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Quality of life of Hepatitis "C" Patients undergoing Interferon Therapy in Benha City

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Abstract

Hepatitis C virus is an important public health problem in both developing and developed countries. Egypt has the highest prevalence of hepatitis C in the world. **The study aimed to** assess the quality of life of hepatitis "C" patients undergoing interferon therapy in Benha City. **Research design:** Descriptive research design was utilized to conduct this study. **Setting:** the study was conducted at Hepatic Center at Fever Hospital in Benha City. **The sample:** Simple random sample was used to choose 150 patients with chronic hepatitis C receiving interferon therapy regardless their age &sex. **Tools of data collection**I: A structured interviewing questionnaire to assess patients' socio-demographic characteristics, present and past medical history, Knowledge and practices related to chronic hepatitis C and interferon therapy. II: Quality of life scale of hepatitis "C" patient's undergoing interferon therapy. **Results:** Hepatitis C was more prevalent among males than females in the study sample, 74.0% of the studied sample were males, 44.7% of patients had good total knowledge score about hepatitis C and interferon therapy, 76% had satisfactory total practices, 21.3% of them had good total quality of life score. **Conclusion:** There was statistically significant difference in relation to marital status among studied sample, there was no statistically significant difference between patients' total practices and their total quality of life. Also there was no statistically significant difference between patients' total knowledge and their total practices. **Recommendations:** Health education program should be conducted at Hepatic Center to improve knowledge, practice and their quality of life of hepatitis C patients.

Key words: Hepatitis C, Quality of life, Interferon, Side effects.

Introduction

Hepatitis C virus is one of the most common viral hepatitis that affects the liver. It is a lethal human virus that can cause a chronic lifelong infection of the liver resulting in progressive liver disease that culminates in the development of cirrhosis and Hepato-Cellular Carcinoma (HCC)**(World Health Organization, 2012).**

Hepatitis C becomes the concern both to developed and developing countries as it continuous to cause substantial morbidity and mortality worldwide. It causes more lost years of life and illness than any other infectious disease. It is now the most common cause of liver transplantation and premature mortality especially in persons aged 55-64 years **(Walker &Peter,2014).**

Globally, the morbidity and mortality attributable to Hepatitis C Virus (HCV)

infection continues to increase. Approximately 700 000 persons die each year from HCV-related complications, which include cirrhosis and hepatocellular carcinoma (HCC). HCV infection can be cured by antiviral treatment; however, due to the asymptomatic nature of the disease, most infected persons are unaware of their infection and, for those who are diagnosed, access to treatment remains low in many settings **(WHO, 2016).**

The primary route of HCV transmission in developed world is intravenous drug use (IDUs) while in developing world, the main methods for these widespread are due to unscreened blood transfusions and unsafe medical procedures **(Miller &Abu-Raddad,2010).**Unfortunately, there is no vaccine to prevent HCV infection, so reducing the burden of HCV infection requires implementation of primary prevention activities to reduce the risk for contracting HCV infection and secondary prevention activities to reduce the risk for liver and other chronic diseases in HCV infected persons **(WHO, 2013).**

Therapy for hepatitis C is a rapidly changing area for clinical practices. Recently, the Food and Drug Administration (FDA) approved a combination of subcutaneously administered pegylated interferon plus oral ribavirin for 48 weeks for hepatitis C treatment. Although, successful HCV treatment require adherence to the prescribed dose of medication for the prescribed period of time, its side effect that interfere with the quality of life can hamper the treatment success in many cases **(Shabash et al., 2010).**

The World Health Organization (WHO) issued the first guidelines for the screening, care and treatment of persons with hepatitis C infection in 2014. Since then, several new medicines for the treatment of HCV infection have been introduced. Of these, daclatasvir, ledipasvir, and a combination of ombitasvir, paritaprevir and dasabuvir were added to the WHO model list of essential medicines in 2015. These medicines are transforming the treatment of HCV, enabling the use of regimens that can be administered orally, are shorter in duration (as short as eight weeks), result in cure rates higher than 90%, and are associated with fewer serious adverse events (SAEs) than the previous interferon-containing regimens **(WHO,2016).**

According to World Health Organization, health-related quality of life (HRQOL) indicates the extent to which a disease or medical condition impacts upon the daily physical, emotional, mental and contextual well-being of an individual. In other word, it reflects the subjective perception of health. This concept is therefore increasingly considered as a relevant 'patient reported outcome'. Health-related quality of life measures can offer evaluate different aspects of well-being and functioning. In recent years, HRQOL has become a relevant treatment outcome from epidemiological and clinical perspectives. Moreover, it is broadly employed in health economic analyses**(Bas et al., 2011).**

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. 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, Once infected, they frequently are unaware of their infection and so run the risk of unknowingly infecting others and of not receiving appropriate medical management **(Ibrahim &Madian, 2011).**

Nurses are in a key position to carry out health education since they are the health care providers who have continuous contact with patients and their families and to assess adverse effects, which are associated with a significantly reduced quality of life. It is important to determine patient's needs for

benefits of medical intervention, and determine physical, psychological, social effects of treatment for patients with chronic hepatitis C virus receiving therapy **(Shata, 2014)**

Significance of the study

Every year, 3-4 million people are infected with the hepatitis C virus. About 185 million people are chronically infected and at risk of developing liver cirrhosis and/or liver cancer. More than 350, 000 people die from hepatitis C related liver diseases every year. About 75-85% of newly infected persons develop chronic infection and 60-70% of chronically infected people develop chronic liver disease; 5-20% develops cirrhosis and 1-5% die from cirrhosis or liver cancer **(Seeff, 2013).**

Egypt has a very high prevalence of HCV than neighboring countries. The strong homogeneity of HCV subtypesfound in Egypt mostly genotype (4a) suggests an epidemic spread of HCV, since a history of injection treatment has been implicated as a risk factor for HCV, to explain the high prevalence of HCV in Egypt is the past practice of parenteral therapy for schistosomiasis. The high prevalence of HCV morbidity and may be largely responsible for the continued endemic transmission of HCV in Egypt today **(WHO, 2014).**

A recent forecast modeling study for prediction of hepatitis C seropositivity among Egyptians has shown that in 2020 the prevalence is expected to be continuing at a rate of 7/1,000 persons/year, indicative of possibly ongoing hyper-epidemic transmission **(Shabash et al. 2010).**

Aim of the study:

The study aimed to assess the quality of life of hepatitis "C" patients undergoing interferon therapy in Benha City through:

-Assessing the patient's knowledge and practices regarding disease and interferon therapy.

-Assessing the effect of hepatic disease and interferon therapy on the patient's physical, psychological and social aspects of quality of life.

Research Questions:

-Is there a relation between socio demographic characteristics of hepatitis "C" patient's undergoing interferon therapy and their quality of life?

-Is there a relation between hepatitis "C" patient's undergoing interferon therapy practices and their quality of life?

-Is a relation between patient knowledge and practices regarding interferon therapy?

Subjects and method:

Research design:

A descriptive design was used in carrying out this study.

Setting:

The study was conducted at Hepatic Center in Fever Hospital, in Benha City where a large number of patients with chronic hepatitis C are attended to be treated and follow up of their health status.

Sampling:

Simple random sample was used in this study. The total numbers of hepatitis C patients undergoing interferon therapy attending for three months at Hepatic Center in Fever Hospital, in Benha City was 660 so, 25% were chosen randomly (165), 15 patients were excluded as pilot study so, total sample was 150 regardless their age & sex.

Tools of data collection:

Two tools were used to collect the data:

Tool I: A structured interviewing questionnaire: It was developed by investigator and supervisors staff, based on reviewing related literatures, and written in Arabic language, consisted of fourth parts to assess the following**.**

First part: Socio- demographic characteristics of the studied sample. It included 7 items closed ended questions about age, sex, marital status, residence, level of education, occupation and monthly income

Second part: Present and past medical history of patients with hepatitis C.

A- Present medical history consisted of 6 items about duration of disease, symptoms before discovering disease, present health problems, how discovering disease, onset of interferon therapy and vital signs.

B- Past medical history consisted of 4 items about presence of chronic disease, family history, degree of relativity and what are the methods which the transmitted the disease to the patient.

Third part: It was developed to assess the patients' knowledge regarding hepatitis C and interferon therapy, which included 15 items inform of close ended questions (multiple choice type) covering areas such as meaning, mode of transmission, signs and symptoms, complication of disease, lab investigation to diagnosis disease, ideal healthy diet, methods of treatment, meaning of interferon, indication, contraindication, duration of treatment, how take interferon, time of treatment, precaution during treatment and side effect of interferon.

Scoring System for Knowledge

Knowledge score for each answer was given as follows: 2 score forcomplete or true answer, while1 scoreforincomplete answerand 0 score for don't known or false answer.

The total knowledge score was considered good if the score of the total knowledge >75% (>22.5 score), while considered average if it equals 50- 75% (15 - 22.5 score), and considered poor if it is <50%(<15 score).

Fourth part: Patients' practices to care themselves as self-reported related to chronic hepatitis C and interferon therapy which included 5 items covering areas such as **nutrition** asincreasing eating healthy carbohydrates,eating vegetable fats, eating the cooking foods with the vegetable oils,eating fresh fruits and drinking fresh juices,reducing the intake of sweets(sugars),reducing the intake of animal fat, reducing the intake of animal protein(meat), avoid drinking carbonated soft drinks and avoid eating salted and preserved food,**medication** ascommitment with taking regular treatment, following up the health status regularly, immediately going to doctor if patient feels a new symptom, having the ability to inject himself with interferon, **care of inflammation insite of injection** as washing hand, determining the injection site, cleaning the injection site with alcohol cotton swabs, injecting by 45 angle degree and noticing the injection site after inject interferon therapy, **personal hygiene** as keeping the skin clean constantly,taking a daily bath using detergents free from soap, washing hands before eating and taking treatment**and fever**as making cold compresses taking antipyretic, wearing light clothes as much as possible, drinking enough fluids, using extra blankets and clothes when having the chills and measure body temperature continually.

Scoring System for Practices

For each answer was given as follows: 1 for done practice, 0 for not done practice. The total practice was calculated as follow

satisfactory answer if scored more than or equal 60% (>25.8), while considered unsatisfactory if less than 60% of total score (<25.8).

Tool II: Quality of life of hepatitis C patients undergoing interferon therapy by using health survey short form-36 (SF-36) adapted from **Ware &Sherbourne,(1992)** and modified by investigator.

Scales divided into three categories: limited, partially limited and unlimited. Measuring 8 domains, four domains in the area of**physical health** as physical functioning, physical role disability, bodily pain and general health and four domains in the area of **mental health** as vitality, social functioning, emotional role disability- and mental health. **Scale scores** for these domains were derived by summing up the component items within each domain. Each item of quality of life domain was scored two for limited, while one score for partially limited and zero score for unlimited. The score of patient quality of life was divide into good quality of life if the some of item equal 75% or more while average if the some of items equal 75-50% and poor quality of life if equal less than 50%.

Content Validity:

The tools validity were assessed by 5expertise members of Faculties Staff Nursing experts 3 of them from the Community Health Nursing specialists and 2 of them from Medical Surgical Nursing specialists who reviewed the tool for clarity, relevance, comprehensiveness, applicability and easiness for implementation and according to their opinion minor modification were carried out.

Ethical considerations:

Permission was obtained orally from each client before conducting the interview and after giving a brief orientation to the purpose of the study. Clients were also reassured that all information gathered would be treated confidentially and used only for the purpose of the study. No names were required on the forms to ensure anonymity and confidentiality. They were also informed about their right to withdraw at any time from the study without giving any reasons.

Pilot study:

It was carry out on 10% of the sample (15) of hepatitis C patients undergoing interferon therapy to test clarity, simplicity and applicability of the tools using the interviewing questionnaire. Those who shared in the pilot study were excluded from the main study sample. Based on the pilot results, the tools were modified. Modification included rephrasing and rearrangement of some questions. After refinement and modification, the final forms of the tools were developed. This pilot study was carried out in two week before starting the study.

Field work:

The actual field work was carried out over a period of 5 months from the beginning of June 2015 up to the end of October 2015. Patients consent was obtained before collection of data. The investigator visited the hepatic center from 1pm to 3.30pm, four days per week (Saturday,Sunday,Monday and Tuesday) to collect the data from the patients. After the explanation of the aim of the study. The average time needed for the sheet was around 30 minutes.

Administrative design:

Official letter was obtained and delivered from the Dean of the Faculty of Nursing, Benha University director of Fever Hospital, other official letter from Fever Hospital to the director of Hepatic Center in Benha City where the study was conducted. After obtaining the approval from Director of Hepatic Center for conducting the present study, the investigator started to

communicate with the study subjects, and explained to them the aim of the study to the study subjects.

Statistical design:

All data collected were organized, tabulated and analyzed using appropriate statistical test. The data were analyzed by using the statistical Package for Social Science (SPSS) version 20, which was applied to calculate frequencies and percentages as well as test statistical significance and associations by using chi-square test and person correlation test to detect the relation between the variables for (p value).

- P value >0.05 insignificant
- p value < 0.05 significant
- P value < 0.001 highly significant.

Result:

Table (1): Shows that, 41.3% of the studied sample aged more than 50 years old with the mean (45.9± 9.0) years, and 74.0% were males, while 93.3% were married and 71.3% were living in rural areas. And also 36.0% had secondary education, while only 22.0% had completed university degree, 18.7% couldn't read &write, 57.3% of the patients were employees and 60.7% of patients had not enough monthly income.

Figure (1): Illustrates that, 44.7% of studied sample had good knowledge score about hepatitis C and interferon therapy where as 38.7% had average knowledge score and 16.7% had poor knowledge score.

Figure (2): Shows that 76.0% of the studied sample had satisfactory practices, while only 24.0% of the studied sample had unsatisfactory practices.

Figure (3): Illustrates that, 21.3% of studied sample had good total quality of life score, while 14.3% of studied sample had poor total quality of life score.

Table (2): This table shows that there was statistically significant difference between marital status of studied sample and their total quality of life of studied sample.

Table (3): Shows that, there was no statistically significant difference between total practices of studied sample and their total quality of life.

Table (4): Shows that there was no statistically significant difference between total knowledge of studied sample and their total practices.

Table (1): Frequency distribution of the studied sample regarding socio-demographic characteristics(n= 150).

Socio-Demographic Characteristics	No.	%
Age		
<30	7	4.7
30-	32	21.3
40-	49	32.7
50+	62	41.3
Mean ± SD	**45.9±9.0**	
Gender		
Male	111	74.0
Female	39	26.0
Marital status		
Single	6	4.0
Married	140	93.3
Widowed	4	2.7
Residence		
Urban	43	28.7
Rural	107	71.3
Education degree		
Cannot Read & Write	28	18.7
Read & Write	17	11.3
Primary	18	12.0
Secondary	54	36.0
University	33	22.0
Current job		
Employee	86	57.3
Worker in field of health	9	6.0
Worker	17	11.3
Not worked	38	25.3
Monthly income		
Enough and saves	7	4.7
Enough	52	34.7
Not enough	91	60.7

Figure (1): Frequency distribution of the studied sample regarding to their total knowledge about hepatitis C and interferon therapy (n=150).

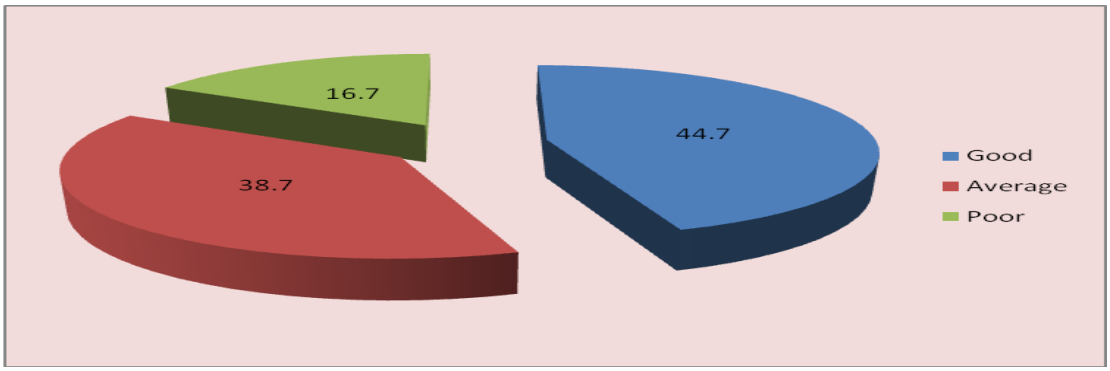


Figure (2): Frequency distribution of the studied sample regarding to their total practices score n=150.

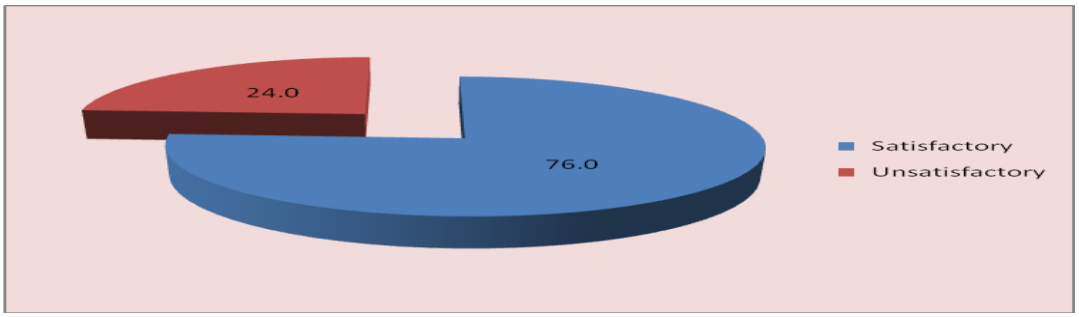
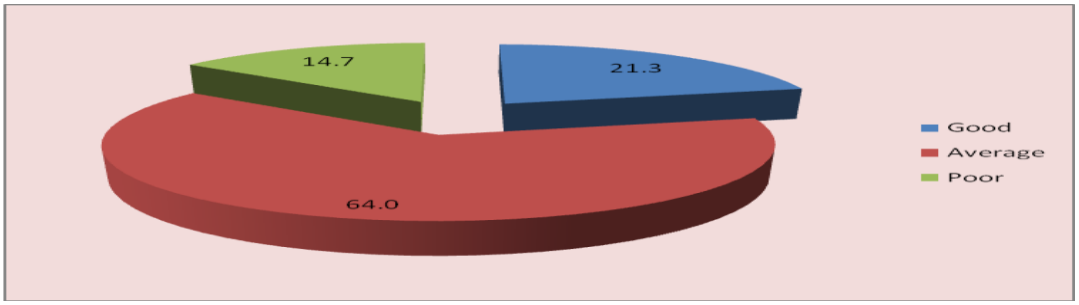


Figure (3): frequency distribution of the studied sample regarding to their total quality of life score.



Part (VI): Relation between studied sample socio- demographic characteristics and their quality of life.

Table (2): Relation between studied sample socio-demographic characteristics and their total quality of life (n=150).

Socio-demographic characteristics	Quality of Life Score						x^2	p-value
	Poor		Average		Good			
	No.	%	No.	%	No.	%		
Age								
<30	1	4.8	5	5.2	1	3.1		
30-	3	14.3	20	20.8	9	28.1	9.84	0.13
40-	3	14.3	37	38.5	9	28.1		
50+	15	71.4	34	35.4	13	40.6		
Gender								
Male	18	85.7	70	72.9	23	71.9	0.83	0.65
Female	4	19.0	26	27.1	9	28.1		
Marital status								
Single	0	0.0	3	3.1	3	9.4		
Married	21	100.0	93	96.9	26	81.3	12.26	0.015
Widowed	1	4.8	0	0.0	3	9.4		
Residence								
Urban	6	28.6	28	29.2	9	28.1	0.037	0.98
Rural	16	76.2	68	70.8	23	71.9		
Education degree								
Cannot Read& Write	2	9.5	18	18.8	8	25.0		
Read & Write	5	23.8	8	8.3	4	12.5		
Primary	1	4.8	12	12.5	5	15.6	9.62	0.29
Secondary	11	52.4	35	36.5	8	25.0		
University	3	14.3	23	24.0	7	21.9		
Current job								
Employee	16	76.2	55	57.3	15	46.9		
Worker in field of health	1	4.8	6	6.3	2	6.3	7.78	0.254
Worker	4	19.0	9	9.4	4	12.5		
Not worked	1	4.8	26	27.1	11	34.4		
Monthly income								
Enough and saves	0	0.0	5	5.2	2	6.3		
Enough	6	28.6	30	31.3	16	50.0	6.26	0.18
Not enough	16	76.2	61	63.5	14	43.8		

Part (VII): Relation between hepatitis "C" patients undergoing interferon therapy practices and their total quality of life.

Table (3): Relation between studied sample total practices score and their total quality of life score (n=150).

Total Practices Score	Total Quality of Life Score						x^2	p- value
	Poor		Average		Good			
	No.	%	No.	%	No.	%		
Poor	0	0.0	5	5.2	2	6.3	6.26	0.18
Average	6	28.6	30	31.3	16	50.0		
Good	16	76.2	61	63.5	14	43.8		

Part (VIII): Relation between studied sample total knowledge and their practices regarding interferon therapy.

Table (4): Relation between studied sample total knowledge score and their total practices score (n=150).

Total Knowledge Score	Total Practices Score						x2	p- value
	Poor		Average		Good			
	No	%	No	%	No	%		
Poor	2	1.3	7	4.7	11	7.3	3.35	.50
Average	2	1.3	12	8.0	15	10.0		
Good	3	2.0	33	22.0	65	43.3		

Discussion

Hepatitis is a disease characterized by inflammation of the liver, usually producing swelling and in many cases, permanent damage to liver tissues. Individuals with chronic HCV infection also experience fatigue, depression and anxiety, which affect their health related quality of life **(Parveen et al., 2016).**

The quality of life of patients suffering from hepatitis C is significantly affected. This decline is mainly due to extra hepatic effects, common symptoms and fear of this disease The main worry among patients is whether it can be cured or not, about the side effects during treatment and normal life span after successful completion of treatment. It is not only the health but social, financial, sexual and family life of the patients is adversely affected due to the virus. People with hepatitis C report less confidence in their current health and more concern about their health in the future **(The Ontario HIV Treatment Network, 2016).**

The current study aimed to assess the quality of life of hepatitis "C" patients undergoing interferon therapy.

Regarding socio-demographic data the present study revealed that, more than two fifths of patients aged 50 years old or more and the mean age of the studied group was 45.9±9.0 **(Table 1).** This may be due to that hepatitis C virus is a silent disease that it can't discovered easily, is usually taking no health control management, and this age is more liable for chronic disease. This finding supported by **Metwally et al., (2013)** who reported that the mean age of patients of their studied sample was 45.1±9.3. Also supported by **Shata, (2014)** who found that, the mean age of the studied sample was 44.7±9.5. According with **Rezik, (2012)** who found the mean age of study sample was 40.0±9.52, and this finding was in accordance with **Mohamed, (2011**) who found that, the mean age of studied sample was 41.06±9.31. However, this finding disagreed

with**Younossi et al., (2009)** they found that, about two fifths of the studied sample aged between 26 and 35 years old and only one fourth of the patients were aged between the ages of 46 and 55 years.

As regards gender, the present study result revealed that, three quarters of studied group were males. This may be due to that men are involved in more risky behaviors. This finding was in agreement with **Shata, (2014)** who reported that more than three quarters of the studied sample were males. This finding was also in agreement with **Rezik, (2012)** who found that more than two thirds of patients were male .According **Mohsen et al., (2011)** they reported that, the incidence of chronic hepatitis C receiving combination therapy were higher in men rather than woman. On the other hand, this finding disagreed with **Faisal, et al., (2013)** who reported that, the incidence of chronic hepatitis C among hepatitis receiving combination therapy was similar for men and women.

Regarding marital status, the studied finding revealed that, most of the present study sample were married. This result was in agreement with **Rezik, (2012)** who found that the majority of the studied sample were married.

Considering residence, the present study result revealed that, most of the studied sample reside in rural area. This may be due to lack of health care centers in rural area and patient's occupation as farmers make them liable for bilharzias. This finding disagreed with **Abd El-Shahed, (2008)** who reported that the most of sample were from urban.

Concerning educational level of the studied sample, the result of the current study showed that more than one third of the patients had secondary education degree, and one fourth of the patients had completed university degree, while minority of the sample could read &write. This result similar to **Ibrahim &Madian, (2011)** they found that, more than one third of the sample had high school level (secondary school and middle institute). This finding was in agreement with **Allen et al., (2008)** who found that two fifths of the studied sample completed university degree, while minorities of the sample were couldn't read & write. However this finding was in disagreement with **Rezik, (2012)** who found that more than one fourth of the patients were illiterate, while minority of the sample completed university degree.

As regards occupation of the studied sample, the result of the current study revealed that more than half of studied sample were employee. This finding agreed with **Ibrahim &Madian, (2011)** they found that more than half of patients were employed. But this finding was disagreed with **Rezik, (2012)** who reported that, about two fifths of studied sample didn't work.

Concerning patient's income, the result of this study revealed that, most of patients had not enough monthly income. This may be due to high cost of the treatment and chronic nature of illness **(Table 1).**This finding was in agreement with **Ibrahim &Madian, (2011)** they found that high percent of the patient reported that they had insufficient income, this due to the costly of treatment. This finding supported by **Sgorbini et al., (2009)** they mentioned that, most of patients had not enough monthly income to cover their needs in addition to cost of required periodical investigations to follow response of the treatment. However, this finding disagreed with **Mahmoud, (2013)** who the majority of them stated that their monthly income was enough.

The finding of the present study revealed that nearly half of studied sample had good total knowledge score about hepatitis C and interferon therapy whereas more than third had average total knowledge score about hepatitis C and interferon therapy and less than one fifth had poor total knowledge score about hepatitis C and

interferon therapy**(figure 1).** This finding disagreed with **Rezik,(2012)** who found that the most of studied sample had unsatisfied total knowledge score about hepatitis C and interferon therapy whereasless than one fifth had satisfied total knowledge score about hepatitis C and interferon therapy.

The finding of the present study revealed that more than two thirds of studied sample had satisfactory total practices score,while only quarter of thestudied sample had unsatisfactory total practices**(figure2).**This finding supported by **Ibrahim & Madian, (2011)**they found that the most of studied sample had good total practices score.

The finding of the present study revealed that nearly two thirds studied sample had average total quality of life score, nearly one fifth had good total quality of life score and less than one fifth had poor total quality of life score **(figure 3).** This result similar with **Mahmoud &Abd Elaziz, (2014)** they explained that hepatitis C infection has a profound impact on the patient's health-related quality of life physical, psychological and social behavior, the most of the patients reported that their quality of life decline since diagnosis of hepatitis C.

Also these result similar to **Malekzadeh et al., (2013)** they explained hepatitis C itself is also associated with poorer health status particularly in the physical, social and cognitive domains, which might be related to brain alterations induced by the virus. According to **Foster, (2009), and Tawfik, (2011)** they found significant reduction in all domain quality of life by using SF-36 HRQOL questionnaire, in the different studies in Egypt, Greek and Taiwan.

Reflecting this experience, investigators have found that the HRQOL for people on pegylated interferon tend to decline at first 6 weeks of treatment, but then generally returns to baseline. Both fatigue and depression tend to improve at the conclusion of pegylated interferon treatment. Also, no one experiences all the side effects of any medication, and some people do not experience any

- **According to research question No.1,** Is there a relation between socio demographic characteristics of hepatitis "C" patient's undergoing interferon therapy and their quality of life?

Relation between socio demographic characteristics of hepatitis "C" patients undergoing interferon therapy and their quality of life **(Table 2).**There was statistically significance difference in relation to marital status among study sample. This may be due to the wife or husband provides support for each other so this may reflect on improving their quality of life.

- **According to research question No.2,** Is there a relation between hepatitis "C" patient's undergoing interferon therapy practices and their quality of life?

Relation between hepatitis "C" patients' undergoing interferon therapy practices and their quality **(Table 3).** There was no statistically significance difference between total practices and total quality of life. This may be due to that patients undergoing interferon therapy interfere with their quality of life so they quality of life didn't linked with their practice.

- **According to research question No.3,** Is a relation between patient knowledge and practices regarding interferon therapy?

Relation between patient knowledge and practices regarding interferon therapy **(Table 4)**.There was no statistically significance difference between total knowledge score and total practices. This may be due to that patients receive direct instruction from the doctors about hepatitis C

and interferon therapy practices to care themselves.

Conclusion

Based on the results of the present study and research questions, the following can be concluded:

More than two fifths of the patients had good total knowledge score regarding hepatitis C and interferon therapy. More than two thirds of patients had satisfactory total practices regarding hepatitis C and interferon therapy. More than one fifth of patients had good total quality of life score. There was statistically significant difference in relation to marital status among studied sample, there was no statistically significant difference between patients' total practices and their total quality of life. Also there was no statistically significant difference between patients' total knowledge and their total practices.

Recommendations*:*

In the light of the result of the present study, the following recommendations are suggested:

- Health education program should be conducted in hepatic center to improve knowledge, practice and quality of life of the hepatitis C patients undergoing whatever the types of medication
- Mass media should provide both public and patients with accurate information about hepatitis and its treatment.
- Further studies needed to be focusing on improving quality of life of hepatitis Cpatientsundergoing any type of medications

References

Abd El-Shahed, B. (2008): Factors affecting quality of patients with liver cirrhosis. Unpublished Master's Thesis in nursing science. Faculty of Nsg, Ain Shams University, Egypt,pp.80-86.

Allen, A.;Craxi, A. and Kamal, S. (2008): The neglected hepatitis C virus genotypes 4, 5 and 6: An international consensus report. Liver Int Mar; 30(3): 342-355

Bas, V.; Bideci, A.;Yesilkaya, E.; Soysal,S.; Camurdan, O. and Cinaz, P. (2011): Evaluation of factors affecting quality of life in children with type 1 diabetes mellitus. Available at: http://www.omicsonline.org/2155-6156/2155-6156-2-154.php.

Faisal, A.; Zytoon, A.; Naser, A.; Gad-Allah, H. and Dawood, A. (2013): Predictors of early virological response of viral hepatitis C to Combination Therapy WithPegylated Interferon; Plus Ribavirin. American Journal of Clinical Medicine Research, 1(4)54-60.

Foster, G. (2009): Quality of life considerations for patients with chronic. Journal of Viral Hepatitis, 16: 605-611.

Ibrahim, M. and Madian, A. (2011): Impact of Hepatitis C on Health-Related Quality of Life in Egypt. Journal of American Science. 7 (11): 430-434. Available at http://www.americanscience.org.

Mahmoud, B. (2013): Impact of a designed supportive nursing program for hepatitis C patients on their functional health status during interferon therapy in the National Hepatology Medicine Research Institute. Thesis Doctorate Degree, Medical-Surgical Nursing, Faculty of Nursing, Cairo University,pp.80-86.

Mahmoud, S. and AbdElaziz, N. (2014): Coping Strategies versus Health-Related Quality of Life among Hepatitis C Patients. Thesis, Community Health Nursing and Psychiatric Nursing. Faculty of Nursing, Ain Shams University; 5(15): ISSN 2222-1735(Paper), ISSN 2222-288X.Available at www. iiste.org.

Malekzadeh, R.; Poustchi, H. and Modabbernia, A. (2013) Neuropsychiatric and psychosocial issues of patients with hepatitis C infection: A Selective literature review. Hepat Mon. 13(1): 8340..

Metwally, M.; Ghada, A.; Latif, A.;Rabah, M. and Mohsen, A. (2013): Impact of hepatitis C virus chronic infection on quality of life in Egypt. World Academy of Science, Engineering and Technology International Journal of Medical, Dentistry, Pharmaceutical, Health Science and Engineering: pp.7-12.

Miller, F. and Abu-Raddad, L. (2010): Evidence of intense ongoing endemic transmission of hepatitis C virus in Egypt. Proceedings of the National Academy of Sciences of the United States of America. 107(33):14757–62.

Mohamed, M. (2011): Hepatitis C Virus (HCV) infection in a community in the Nile Delta: Population description and HCV prevalence. Hepatology, 32:111-15.

Mohsen, M., El-Sheikh, A.and Abbas, S. (2011): Effect of nursing management protocol on selected side effects of interferon and ribavirin among hepatitis C patients. Journal of American Science, 7(6): 54-63.

Parveen, M.; Naveen, M.; Vani, M.; Ajay,C.; Ishita, S.; Abhishek, C. and Parul, C.(2016): Impact of hepatitis C on quality of life. Advanced research in GagtroHepatol 1(4): 1-3.

Rezik, S. (2012): Assessment Knowledge for patients with chronic hepatitis (C) receiving interferon therapy. Thesis, Medical-Surgical Nursing, Faculty of Nursing, Benha University,pp.79-84.

Seeff, L.B., (2013): Sustained virologicrespose: Is This Equivalent To Cure of Chronic Hepatitis C. Hepatology; 57(2):438-440.

Sgorbini, M.; Brien, L. and Jackson, D. (2009): Living with hepatitis C and treatment: The personal Experiences of Patients. J C linNurs, 18:2282-2291.

Shabash, A.; Habas, M.; Alhajrasi, A.; Furarah, A.; Bouzedi, A. andDaw, M.(2010): Forecast modeling for prediction of hepatitis B and hepatitis C seropositivity among Libyan population. Clinical Microbiology Infection Journal; 16 (2): 120.

Shata, Z. (2014): Needs Assessment of patients with Chronic Hepatitis C Virus Receiving Combination Therapy. Thesis, Medical-Surgical Nursing, Faculty of Nursing, Ain Shams University,pp.34-36.

Tawfik, E. (2011): Impact of an educational program on health related quality of life among virus hepatitis C patients. Alexandria University. High Institute of public health. pp.35-38.

The Ontario HIV Treatment Network (2016): Impact of successful hepatitis C treatment on quality of life. Rapid response service #107, MAY 2016.

Walker, M. and Peter, F. (2014): Viral hepatitis C, Tropical infectious disease, Principles, Pathogens and Practice. 3rd. Philadelphia: Elsevier Co; 65-66.

Ware, J., Sherbourne, C. (1992): The MOS 36-item short-form health survey (SF-36). Conceptual frame work and item selection. Med.Care, 30: 473-483.

World Health Organization (2012): Prevention and control of viral hepatitis infection: framework for global action. Geneva:

World Health Organization (2013): Hepatitis C Fact Sheet. Available at: http://www.who.int/mediacentre/fact sheets/fs/64/en/index.html.

World Health Organization (2014): Hepatitis C virus guidelines for the screening, care and treatment of persons with hepatitis C infection. nIsbn 978 9241548755 Available at: http://WWW.int/hiv/pub/hepatitis/hepatitis C guidelines en/visit.

World Health Organization (2016): New Recommendations In The Updated WHO. Guidelines for the Screening, Care and Treatment Of Persons With Chronic Hepatitis C Infection. Available on the WHO website (www.who.int or World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.:+41 22 791 3264; fax:+41 22 791 4857; e-mail: bookorders@who.int.

Younossi, Z.;Kallman, J. and Kincaid, John. (2009): The effects of HCV infection and management on health relatedquality of life, Hepatology,.45(3): 806-816.