to determine relevance, clarity, completeness and comprehensiveness of the tools, experts responses were either agree or disagree for the face validity. Then their opinions are reviewed and final tools were prepared and used.

Reliability:

The reliability of the tools was measured through ten percent of the sample using the established questionnaire and retested after one week on the same sample. Answers from repeated testing were compared (test-re-test reliability = 0.84%). Cronbach's Alpha reliability= 0.84.

Ethical considerations:

The researchers explained the objective and aim of the study to the subjects who agreed to participate in the study. Subjects were informed that they are allowed to choose to participate or not in the research and that they have the right to withdraw from the research at any time. Data collection was for research only and it burned after data analysis. They were reassured that the responses to the questionnaires would be anonymous and that the collected data will be kept confidential and used only for research.

Pilot Study:

A pilot study was carried out on 10% of sample size, involving 25 students to evaluate the efficiency, reliability, clarity and applicability of the tools. Subjects included in pilot study excluded from the total sample after modification of study tools were done.

Field work:

After obtaining official permission to carry out the study. The researchers were explained the purpose of the study to students. The oral consent was obtained from the participants. The data collection of the study was covered a period of four weeks from beginning of April 2017 to the end of it in the previously mentioned settings. Blood samples taken from students in a scheduled time with cooperation with Elshams Lab in Helwan. Results of investigations sent formally to the vice dean of community service and environmental affairs. Study tools filled during students interview. The questionnaire was self administrated. The time for answering was 15 minutes.

Administrative Design:

The present study was carried out after taking an official permission from the dean of faculty of Nursing, Helwan University, after the aim of the study were explained clearly.

Statistical analysis:

All statistical analyses were performed using SPSS for windows version 20.0. Data were tested for normality of distribution prior to any calculations. Continuous data were normally distribute and were expressed in mean \pm standard deviation (SD). Categorical data were expressed in number and percentage. Statistical significance was set at $p \leq 0.05$.

III. RESULTS

Table (1): Socio demographic characteristics of the study sample(n=220):

Items	No	%
Age:		
18-20	98	44.5
21-23	122	55.5
Mean± SD 1.55±.498		
Gender		
Male	112	50.9
Female	108	49.1
Mean± SD=1.49±.501		
Educational level		
2 nd year technical institute	101	45.9
4 th year faculty of nursing	119	54.1
Current Residence		
Rural	106	48.2
Urban	114	51.8
Marital Status		
Single	203	92.3
Married	17	7.7
Mean± SD=1.07±.267		
Working with study		
Yes	49	22.3
No	171	77.7
Mean± SD=.22±.417		

Table(1) shows that, (55.5%) of the students in the current study were ranged from age 21 year to 23 year and (50.9%) of them were males. This table also revealed that, (54.1%) of the study sample were students in fourth year faculty of nursing and (51.8%) of them live in urban areas. In relation to marital status, (92.3%) were single. (77.7%) of the study sample did not work with study.

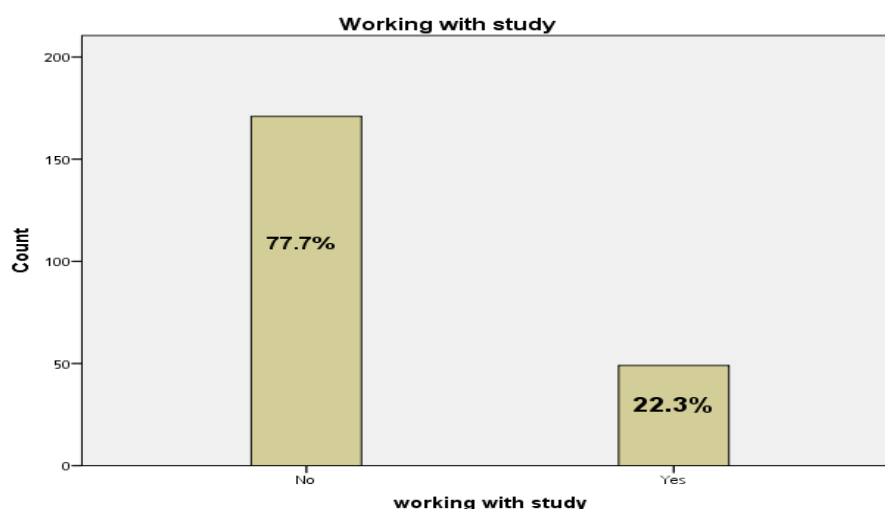


Figure (1) students percentage of working with study:

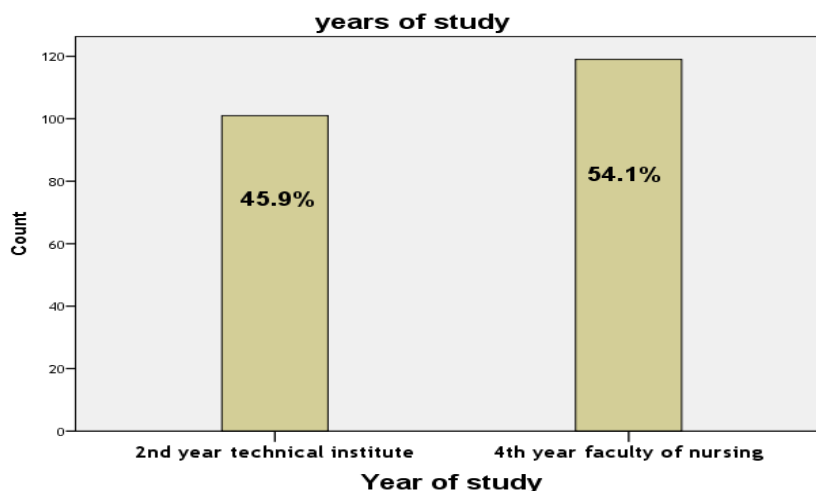


Figure (2): Students percentage of years of study.

Table (2): Frequency and percentage distribution of the study sample regarding students knowledge about HCV(n=220):

Items	No	%
1-Is there anyone in your family infected with Hepatitis C?		
Yes	36	16.4
No	184	83.6
2-Is Hepatitis C disease caused by Virus?		
Yes	168	76.4
No	52	23.6
3-Do You know other types of Hepatitis?		
Yes	172	78.2
No	48	21.8
4-Do you know how to care for patient with Hepatitis C?		
Yes	166	75.5
No	54	24.5
5-Have you ever had needle prick injury?		
Yes	64	29.1
No	156	70.9
6-Have you been tested for Hepatitis C before?		
Yes	29	13.2
No	191	86.8
7-Do You Know how to diagnose Hepatitis C?		
Yes	177	19.5
No	43	80.5
8-Can Hepatitis C diagnosed by Blood sample?		
Yes	187	85.0
No	33	15
9-Can hepatitis C be diagnosed by PCR?		
Yes	106	51.8
No	114	48.2
10-Can hepatitis C be diagnosed by Abdominal X ray?		
Yes	27	12.3
No	193	87.7
11-Can Hepatitis C be diagnosed by Abdominal Ultrasound?		
Yes	28	12.7
No	192	87.3
12-Can Hepatitis C be diagnosed by liver biopsy?		
Yes	18	8.1
No	202	91.8

13-Is there a diet for patients with hepatitis C?		
Yes	49	22.3
No	171	77.7
14-Do you know what foods are allowed for liver disease patients?		
Yes	135	61.4
No	85	38.6
15- Do you know what foods are forbidden for liver disease patients?		
Yes	105	47.7
No	115	52.3

Table (2) illustrates that, (83.6%) of the study sample has no one infected by hepatitis C in their family, (78.2%) of them knew that there are other types of hepatitis and about the same percentage knew that is caused by virus infection. In relation to needle prick injury, (29.1%) of the study sample subjected to it before. As regards testing of hepatitis C, (86.8%) of them never be tested for it before. In relation to diagnosis of hepatitis C, the majority of them knew that it diagnosed by blood sample, abdominal ultrasound and liver biopsy. About half of them knew that it can be diagnosed by PCR. As regards to food of liver disease patients, (61.4%) of them knew that there are certain foods allowed for them and (47.7%) knew that there are others forbidden for these patients.

Table (3): Frequency and percentage distribution of the study sample regarding awareness toward HCV prevention and treatment (n=220):

Items	No	%
1-Is there a vaccination available for Hepatitis C?		
Yes	180	81.8
No	40	18.2
2- Do You know how to prevent Hepatitis C?		
Yes	168	76.4
No	52	23.6
3- Can hepatitis C be transmitted by blood and blood products?		
Yes	176	80
No	44	20
4- Can hepatitis C be transmitted by contaminated water and food consumed by the persons with the disease?		
Yes	53	24.1
No	167	75.9
5- Can hepatitis C be transmitted by sharing of contaminated razors and ear/nose piercing?		
Yes	179	81.4
No	41	18.6
6- Can hepatitis C be transmitted by syringes and non sterile surgical instruments?		
Yes	174	79.1
No	46	20.9
7-Is hepatitis c transmitted through sex?		
Yes	141	64.1
No	79	35.9
8-Can you prevent Hepatitis C by proper disposal of sharp waste?		
Yes	157	71.4
No	63	28.6
9-Can Hepatitis C patients treated by antibiotics?		
Yes	53	24.1
No	167	75.9

Table (3) illustrates that, (81.8%) of the study sample thought that there is a vaccination available for hepatitis C, while (80%) of the study sample knew that hepatitis C transmitted by blood and blood products and about the same percentage recognized that it is transmitted through sharing of contaminated razors and ear/nose piercing and by syringes and non

sterile surgical instruments, also (64.1%) knew that it is transmitted through sex. In relation to prevention of hepatitis C, (71.4%) of the study sample knew that it can be prevented by proper disposal of sharp waste and (75.9%) recognized that it is not treated by antibiotics.

Table (4): Frequency and percentage distribution of the study sample regarding awareness toward symptoms of HCV infection (n=220):

Items	No	%
1-Symptoms start within few days after entering of HCV into the body?		
Yes	47	21.4
No	173	78.6
2- A person infected with Hepatitis C can be asymptomatic?		
Yes	148	67.3
No	72	32.7
3- Symptoms of hepatitis C are fatigue and tiredness?		
Yes	162	73.6
No	58	26.4
4- Symptoms of HCV are cold symptoms?		
Yes	143	65
No	77	35
5- Symptoms of HCV are fever and body aches?		
Yes	161	73.2
No	59	26.8
6-Symptoms of HCV are nausea and loss of appetite ?		
Yes	147	66.8
No	73	33.2
7- Symptom of HCV is loss of weight ?		
Yes	150	68.2
No	70	31.8
8- Symptom of HCV is jaundice ?		
Yes	163	74.1
No	57	25.9
9- Symptom of HCV is abdominal colic ?		
Yes	124	56.4
No	96	43.6

Table (4) revealed that, (78.6%) of the study sample thought that symptoms of HCV didn't start within few days after entering of HCV into the body and(67.3%) of them answered that a person infected with Hepatitis C can be asymptomatic. In relation to manifestations of hepatitis C, (73.6%) agreed that fatigue and tiredness are symptoms of HCV while the same percentage nearly agreed also that fever and body aches are prevalent ones. More than two thirds of the study sample answered that symptoms were like cold symptoms, nausea and loss of appetite and loss of weight while, more than half of them responded that abdominal colic is the HCV symptom.

Table (5): Frequency and percentage distribution of the study sample regarding awareness toward complications of HCV infection (n=220):

Items	No	%
1- HCV can lead to yellowing of the eye and body?		
Yes	153	69.5
No	67	30.5
2- HCV can lead to abdominal ascitis?		
Yes	69	31.4
No	151	68.6
3- HCV can lead to swelling of limbs?		
Yes	47	21.4
No	173	78.6

4- HCV can lead to heamatemesis?		
Yes	54	24.5
No	166	75.5
5- HCV can lead to liver cirrhosis?		
Yes	156	70.9
No	64	29.1
6- HCV can lead to hepatic coma ?		
Yes	43	19.5
No	177	80.5
7- HCV can lead to hepatic cancer ?		
Yes	145	65.9
No	75	34.1
8- HCV usually lead to sudden death?		
Yes	43	19.5
No	177	80.5

Table(5) showed that, (69.5%) of the study sample responded that HCV can lead to yellowing of the eye and body while (68.6%) answered that HCV didn't lead to abdominal ascitis. The majority of them replied that HCV didn't lead to swelling of limbs or heamatemesis. In relation to liver cirrhosis, (70.9%) of the study sample answered that HCV lead to it and (65.9%) of them answered that it can lead to hepatic cancer. As regards to sudden death and hepatic coma, (80.5%) of the study sample answered that HCV didn't lead to any one of them.

Table (6): Correlation between Socio demographic data of the study sample:

Correlations	Age	Gender	Year of study	Current residence	Marital status	Working with study
Age	1.00	.093 .167	.037 .586	.-.004- .953	-.083- .219	-.004- .955
Gender	.093 .167	1.00	.011 .876	-.218-* .001	.056 .406	-.089- .190
Year of study	.037 .586	.011 .876	1.00	-.030- .654	.027 .685	-.099- .144
Current residence	.-.004- .953	-.218-* .001	-.030- .654	1.00	.007 .924	.079 .244
Marital status	-.083- .219	.056 .406	.027 .685	.007 .924	1.00	.091 .181
Working with study	-.004- .955	-.089- .190	-.099- .144	.079 .244	.091 .181	1.00

*Significant at p≤0.01(2- tailed).

Table(6) shows that, there is a significant correlation between current residence and gender of the study sample.

Table (7): Correlation between Total students knowledge and awareness toward HCV:

Correlations	Total knowledge of HCV	Total awareness of complications HCV	Total awareness of prevention and treatment of HCV	Total awareness of symptoms HCV
Total knowledge of HCV	1.00	-.088- .195	.207* .002	-.147-* .030
Total awareness of HCV complications	-.088- .195	1.00	-.185-* .006	-.006- .932
Total prevention and treatment of HCV	.207* .002	-.185-* .006	1.00	-.013- .851
Total awareness of HCV symptoms	-.147-* .030	-.006- .932	-.013- .851	1.00

*Significant at p≤0.01(2- tailed).

Table (7) illustrates that, there is a statistical significant correlation between total knowledge of HCV and total awareness of prevention and treatment and with total awareness of its symptoms. It also shows a significant correlation between total awareness of prevention and treatment of HCV and total awareness of its complications.

IV. DISCUSSION

HCV is the most common chronic bloodborne pathogen worldwide and a leading cause of complications from chronic liver disease. The current study revealed that 55.5% of the study sample age ranged from 21 year to 23 year, with mean age 1.55 ± 0.498 and 50.9% of them were males. The majority of the study sample were students in fourth year faculty of nursing and more than half of them live in urban areas. In relation to marital status, 92.3% were single. 77.7% of the study sample were working with study. This was similar to **Abdulelah H. Almansour, Magdy A. Darwish, and Moataza M. Abdel Wahab, (2017)** study in Eldamam, Saudia Arabia, they mentioned that two hundred and one students participated in their study. The mean age \pm SD was 21.27 ± 0.78 years and more than half of their participants 59.2% were females. The majority of the study subjects were single 83.1%.

In relation to students knowledge about HCV, the present study illustrated that, 16.4% of the study sample had family history of HCV. In relation to needle prick injury, 29.1% of the study sample subjected to it before. As regards testing of hepatitis C, 86.8% of them never be screened for it before. In relation to diagnosis of hepatitis C, the majority of them knew that it diagnosed by blood sample, abdominal ultrasound and liver biopsy. About half of them knew that it can be diagnosed by PCR. **Ismail NH, Rampal KG., (2009)** had reported that, most of the needle injuries among healthcare workers belonged to nurses, they also found that most of incidences of needle- stick injuries took place among final year medical students.

Abdulelah H. Almansour, Magdy A. Darwish, and Moataza M. Abdel Wahab, (2017) also mentioned that Approximately two-thirds 61.2% of students in their study were not screened for hepatitis C and a quarter of them did not know if they were screened. Needle stick injury was positive in 8.5% students and 3.5% of them had a family history of hepatitis C.

Abd El-Nasser Ghona, Abed El baset Eman,(2013) showed that 93.5 % of students in their study have not been screened for hepatitis B and C viruses. These results is consistent with **Khan et al.,(2010)** who reported that, only 7 % were screened for hepatitis C. In the same line in the study by **Min Swe, Zin T., Bhardwaj A., et al.,(2012)** said that, most of the students had knowledge on the diseases transmitted by contaminated sharp objects e.g. HBV, HCV and HIV, but 6% of the students reported that hepatitis C infection could be prevented by vaccine Only. **Abd El-Nasser Ghona, Abed El baset Eman(2013)** also revealed that, 7.6% of their students have family history of hepatitis. This results is in agreement with **Castillo I, Bartolomé J., Quiroga J. A., et al.,(2009)** who 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.

As regards the students awareness toward prevention and treatment of HCV, 81.8% of the study sample thought that there is a vaccination available for hepatitis C, while 80% of the study sample knew that hepatitis C transmitted by blood and blood products and about the same percentage recognized that it is transmitted through sharing of contaminated razors and ear/nose piercing and by syringes and non sterile surgical instruments, also 64.1% knew that it is transmitted through sex. 71.4% of the study sample knew that it can be prevented by proper disposal of sharp waste and 75.9% recognized that it is not treated by antibiotics.

Hui-Chun Li, Shih-Yen Lo.,(2015) mentioned that, because HCV can only be transmitted through blood to infected blood exposure, the number one way to prevent spreading HCV is by not sharing needles and avoiding all contact with the blood of other people. Once identified, people infected with HCV should make lifestyle changes to promote optimum liver health. Obesity, smoking, diabetes and alcohol consumption can accelerate the rate of liver scarring. It is important that all individuals with HCV infection maintain good health. This involves, avoiding or quitting smoking, maintaining ideal weight and managing co-existing health problems. **Abdulelah H. Almansour, Magdy A. Darwish, and Moataza M. Abdel Wahab, (2017)** in their study illustrated that, more than half of students had fair knowledge of screening for HCV 56.2% and prevention and treatment of HCV 58.7%. On the other hand, approximately 73% of males and 71% of females knew the clinical presentation and complications of HCV.

The present study revealed that, 78.6% of the study sample thought that symptoms of HCV didn't start within few days after entering of HCV into the body and 67.3% of them answered that a person infected with Hepatitis C can be asymptomatic. In relation to manifestations of hepatitis C, 73.6% agreed that fatigue and tiredness are symptoms of HCV while the same percentage nearly agreed also that fever and body aches are prevalent ones. More than two thirds of the study sample answered that symptoms were cold symptoms, nausea and loss of appetite and loss of weight while, more than half of them responded that abdominal colic is the HCV symptom.

According to the **CDC (2016)**, individuals in the early stages of HCV infection are typically asymptomatic but when symptoms of HCV do occur, they include fatigue, urine dark in color, fever, pale clay-colored stool, decreased appetite, abdominal pain, arthralgia, jaundice of the skin, nausea, and vomiting. If a person presents with these particular signs and symptoms, it may be advantageous to test the individual for HCV. Having an increased alanine aminotransferase (ALT), a component of the liver function test, may also be indicative of the Hepatitis C virus, or at least another type of underlying disease of the liver, and should be checked if suspicious for HCV infection. Testing for the Hepatitis C virus is relatively simple. Initially, a serum blood draw testing for anti-HCV antibody is performed.

The sensitivity of the serum HCV-RNA test varies based on which test is performed. An exact percentage could not be located, however, it is stated that PCR [polymerase chain reaction] tests detect HCV RNA in the blood, which indicates current active infection **Franciscus, A., & Highleyman, L., (2014)**. In relation to awareness about complications of HCV, our study revealed that, 69.5% of the study sample responded that HCV can lead to yellowing of the eye and body while, 68.6% answered that HCV didn't lead to abdominal ascitis. The majority of them replied that HCV didn't lead to swelling of limbs or heamatemesis. In relation to liver cirrhosis, 70.9% of the study sample answered that HCV lead to it and 65.9% of them answered that it can lead to hepatic cancer. As regards to sudden death and hepatic coma, (80.5%) of the study sample answered that HCV can't lead to any one of them.

Rein, Wittenborn, Weinbaum, Sabin M., Smith, Lesesne SB., (2011), mentioned that HCV is the leading cause of hepatocellular carcinoma and the most common indication for liver transplants in the country. A study forecasts that HCV and cirrhosis will continue to increase substantially among persons with untreated HCV infection in the next decade with a peak prevalence of 1 million cases occurring in the mid- 2020s. Persons with untreated HCV infection who do not receive care and treatment can die from HCV-related complications and put others at risk of infection.

V. CONCLUSION

The result of this study illustrated that there was a statistically significant correlation between total knowledge of HCV and total awareness of prevention and treatment and with it's symptoms. It also showed that, there was a significant correlation between total awareness of prevention and treatment of HCV and total awareness of its complications. Final year students(4th year students of faculty of nursing and 2nd year students of technical institute of nursing) is the last academic year of study and after it students were be in internship period which is the 1st clinical exposure to patients, which means these students have to protect themselves and others. In addition, since hepatitis C infection in particular has no post exposure prophylaxis, prevention of infection is the only option and is of paramount importance.

VI. RECOMMENDATIONS

Based on results of the present study the following can be recommended:

- 1- Expand hepatitis C virus screening into other faculties in the university because most of university students come from rural areas.
- 2- Health education about hepatitis C infection by running awareness programs for all students especially for non-medical students in order to raise awareness of them by HCV.

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