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: 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. 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 subtypes found 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 there 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 for complete or true answer, while 1 score for incomplete answer and 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 as increasing 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), avoiding drinking carbonated soft drinks and avoid eating salted and preserved food, medication as commitment 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 inside 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 5 expertise 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
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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).

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

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).

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>Quality of Life Score</th>
<th>x²</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor No.</td>
<td>%</td>
<td>Average No.</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>1</td>
<td>4.8</td>
<td>5</td>
</tr>
<tr>
<td>30-</td>
<td>3</td>
<td>14.3</td>
<td>20</td>
</tr>
<tr>
<td>40-</td>
<td>3</td>
<td>14.3</td>
<td>37</td>
</tr>
<tr>
<td>50+</td>
<td>15</td>
<td>71.4</td>
<td>34</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td>85.7</td>
<td>70</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>19.0</td>
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<tr>
<td>Marital status</td>
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<td></td>
</tr>
<tr>
<td>Single</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
<tr>
<td>Married</td>
<td>21</td>
<td>100.0</td>
<td>93</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>4.8</td>
<td>0</td>
</tr>
<tr>
<td>Residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>6</td>
<td>28.6</td>
<td>28</td>
</tr>
<tr>
<td>Rural</td>
<td>16</td>
<td>76.2</td>
<td>68</td>
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<td>Education degree</td>
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<tr>
<td>Cannot Read&amp; Write</td>
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<td>9.5</td>
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<tr>
<td>Read &amp; Write</td>
<td>5</td>
<td>23.8</td>
<td>8</td>
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<tr>
<td>Primary</td>
<td>1</td>
<td>4.8</td>
<td>12</td>
</tr>
<tr>
<td>Secondary</td>
<td>11</td>
<td>52.4</td>
<td>35</td>
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<td>University</td>
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<td>14.3</td>
<td>23</td>
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<td>Current job</td>
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<tr>
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<td>16</td>
<td>76.2</td>
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<tr>
<td>Worker in field of health</td>
<td>1</td>
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<td>Worker</td>
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<td>9</td>
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<tr>
<td>Not worked</td>
<td>1</td>
<td>4.8</td>
<td>26</td>
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<td>Monthly income</td>
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<td>Enough and saves</td>
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<td>0.0</td>
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</tr>
<tr>
<td>Enough</td>
<td>6</td>
<td>28.6</td>
<td>30</td>
</tr>
<tr>
<td>Not enough</td>
<td>16</td>
<td>76.2</td>
<td>61</td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Total Practices Score</th>
<th>Total Quality of Life Score</th>
<th>x²</th>
<th>p- value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
<td>Average</td>
<td>Good</td>
</tr>
<tr>
<td>Poor</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0.0</td>
<td>5</td>
</tr>
<tr>
<td>Average</td>
<td>6</td>
<td>28.6</td>
<td>30</td>
</tr>
<tr>
<td>Good</td>
<td>16</td>
<td>76.2</td>
<td>61</td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Total Knowledge Score</th>
<th>Total Practices Score</th>
<th>x²</th>
<th>p- value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
<td>Average</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Poor</td>
<td>6</td>
<td>1.3</td>
<td>7</td>
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<tr>
<td>Average</td>
<td>7</td>
<td>4.7</td>
<td>12</td>
</tr>
<tr>
<td>Good</td>
<td>17</td>
<td>10.0</td>
<td>33</td>
</tr>
</tbody>
</table>

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
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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 whereas less 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 the studied sample had unsatisfactory total practices(figure 2). 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 C patients undergoing any type of medications

**References**


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