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RESEARCH ARTICLE

KNOWLEDGE AND ATTITUDES TOWARDS HEPATITIS C VIRUS TRANSMISSION AMONG MEDICAL INTERNS OF KING ABDULAZIZ MEDICAL CITY , RIYADH.

Turky Al-Qahtani.

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Abstract

Aim: This study aims to investigate the knowledge and attitudes towards hepatitis C virus transmission among medical interns of King Abdulaziz Medical City in Riyadh city , kingdom of Saudi Arabia. **Methods:** A cross sectional descriptive study was conducted by administering a closed ended questionnaire on a sample of 100 medical interns. **Results :** Findings of this study showed that medical interns in King Abdulaziz Medical City in Riyadh city possess a good level of knowledge regarding HCV transmission , besides to the good level of knowledge regarding the prevention of HCV infection. Moreover , medical interns have a positive attitude towards patients infected by HCV. **Conclusion :** It could be concluded that there is an accepted level of knowledge among medical interns of King Abdulaziz Medical City regarding HCV transmission , and a positive attitude towards dealing with HCV patients.

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Introduction:-

Hepatitis C is a significant global health issue due to the vast and increasing number of infections happening every year, besides to the increasing mortality rate among infected people.

Nowadays , it is estimated that there is around 170 million of infected people by HCV , as an estimated to be 3% of the world's population . high prevalence rate of hepatitis infection imposes high demand on health service providers and particularly on healthcare workers to be more close and in direct contact with HCV infected people.

Hepatitis C is a blood borne viral infection that is caused by the hepatitis C virus (HCV) (National and medical research council (NHMRC) , 1997).

Hepatitis C is still poorly understood , in part because has only recently been identified . the genome of HCV was isolated in 1988 and a serological test was developed in 1990 (Crofts et al.,1999) . The HCV has a tendency to mutate rapidly , which makes it genetically unstable. The rapid change in viral antigens makes it difficult for the immune system to clear the virus , consequently there is a high rate of chronicity.

Around 80% of HCV infected people go on to develop chronic hepatitis , up to 20% will develop cirrhosis of the liver and around 5% will develop hepatic cancer. 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.

People with chronic Hepatitis C infection could be treated using interferon monotherapy , or with interferon and ribavirin combination therapy . Neither of both treatments is highly effective with only 15-20% of patients treated with interferon alone, and 35 – 50 % of patients treated with combination therapy showing a sustained response (i.e. absence of viral RNA for at least six months after cessation of treatment).

Hepatitis C virus (HCV) is considered a major factor that increases the mortality rate in patients with end-stage-renal-disease (ESRD) that are treated with renal dialysis. Serological tests had indicated that there is a high prevalence rate of HCV infection among ESRD patients. Specific procedure represented by the early diagnosis and infection treatment, can help in reducing the mortality rate .Moreover,it's very important to perform blood screening to identify any available anti-HCV antibodies in the patients, or to detect Ribonucleic Acid molecules (RNA) of the HCV by hybridization screening methods. Little knowledge is known about the Saudi renal dialysis patients knowledge level about HCV infection, so that spot the light on the need for more survey and quantitative researches to explore their knowledge,attitudes, beliefs and other related aspects.

The greatest risk of transmission to healthcare workers is via a contaminated needlestick or sharp injuries . HCV is transmitted primarily by direct contact with human blood . transmission through blood transfusion that are not screened for HCV infection , through reuse of inadequately sterilized needles , syringes or other medical equipment , or through needle sharing among drug users , is well documented. Other modes of transmission through social , cultural , and behavioral practices using percutaneous procedures can occur if inadequately sterilized equipment are used. Sexual and parental 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 .

Middle east countries , including Saudi Arabia , show an intermediate level of hepatitis C infection prevalence . although the disease can lead to huge burden especially in endemic areas , it is preventable. Prevention is the only safe strategy against high prevalence of viral hepatitis.

Having enough knowledge and proper attitudes towards these infections are cornerstone of preventing the spread of them . healthcare workers have the most important role in preventing the disease by improving the disease knowledge among them and the patients , because health services staff are in close with hepatitis infection patients. The present study aims mainly to determine the knowledge level and attitudes of medical interns towards the transmission and patients of HCV in Riyadh city , Saudi Arabia.

Objectives of the study:-

Several studies had reported evidences regarding the prevention of HCV transmission to patients underlying hemodialysis. Medical interns in the hemodialysis units are supposed to possess enough knowledge regarding HCVprevention, and they have to hold enough experience and training to perform full prevention procedure. Current study aims to investigate and measure the level of knowledge among medical interns in hemodialysis units in King Abdulaziz Medical Cityin Riyadh city, KSA.

Literature review:-

In a study conducted by Biancoet al (2013) , aimed to investigate and explore knowledge , attitudes and evidence based practices in hemodialysis units in Italy , Bianco and her colleagues had explored 37 hemodialysis units in Calabria region in Italy using a self-administered questionnaire.

Findings of the study had showed that there is a high level of knowledge regarding HCV pattern of transmission (73.7% to 99.3%). Moreover , study results indicated that there is a positive attitude among the study participants , but it was the highest among the nurses category.

In another study performed by Kabiret al (2010) , aimed to evaluate knowledge , attitudes and behaviors of physicians concerning HBV and HCV. Researchers had distributed a semi-structured questionnaire composed of 29 items on 369 healthcare workers in Iranian hospitals.

Results showed that there is a low to moderate knowledge level among healthcare workers regarding routes of transmission of HBV and HCV and the prevalence rate, and seroconversion rates secondary to a needlestick injury.

Furthermore, results revealed that there was no significant correlation between the different specialties and: 1. Concern about HBV and HCV, 2. The understanding of needlestick injury; and 3. Correct knowledge of post-needlestick HCV infection.

Hu *et al* (2004) had investigated and compared Taiwanese dental students' knowledge of Hepatitis B virus (HBV) and Hepatitis C virus (HCV) and Human Immunodeficiency Virus (HIV), besides to explore their attitudes towards the infected patients and factors impacting their willingness to treat infected patients. They had distributed a self-administered questionnaire with closed ended questions on 1930 dental students in seven dental schools in Taiwan. Results showed that 80%, 75%, and 49% of the respondents were willing to treat HBV, HCV, and HIV patients, respectively. Moreover, it was found that students were less knowledgeable about HCV infection compared to HBV and HIV infections.

A study conducted by Ghanaei *et al* (2013) aimed to determine the knowledge level and attitudes of medical students in Guilan University towards hepatitis B and C viral infections. Study sample was composed of 424 medical students, and a standardized questionnaire was applied on the study sample. Results showed that there is a weak knowledge and attitude level of medical students, especially in the preventive methods, and in those groups of students who have less close contact with the patients. Moreover, study found that there is a positive correlation between students' knowledge and attitudes towards HBV and HCV infections.

One year later, Elkazeh *et al* (2014) had conducted a study to assess the knowledge level and attitudes towards patients with hepatitis C among nursing interns in Tanta university hospital. Descriptive correlation study was implemented on a convenient sample of 200 nursing interns. A pre-designed questionnaire was developed and applied on the study sample. Results showed that 11.5% of nursing interns had poor knowledge, 66.5% had a moderate knowledge and 28% had a good level of knowledge about patients with hepatitis C. Also, 50.5% of the nursing interns showed positive attitudes and 73.2% of them had good level of knowledge, while 49% of nursing interns had negative attitudes towards patients with hepatitis and only 26.8% of them were having a good level of knowledge.

Moreover, Shahbaz *et al* (2014) had performed a study entitled as "Hepatitis B and C: knowledge, attitudes and perception of medical students at Lahore medical and dental college, Lahore. As a descriptive cross sectional survey that involved the implementation of an evaluation questionnaire distributed over 280 medical students in different academic years. Results showed that about 80 – 90% showed a good knowledge level about transmission and prevention of these infections. Furthermore, results had indicated that medical students level of knowledge was associated with the academic grade, and the overall knowledge was found to be high, but vaccination status was low for this particular group.

Abdela *et al* (2016) had investigated and assessed the knowledge, attitudes, and practices toward prevention of hepatitis viral infection among students of medicine and health sciences in northwest Ethiopia. A cross sectional study was conducted on 246 students of healthcare professions. Results showed that majority of the study participants (more than 80%) had an adequate knowledge on risk factors of hepatitis viral infection, its mode of transmission, and preventions. About 83.3% of the respondents had positive attitudes towards following infection control guidelines, while 81.7% of the respondents believe that all healthcare workers should take hepatitis vaccinations.

Justification of the study:-

Several studies had reported that there is an increasing prevalence rate of Hepatitis C infection. Moreover, studies had showed that healthcare workers who are in direct contact with Hepatitis C patients are the most exposed category to HCV infection, which requires the healthcare workers to possess high level of knowledge and positive attitudes towards the transmission, prevention and patients of Hepatitis C viral infection.

Study setting representing the selected hospital, had reported verbally that there is an increasing rate of HCV infection among citizens and healthcare workers in the recent years. which had motivated the researcher to perform this study.

Finally, one of the motivating factors to perform this study is the lack of the regional studies in Saudi Arabia, that examines and investigates the healthcare workers attitudes and knowledge level regarding HCV patients and transmission methods of the viral infection.

Limitations of the study:-

1. Current study has a narrow scope due to several limitations that could influence the results of the study, they are:
2. Restricted geographical spot of the study which limits the generalization of the study results to other areas.
3. Study sample is restricted to medical interns who are in direct contact with HCV patients, ignoring other healthcare workers categories, such as nurses and lab technicians.
4. Other aspects of HCV infection knowledge are not covered by this study, such as HCV treatment.
5. Limited size of the study sample could limit the validity of the results.

Research design and methodology:-

A cross sectional descriptive study, including 100 Saudi medical interns in hemodialysis units in King Abdulaziz Medical City in Riyadh city, Kingdom of Saudi Arabia.

Study population is represented by both male and female medical interns working, or previously worked in hemodialysis units in King Abdulaziz Medical City in Riyadh city, Kingdom of Saudi Arabia.

Study setting:-

The study will be conducted in the hemodialysis units in King Abdulaziz Medical City in Riyadh city, Kingdom of Saudi Arabia.

Sample size, selection of sample and data collection:-

Convenient sampling will be performed to get the study sample. Data will be collected using a semi structured questionnaire.

Socio-demographic data of the participants will be collected by another part of the study questionnaire.

Data regarding medical interns knowledge and attitudes towards Hepatitis C virus transmission will be collected using the study instrument that will be built in using available literature review.

Data analysis will be performed after coding study participants' responses using Statistical Package for Social Sciences (SPSS) software. Frequencies, percentages, means, and standard deviations will be utilized to extract the study results.

Reliability: Reliability of the study tool will be checked using Cronbach's Alpha coefficient.

Validity: The content validity of the research tool for its completeness and clarity had been maintained through literature review and consultation with concerned advisor.

Ethical considerations and human subject issues

- Formal approval will be obtained from the concerned authorities.
- Informed verbal consent will be obtained from study subjects before participating
- Confidentiality will be maintained throughout the study and will be maintained later.
- It is voluntary to participate in the study.

Results and discussion:-

This study aims to investigate and assess the knowledge of medical interns regarding hepatitis C virus transmission methods, besides to determining their attitudes towards hepatitis C virus patients.

In this chapter, we present a detailed preview of the study results based on the study participants responses to the study instrument (Appendix A)

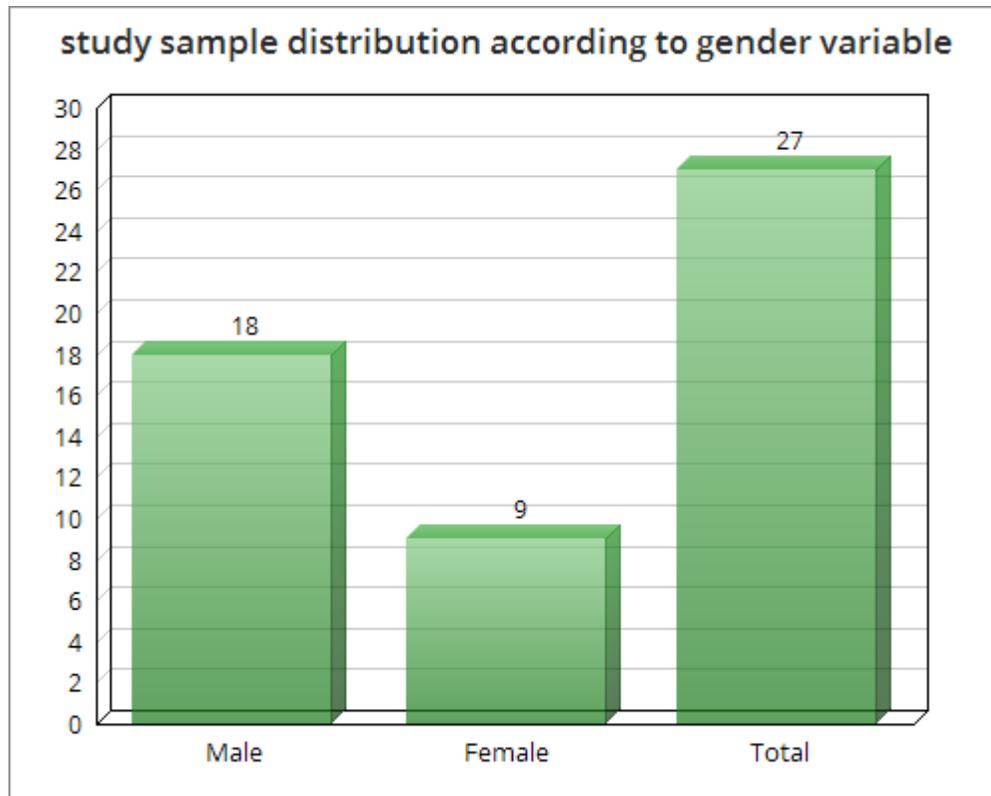
Study sample distribution according to Age variable:-

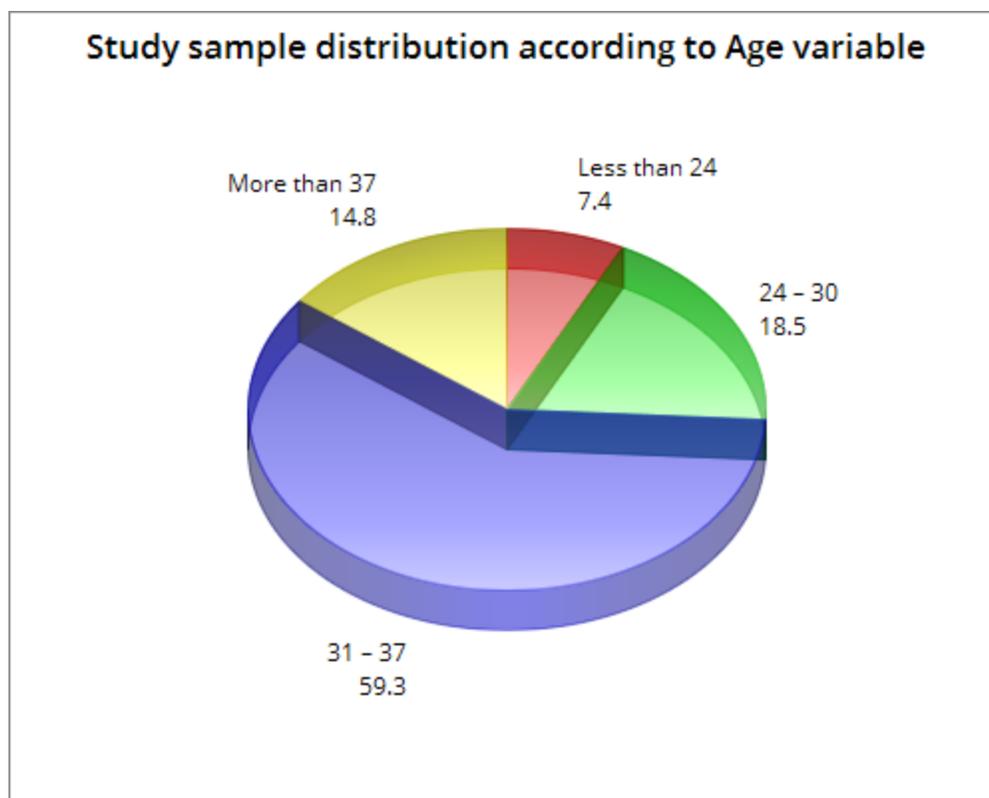
Results presented in table (1) show that participants ranging in age between 31 to 37 were representing the highest category among the study participants and constituted 59.3%, followed by the category of the participants ranging an Age between 24 to 30 years (18.5%). The third rank, was for the medical interns who were more than 37 years

old (14.8%) , and finally came the category representing the participants who were less than 24 years old , and constituted 7.4% of the total study sample.

Table 1:- Study sample distribution according to Age variable

Category	Frequency	Percentage
Less than 24	2	7.4%
24 – 30	5	18.5%
31 – 37	16	59.3%
More than 37	4	14.8%
Total	27	100%





Study sample distribution according to gender variable:-

Results shown in table (2) indicate that about two thirds (66.7%) of the study sample were males , while one third (33.3%) was of females.

Table 2:- study sample distribution according to gender variable

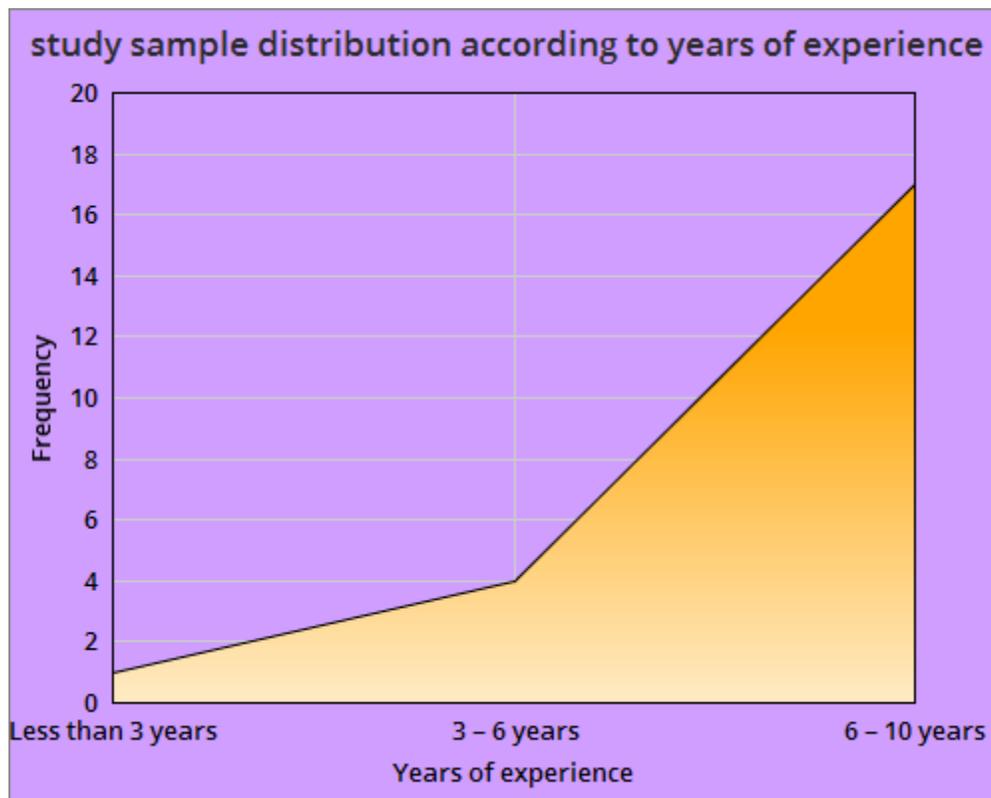
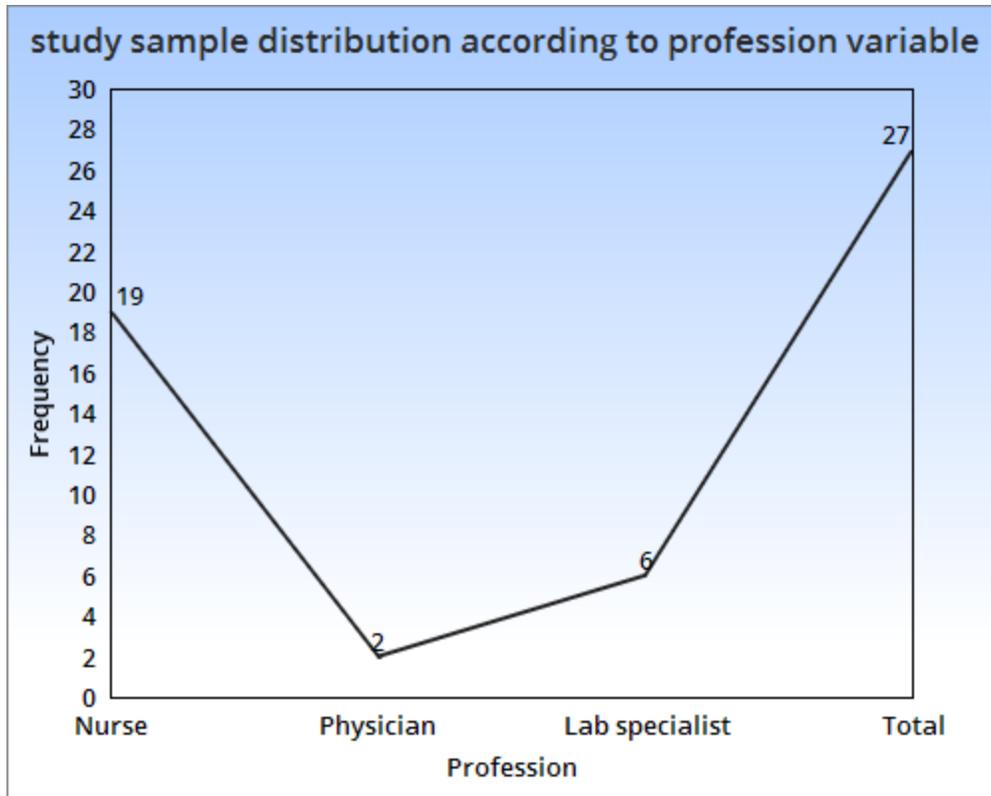
Gender	Frequency	Percentages
Male	18	66.7%
Female	9	33.3%
Total	27	100%

Sample distribution according to profession variables:-

Study sample distribution according to profession variable shows that the majority of the study sample is composed of nurses (70.4%) , followed by laboratory specialists category (22.2%) , and the least represented category were the physicians who constituted 7.4% of the total study sample .

Table 3:- study sample distribution according to profession variable

Profession	Frequency	Percentage
Nurse	19	70.4%
Physician	2	7.4%
Lab specialist	6	22.2%
Total	27	100%



Study sample distribution according to participants years of experience

Results presented in table (4) show that the most represented category according to the number of experience years was for participants whose their experience was ranging between 6 to 10 years and constituted (63%) , while those who exceeded 10 years of experience came secondly by a percentage equals to 18.5% . moreover , participants possessing an experience period ranging between 3 to 6 years constituted 14.8% , while the least represented category was those whose their experience years were less than 3 years and constituted (3.7%) of the total study sample.

Table 4:- study sample distribution according to years of experience

Years of experience	Frequency	Percentage
Less than 3 years	1	3.7%
3 – 6 years	4	14.8%
6 – 10 years	17	63%
Total	27	100%

Mean and standard deviation scores for the knowledge and attitudes scale items:-

Table (5) shows the mean and standard deviation scores of the knowledge and attitudes scale . it is clear from the previous results that there is a high level of knowledge regarding HCV transmission methods. Participants showed that they have a good knowledge level regarding HCV transmission through Saliva (2.89 ± 0.75) , and transmission through blood transfusion from an infected donor (2.74 ± 1.03) , and for the negative items , the low score means higher knowledge . for example , participants showed higher knowledge regarding that ingestion of HCV contaminated food (1.59 ± 0.56) is not a transmission method, as well as kissing an HCV positive individuals (1.93 ± 0.39) and transmission is possible via breast feeding (wrong statement) (1.36 ± 0.73).

Furthermore , participants had showed that they possess a good knowledge level for the positive statements stating that " sharing needles while injecting drugs is a transmission method " (2.86 ± 0.71) , and being born to an HCV positive mother (2.94 ± 0.61)

Responses to questionnaire items measuring participants knowledge about HCV prevention , had showed that there is a high level of knowledge among medical interns . for example , participants showed a good level of knowledge in that using gloves is useful in preventing HCV infection (2.86 ± 0.44) , and avoiding renal transplantation can prevent HCV infection (2.54 ± 0.64).

Items designed to investigate attitudes of medical interns towards HCV patients had showed that there is a positive attitude among the study participants regarding willingness to treat people with HCV (2.21 ± 0.33) , and their feelings towards people who contacted HCV through a blood transfusion (2.76 ± 1.01) . finally , participants responded negatively to the negative items stating " I don't like treating people with HCV infection " (1.31 ± 0.72) which indicates to their positive attitudes towards HCV patients.

Table 5:- Mean and standard deviation scores for the study instrument items

Item	Mean	Standard deviation
Transmission is possible via saliva	2.89	0.75
Receiving a blood transfusion from an infected donor	2.74	1.03
Ingestion of HCV contaminated food	1.59	0.56
Sharing needles while injecting drugs	2.86	0.71
Kissing an HCV- positive individual	1.93	0.39
Being born to an HCV positive mother	2.94	0.61
Using gloves is useful in preventing HCV infection	2.86	0.44
Avoiding renal transplantation can prevent HCV infection	2.54	0.64
Transmission is possible via breast feeding	1.36	0.73
I am willing to treat people with HCV	2.21	0.33
I feel sorry for people who contracted HCV through a blood transfusion	2.76	1.01
I don't like treating people with HCV infection	1.31	0.72

Summary:-

Hepatitis C is a blood borne infection that is transmitted only by blood . statistics showed that there is an increasing number in HCV infections and increase in mortality rate due to its prevalence.

This study aimed to investigate the knowledge level and attitudes of medical interns in hemodialysis units regarding HCV transmission and HCV patients.

Results showed that medical interns possess a good level of knowledge regarding HCV transmission methods , besides to the good level of knowledge regarding the prevention of HCV infection.

Furthermore , results showed that medical interns have a positive attitudes towards patients infected by HCV , and dealing with them