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RESEARCH ARTICLE

Knowledge level and Attitude of Nursing Interns toward Patients with Hepatitis C at Tanta University Hospital

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Abstract

Having enough knowledge and proper attitude towards patients with hepatitis C Virus (HCV) infection are cornerstones of preventing the spread of the disease. While, lack of knowledge and awareness about Hepatitis C in the community often leads to misinformation, missing of opportunities for prevention and treatment, and stigmatization of infected populations in the work place, by family members and by members of their communities. **Aim:** The aim of the study was to assess knowledge level and attitude toward patients with hepatitis C among nursing interns at Tanta University Hospital. **Material and methods:** Descriptive correlation study design. The study was conducted at Tanta University hospital and convenience sample of 200 nursing interns was enrolled in the study. Specially designed questionnaires that were developed by the researchers based on Joukor et al., Van de Mortal et al and Yaghi et al., after reviewing the related literature. Its consisted of three parts include questions related to sociodemographic data, questions related to nursing interns' level of knowledge of hepatitis and questions related to nursing interns's attitude. **Results:** . It was noticed that 11.5% of nursing interns had poor knowledge, 60.5% had a moderate level of knowledge and 28% had a good level of knowledge about patients with hepatitis C. Also, 50.5% (101) of nursing interns had positive attitude and 73.2% of them had good level of knowledge while, (49%) nursing interns had negative attitude toward patients with hepatitis and only 26.8% of them were had good level of knowledge. **Conclusion:** There was a significant correlation among nursing interns 'attitude and their total levels of knowledge toward patients with hepatitis C. **Recommendation:** Develop educational programs about hepatitis C because it is necessary to increase the level and quality of training among nursing interns before and during internship period to prevent or decrease negative attitude towards patients with hepatitis C. Increase the level of education about the disease, its prevention , management and infection control between undergraduate students and increase their interaction with hepatitis patients.

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Introduction

Hepatitis C is a serious health concern and one of the most important infectious leading causes of death worldwide. Hepatitis C is a hepatotropic viral infection caused by hepatitis C virus (HCV), which is a major cause of cirrhosis, liver failure, hepatocellular carcinoma and the most common indication for liver transplantation.^(1,2) WHO estimates that about 170 million people, 3% of the world's population, are infected with HCV and 3-4 million persons are newly infected each year.⁽³⁾ Egypt has the highest HCV prevalence worldwide and is the most significant public health problem facing Egypt today. The prevalence rate ranges from 10%–20% of the general population. High rates

of infection are observed among all age groups although there are regional differences in the average overall prevalence, rural populations show a higher prevalence than urban ones. Liver disease is a top cause of mortality in Egypt, and mathematical models predict an upsurge in cases of liver cirrhosis and liver cancer in the years to come.^(4,5)

HCV is spread primarily by direct contact with human blood. Transmission through blood transfusions that are not screened for HCV infection, through the reuse of inadequately sterilized needles, syringes or other medical equipment especially in dental treatment, or through needle-sharing among drug-users, is well documented. Other modes of transmission through social, cultural, and behavioral practices using percutaneous procedures (e.g. ear and body piercing, circumcision, tattooing) can occur if inadequately sterilized equipments are used. Sexual and prenatal transmission may also occur, although less frequently. HCV is not spread by sneezing, hugging, coughing, food or water, sharing eating utensils or casual contact, although there are household contacts with unexplained HCV infection.^(6,7)

In Egypt, HCV is epidemic due to use of unsterile injection equipment during mass treatment of the general population with parenteral antischistosomal therapy. Nevertheless, children and young adults have relatively high anti-HCV prevalence, but still less than that in the older population group. This situation suggests that HCV transmission continues in the country.^(8,9)

HCV infection is commonly referred to as the “silent epidemic” because there are no symptoms in the initial stages of the disease and as a consequence, many people infected may still be unaware of their status.⁽¹⁾ Unlike other viral forms of hepatitis, the acute phase is rare.⁽⁸⁾ The chronic form, presenting scarce and nonspecific symptoms include such as fatigue, irritability, nausea, anorexia, muscle pains, headaches, abdominal discomfort and articular pain, makes clinical diagnosis of the disease difficult. The infection lasts for decades for a person to develop serious complications due to chronic HCV is usually slowly progressive.^(4,7) Additionally, there is no vaccine to prevent HCV infection, and immune-globulin is not effective for post exposure prophylaxis. Furthermore, HCV infected people serve as a reservoir for transmission of infection to others if left untreated.^(10,11)

Having enough knowledge and proper attitudes towards these HCV infections are cornerstones of preventing the spread of them. While, lack of knowledge and awareness about Hepatitis C in the community often leads to misinformation, missing of opportunities for prevention and treatment, and stigmatization of infected populations in the work place, by family members and by members of their communities. The consequences for members of at-risk communities are important in that missing opportunities for prevention can lead to infection of additional people with HCV.^(8,9,10)

Medical and nursing interns during internship year are more vulnerable to hepatitis as they are in close contact with the patients and surgical instrumentation also are more likely to be exposed to needle stick injury (NSI) due to lack of experiences. The internship year is considered a time of transition from undergraduate nursing students to beginning level registered nurses. At the beginning of the internship year many nurse interns feel uncomfortable and inadequacy as their skill levels do not match their expectations of the role and responsibilities of a practicing as a registered nurse. In Egypt, generally and especially in Tanta university hospital there was severe nursing shortage and limited budgets so, hospital administrator's expect nurse interns to be competent to function and take responsibilities in nursing service so, it puts extra demands on health care services and increases the likelihood that nurse interns will care for or have personal contact especially with people suffering from HCV.^(11,12)

Patient with HCV may face discrimination from nurse interns. This discriminatory practices may result from a lack of knowledge and negative attitudes toward these kinds of diseases, which could interfere with their willingness to treat these patients because of a fear of contracting hepatitis C.⁽³⁾ The nursing interns are future nurse staff therefore we studied their knowledge levels and attitudes toward treating people with hepatitis C to investigate how attitudes can be influenced by education and how this can affect their willingness to treat these patients.

Aim of the study

The aim of the study is to assess knowledge level and attitude toward patients with hepatitis C among nursing interns at Tanta University hospital.

Research questions

1. What is the level of knowledge regarding hepatitis C among nursing interns?
2. What is the nursing interns' attitude regarding patients with hepatitis C ?
- 3- Is there a relationship between nursing interns' knowledge levels, and their attitudes towards patients with hepatitis C?

Subjects and Methods

Designs : Descriptive correlation study design.

Setting: The study was conducted at Tanta University hospital.

Subjects: The study subjects consisted of convenient sample of 200 nursing interns during 2012-2013 internship year.

Tools for data collection

It was developed by the researchers based on Joukor et al., tool (2012)⁽¹⁾, Van de Mortal et al., (2002)⁽²⁾, and Yaghi et al., (2012)⁽³⁾ after reviewing the related literature. Then the modification and adaptation was based on the aim of the study, literature review and opinions of 10 experts in nursing. **It consisted of three parts:**

First part: Nursing interns sociodemographic data: age, sex, marital status, residence, years of experience, family history of hepatitis C.

Second part: Statements to assess level of knowledge among nursing interns about hepatitis C divided into four parts:-

Part (1):- General knowledge about hepatitis C consisted of 12 statements.

Part (2):- Routes of transmission of hepatitis C consisted of 11 statements.

Part (3):- Ways of preventing Hepatitis C infection consisted of 7 statements.

Part (4):- Measures taken to protect against hepatitis C infection consisted of 6 statements

Scoring system of the second part of statement to assess level of knowledge:

Each statement was measured on a two point Likert scale. 0 = wrong or don't know and 1 = right.

- *For the first part*, the total right answer equal 12 point. The level of right answer divided into three levels. Poor level range from 1-4, moderate level range from 5-8, and good level range from 9-12.

- *For the second part*, the total right answer equal 11 point. The level of right answer divided into three levels. Poor level range from 1-3, moderate level range from 4-6, and good level range from 7-11.

- *For the third part*, the total right answer equal 7 point. The level of right answer divided into three levels. Poor level range from 1-2, moderate level range from 3-4, and good level range from 5-7.

- *For the fourth part*, the total right answer equal 6 point. The level of right answer divided into three levels. Poor level range from 1-2, moderate level range from 3-4, and good level range from 5-6.

Total scoring of total levels of knowledge equal 36 points, it was divided into three levels. Poor level range from 1-12, moderate level range from 13-24, and good level range from 25-36.

The third part of tool : nursing interns' attitude regarding patients with hepatitis C. This tool consisted of 15 statements divided into 3 parts namely:-

Part (1): Attitudes and self-reported behavior toward the implementation of infection control guidelines involved 10 statements.

Part (2): Attitudes and self-reported compassion toward people with hepatitis C involved 2 statements.

Part (3): Attitudes and self-reported willingness to treat people with hepatitis C involved 3 statements.

Scoring system of the third part of nursing interns' attitude regarding patients with hepatitis C.

The nursing interns' attitude were measured used three point likert scale; agree = 3, neutral = 2, and disagree = 1. Total score of attitude considered positive attitude if the total score equal or more than 27 point (equal 60%) and considered negative attitude if the total score less than 27 point.

Method

- Ethical & administration considerations:-

- 1- An official permission to carry out the study was obtained from responsible authorities at Faculty of Nursing at Tanta University. Then, the permission was obtained from the hospital administrative authority.
- 2- The purpose of the study was explained to the nursing interns and their oral consent to participate was received and those who were willing to participate were given a questionnaire to answer it. They were also assured of their anonymity and the confidentiality of their responses.

-Field work:-

- 3- The questionnaire's validity were checked by 10 experts from the Faculty members in Nursing College, Tanta University, experts in different fields; two members of administration, and three members from Maternity and gynecology nursing, three members of medical surgical nursing, and two members of community health nursing. The content validity index of the second part of the tool was 96.67% and contents validity of the third part of tool was 95.7%
- 4- Pilot study was conducted on 10% (20 nursing interns) this number were excluded from the studied sample to identify the obstacles and problems that may be encountered in data collection.
- 5- Internal consistency reliability (coefficient alpha) was applied ($\alpha = 0.887$) for part 2 of tool and ($\alpha = 0.739$) for part 3 of tool of nursing interns' attitude.

- 6- The questionnaires were distributed to nursing interns ($n = 200$). Before the questionnaire was administered, the subjects were thoroughly briefed about the purpose of the study and the data collection process.
- 7- Responding times to all questions of the tools in this study consumed (10-15) minute.
- 8- The data collection was completed during the period of October to November 2013.

Statistical analysis

The collected data were organized, tabulated and statistically analyzed using statistical package for social studies (SPSS) version 19. Descriptive measures, including frequency, percentage, arithmetic mean and standard deviation were presented. t test were used for statistical correlation. P value was statistically significant at level 0.05%.

Results

Table (1): Shows the percent distribution of socio-demographic characteristics of the nursing interns. It was noticed that 65% had 22 years old. 93.5% were female, 65% were single, and 54.5% were from rural areas of them.

Table (2): Shows the proportions of the nursing interns with correct knowledge about each items in the different domains regarding HCV. Regarding to their general knowledge, it revealed that 92% of them were aware that hepatitis C infection caused by a virus, 68.5% considered hepatitis C a seriousness disease, 71% knew that hepatitis C can lead to cirrhosis. About 74.5% knew that hepatitis C was associated with an increased risk of liver cancer, while only 59.5% aware that the person can be infected with hepatitis C and not have any symptoms of the disease and 52.5% knew there was a pharmaceutical treatment available for hepatitis C. Also, 59% knew that people with hepatitis C should restrict their alcohol intake. Only 35.5% aware that once the patient had hepatitis C cannot catch it again because he was immune. Generally, the level of knowledge about modes of transmission was high among the majority of the nursing interns. Correct knowledge about blood and blood products as well as needles and sharp objects as modes of transmission were (71% and 66% respectively). While, 54.5% considered that hepatitis C can be transmitted as a nosocomial infection, 57% knew that hepatitis C is also widely transmitted like HIV/AIDS, and 67.5% knew that health workers are at risk of HCV infection by virtue of their work. When the internship students asked about ways of preventing HCV infection; 53.5% knew that vaccination against hepatitis C is a way of prevention. However, more than half of the nursing interns answered correctly about the main preventing ways, where 68.5%, 68% and 60.5% respectively knew that proper disposal of sharps, needles and blood avoiding needle/sharps injury, and avoiding casual sex or/and multiple sexual partners are ways of prevention of the infection. Concerning nursing interns' knowledge regarding measures taken to protect against hepatitis C infection, (68% and 61.5%, respectively) agreed that wearing of gloves and goggles protect against infection. While, 85.5% agreed that adequate disposal of sharps protect against infection.

Table (3): Presents nursing interns' responses to the attitudes and self-reported behavior, compassion and willingness statements. 50.5% of the nursing interns were agree that patients with hepatitis C should be identified for safety reasons. While, (34.5%, 31% and 32%) of them had uncertain attitude regarding that patients with hepatitis C should be given the last appointment of the day, regarding to health professionals who are HCV positive should be discouraged from having contact with patients, and all patients should be tested for HCV before they receive health care. About less than one third (24%) of nursing interns were uncertain attitude regarding deliver the same standard of care to patients with HCV as I do for other patients. Also, 45.5% of the nurse interns feel that they do not have the skills needed to effectively and safely treat patients with hepatitis C. 41% of the nursing interns agreed to following infection control guidelines will protect them from being infected with hepatitis C at work. Also, (25.5%, 31% and 32%, respectively) of nursing interns had uncertain attitude regarding using additional infection control precautions when treating patients with hepatitis C, regarding their preferred to wear two pairs of gloves when treating a bleeding person with HCV, and regarding that the infection control guidelines necessary to treat patients with hepatitis C would be a financial burden on their practice/ward.

The table also noticed that 48% of the nursing interns felt sorry for people who contracted hepatitis C through a blood transfusion. While 37% of them felt sorry for people who contracted hepatitis C through HIV drug use. In the same time, 18.5% of the nursing interns don't like treating people with hepatitis C. While (36.5% and 33.5%, respectively) of the nurse interns had uncertain attitude regarding their willing to treat people with hepatitis C, and regarding that their profession should have central role in the treatment of hepatitis C.

Figure (1): Illustrates the general nursing interns' attitude toward patients with hepatitis C. It was noticed that 50.5% of the nursing interns had a positive attitude toward patients with hepatitis C.

Figure (2): Illustrates levels of total nursing interns' knowledge about patients with hepatitis C. It was noticed that 11.5% of the nurse interns had poor knowledge, 60.5% had a moderate level of knowledge and 28% had a good level of knowledge about patients with hepatitis C.

Table (4): Demonstrates the correlation between general nursing interns' attitudes and their total levels of knowledge toward patient with hepatitis C. It was observed that there was a significant correlation among nursing interns' attitude and their total levels of knowledge toward patients with hepatitis C.

Table 1: Socio-demographic characteristics of the nursing interns

Variables	No	%
Age in years		
<22	19	9.5
22	130	65.0
>22	51	25.5
Gender		
Male	13	6.5
Female	187	93.5
Marital status		
Single	130	65.0
Married	70	35.0
Residence		
Urban	91	45.5
Rural	109	54.5
Total	200	100.0

Table 2: Proportions of nursing interns answered correctly statements regarding general knowledge, routes of transmission, ways of preventing, measures taken to protect against hepatitis C infection

Variables	No	%
General knowledge		
Hepatitis C is caused by a virus.	184	92.0
Hepatitis C is caused by a bacteria.	157	78.5
Hepatitis C is a seriousness of the disease.	136	68.5
Hepatitis C can lead to cirrhosis.	142	71.0
Hepatitis C is associated with an increased risk of liver cancer.	149	74.5
Hepatitis C is a mutation of hepatitis B.	87	43.5
A person can be infected with hepatitis c and not have any symptoms of the disease.	119	59.5
There is a pharmaceutical treatment available for hepatitis C.	105	52.5
HIV is easier to catch than hepatitis C.	101	50.5
An individual can have hepatitis C antibodies without being currently infected with the virus.	58	29.0
People with hepatitis C should restrict their alcohol intake.	118	59.0
Once the patient had hepatitis C, cannot catch it again because he was immune.	71	35.5
Routes of transmission of hepatitis C		
Blood and blood products.	142	71.0
Needles and sharps.	132	66.0
Sexual intercourse.	49	24.5
Faeco-oral.	114	57.0
Close personal contact such as kissing.	120	60.0
Contaminated water.	127	63.5
By mosquitoes.	102	51.0
Through the air in an enclosed environment (e.g., crowded buses and elevators).	125	62.5
Hepatitis C can be transmitted as a nosocomial infection.	109	54.5
Hepatitis C is also widely transmitted like HIV/AIDS.	114	57.0
Health workers are at risk of Hepatitis C infection by virtue of their work.	135	67.5
Ways of preventing Hepatitis C infection		

Vaccination.	107	53.5
Proper disposal of sharps, needles and blood.	137	68.5
Avoid needle/ sharps injury.	136	68.0
Avoid casual sex or/and multiple sexual partners.	121	60.5
Avoid drinking contaminated water.	106	53.0
Avoid food well cooked.	96	48.0
People with hepatitis C should be restricted from working in the food industry.	61	30.5
Measures taken to protect against hepatitis C infection		
Wearing of gloves.	136	68.0
Wearing of goggles.	123	61.5
Adequate disposal of sharps.	131	85.5
Avoid patients diagnosed with hepatitis B.	57	28.5
Multivitamin/blood tonic.	54	27.0
Use antibiotic after contact.	59	29.5
Total	200	100.0

Table 3: Nursing interns' responses to the attitudes and self-reported behavior, compassion and willingness statements

Statement	Disagree	Uncertain	Agree
Attitudes and self- reported behavior toward the implementation of infection control guidelines			
When receiving health care, patients with hepatitis C (HCV) should be identified for safety reasons.	34.5%	15%	50.5%
Patients with HCV should be given the last appointment for the day (International crisis group).	39%	34.5%	26.5%
Health professionals who are HCV positive should be discouraged from having contact with patients.	48%	31%	21%
All patients should be tested for HCV before they receive health care.	31%	32%	46%
I deliver the same standard of care to patients with HCV as I do for other patients.	38%	24%	38%
I feel that I do not have the skills needed to effectively and safely treat patients with HCV.	26.5%	28%	45.5%
Following infection control guidelines will protect me from being infected with HCV at work.	38%	21%	41%
I often use additional infection control precautions when treating patients with HCV.	34.5%	25.5%	40%
I would prefer to wear two pairs of gloves when treating a bleeding person with HCV.	29.5%	31%	39.5%
The infection control guidelines necessary to treat patients with hepatitis C would be a financial burden on my practice/ward.	28.5%	32%	39.5%
Attitudes and self –reported compassion toward people with hepatitis C			
I feel sorry for people who contracted HCV through a blood transfusion.	31.5%	20.5%	48%
I feel sorry for people who contracted HCV through HIV drug use.	33.5%	29.5%	37%
Attitudes and self –reported willingness to treat people with hepatitis C			
I do not like treating people with HCV.	56.5%	24.5%	18.5%
I am willing to treat people with HCV.	33.5%	36.5%	29.5%

I believe my profession should have central role in the treatment of HCV.	33%	33.5%	33.5%
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Figure 1: General nursing interns' attitude toward patients with hepatitis C

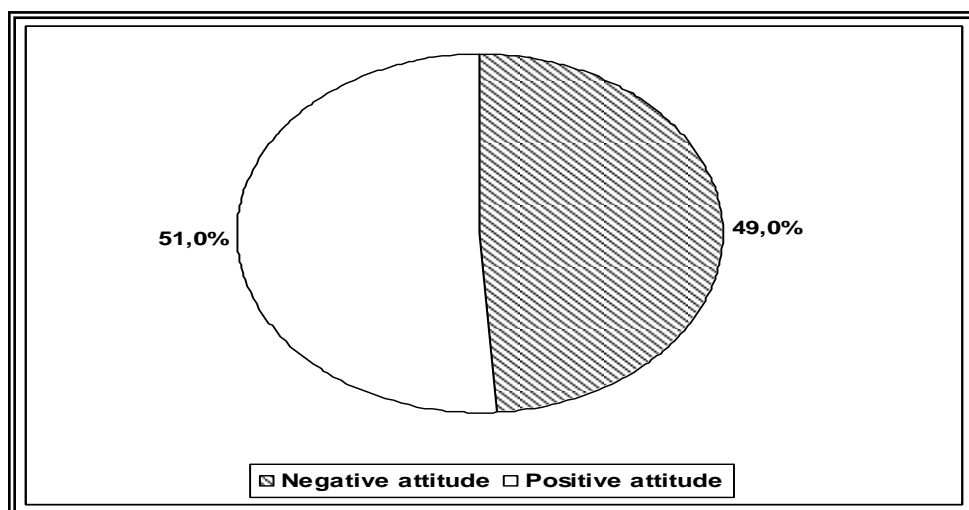


Figure (2): Levels of total nursing interns' knowledge about patients with hepatitis C

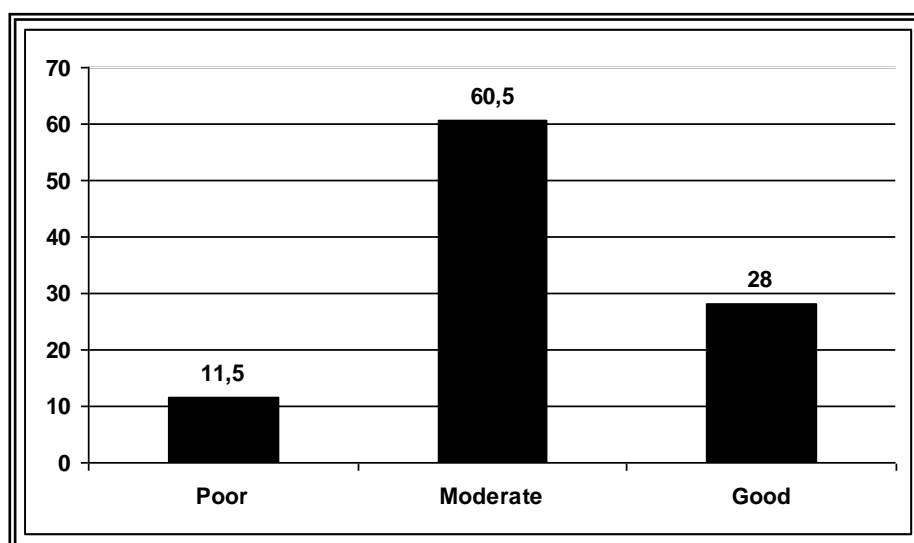


Table 4: Correlation between general nursing interns' attitude and their total levels of knowledge toward patient with hepatitis C

Total levels of knowledge score (total score=36)	General attitude	
	Negative (n=99)	Positive (n=101)
Poor(1-12)	65.3%	34.7%
Moderate(13-24)	58.7%	41.3%
Good(25-36)	26.8%	73.2%
t	2.739	
P	0.000*	

*Significant $P < 0.05$

Discussion

Hepatitis C is and will remain for some time a major health problem in Egypt and the entire continent of Africa. This infection can lead to an acute or silent course of liver disease, progressing from liver impairment to cirrhosis and decompensate liver failure or hepatocellular carcinoma in a 20–30-year period⁽¹³⁾. The HCV has a tendency to mutate rapidly, which makes it genetically unstable. The rapid mutation rate also means that there is no licensed, effective vaccine against HCV, and that gamma globulin is not an effective prophylactic therapy⁽²⁾. We therefore studied knowledge levels and attitudes among nurse interns toward the people with hepatitis C.⁽¹⁾

The present study indicated that nursing interns' overall knowledge score is moderate (the overall percentage score was 60.5%). Our result is contrast to the study conducted by Mansour-Ghanaei et al, (2013)⁽⁸⁾, who found that the mean knowledge level of the medical students is relatively low toward HCV infection. This goes in the line with Joukar et al, (2012),⁽¹⁾ who found that the mean knowledge level score was acceptable.

Concerning the various aspects of HCV infection, this study indicated that more than half of the participants (58%) had moderate knowledge score regarding general knowledge of HCV infection, the majority of participants were aware that hepatitis C is caused by a virus, more than two thirds of them considered HCV infection as a serious disease and the most of nurse interns aware that HCV infection can cause serious complications as liver cirrhosis and cancer. In this context, Sood *et al* (2002)⁽¹⁴⁾ showed in their study, that more than half of the participants answered correctly to the questions about hepatitis C complications. In other study conducted by Nicklin et al, (1999)⁽¹⁵⁾, who reported that half of the personnel indicated cirrhosis was caused by hepatitis C and 37% thought it caused liver cancer.

The present study showed that the nursing interns (50%) had good knowledge score regarding common modes of transmission. More than two thirds and two thirds of the nurse interns had correct knowledge about blood and blood products as well as needles and sharp objects as modes of transmission respectively. This is consistent with another study in Kuwait by Alkandari et al, (2013)⁽¹⁶⁾, who reported that most of the participants were aware that blood and blood products as well as needles and sharps were the main routes of transmission. In the studies of D'Souza et al., (2004)⁽¹⁷⁾ and van de Mortel et al., (2003)⁽¹⁸⁾, most of the participants indicated that blood transfusion is a major mode of transmission. However, some deficits were seen in HCW knowledge on sexual contact as a mode of transmission for hepatitis C this is contrast to the study conducted by Abd El-Nasser & Abed El baset (2013)⁽¹⁹⁾ who found that the abysmal score 33.3% of student knowledge about the mode of transmission in the pre-test compared to post-test; the percentage is increased to 86 %.

The present study referred that (40.5%) of the nursing interns had good knowledge level regarding ways of preventing HCV infection. More than two thirds of the participants answered correctly about the main items preventing ways related to "proper disposal of sharps, needles and blood", "avoid needle/sharps injury" and avoiding casual sex or/and multiple sexual partners. This finding is similar to a study done by De Villiers, (2007)⁽²⁰⁾ who showed that HCWs are at an increased risk of blood born diseases. The most common form of accidental exposures is due to needle stick injury. Exposures could also result from sharp objects such as scalpels and broken glasses, as well as from mucosal exposures after blood splash or bodily. In accordance to Askarian, et al., (2011)⁽²¹⁾, who stated that proper hand washing and use of barriers such as gloves, gowns, and masks—the main components of standard precautions—can minimize mucocutaneous exposures. Reducing the manipulation of manual sharps can also prevent occupational injuries. The use of puncture-resistant containers for sharp disposal is also an effective strategy.

The most challenging obstacles to managing HCV are the continuous transmission of infection due to lack of effective infection control measures and prevention programs as well as the high cost of treatment⁽²²⁾. Concerning nurse interns' knowledge regarding measures taken to protect against hepatitis C infection, the present study showed that (56.5%) more than half of them had moderate knowledge level. Most of the nursing interns stated the importance of adequate disposal of sharps as a protection against infection. In a study by Yaghi, et al., (2011)⁽³⁾, who found that more than 90% of participants were aware that blood and needles and sharps are routes of infection and that avoiding these sharps is a protecting measure, only 80% of them believed in wearing gloves proper disposal of sharps. The results also referred that more than two thirds and about two thirds respectively of the nursing interns reported that wearing of gloves and goggles protect against infection. Al-Dabbas & Abu-Rmeileh (2012)⁽⁴⁾ who found that 50% of the nursing interns and 56.4% of medical students did not use the double glove technique because of decreased hand sensation and lack of belief in its benefits.

The present study indicated that nursing interns' overall attitude score is relatively positive (the overall percentage score was 50.5%). This result is in contrast to the study conducted by Hassan al., (2011)⁽⁴⁾, who reported that more than half of the sample had negative attitude towards hepatitis C. The present study's results presented that about half of nursing interns agree that all patients should be tested for HCV before they receive health care. This finding was in concordance with the results of van de Mortel (2002)⁽²⁾, who reported that it was interesting that

staff did not have a blanket response to compulsory testing. Whilst just under three-quarters of staff agreed that patients should disclose their infective status, only half felt that testing prior to surgery should be compulsory, and just over one-third agreed with mandatory testing on admission. Respondents may have felt there was a lower inherent risk of contracting HCV from non-surgical patients.

A round more than one third of nursing interns also agree that the following infection control guidelines will protect them from being infected with hepatitis C at work, more than one third of interns agreed to using additional infection control precautions when treating patients with hepatitis C. Yaghi, et al., (2011)⁽³⁾ who stated that health care providers who have occupational exposure to blood are at increased risk for acquiring blood-borne infections. The level of risk depends on the number of patients with that infection in the health care facility and the precautions the HCWs observe while dealing these patients. Because the use of preventive measures such as double gloves, masks, and eye protection are mainly associated with particular specialties, the use of these measures could not be generalized to all PHC physicians and specialists.

In the present study, more than one third of the nursing interns (39.5%) also preferred to wear two pairs of gloves when treating a bleeding person with HCV. This was in agreement with Al-Dabbas & Abu-Rmeileh (2012)⁽²³⁾ who found that the great majority of interns and medical students did appear to wear gloves for wound suturing (95.9%) and/or inspection (89.2%), where the risk of contamination with body fluids is high. In our study, more than one third of the participants (39.5%) believed that the infection control guidelines necessary to treat patients with hepatitis C would be a financial burden on their practice/ward. In the study conducted by Mansour-Ghanaei et al, (2013)⁽⁸⁾, who found that the majority of medical students (77.6%) believed that they prefer to wear two pairs of gloves when treating a bleeding person with HBV and HCV This in the line with the study by Esmat G.,(2013)⁽²²⁾ who reported that HCV remains a considerable challenge in the Middle East region imposing both a health and a financial burden and more efforts are required to highlight the problem and augment both prevention and treatment programs.⁽²²⁾

In the present study, More than half of nursing interns (56.5%) don't like treating people with hepatitis C While about one third of them appeared their willing to treat people with hepatitis C. In the study by Joukar et al, (2012),⁽¹⁾ who found that most of the participants indicated willingness to treat patients with hepatitis C. Finally, in the present study, there was a significant correlation among nursing interns' attitude and their total level of knowledge toward patients with hepatitis C in a way that higher knowledge is associated with better attitude. This finding was inconcordance with the results of Joukar et al, (2012),⁽¹⁾ who found that there was a significant correlation between HCW knowledge levels and attitudes. A similar positive correlation for awareness level and attitude was found in a study done on HCW in India.⁽²⁴⁾

Conclusion

There was a significant correlation among nursing interns ' attitude and their total levels of knowledge toward patients with hepatitis C.

Recommendation

- Develop educational programs about hepatitis C because it is necessary to increase the level and quality of training among interns before and during internship year to prevent or decrease negative attitude towards patients with hepatitis C.
- Increase the level of education about the disease, its prevention , management and infection control between undergraduate students and increase their interaction with hepatitis patients.
- Further nursing research continue to research the contributing factors affecting knowledge and attitude of interns toward patients with hepatitis

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