Factors Associated with Self Care Practices among Patients with Hepatitis C Virus

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Abstract

Hepatitis C virus (HCV) is an important public health problem both in developed and developing countries. Living with hepatitis C involves learning to live with the physical, emotional, social and financial consequences of the disease. All of these changes can affect patient's ability to cope with chronic HCV with profound negative impacts on self-care practices. Self-care as a part of daily living is the care taken by individuals towards their own health and well-being, which includes the care extended to their children, family, friends and others in neighborhoods and local communities. Self-care practices play an important role in disease management, treatment and achieving better health outcome. ***Objective:*** *Identify factors associated with self-care practices among patients with hepatitis C virus.* ***Setting:*** *The study was conducted at outpatient clinic of Liver Institute in Kafr El-Sheikh (Ministry of Health).* ***Subjects:*** *340 adult patients diagnosed with HCV infection.* ***Tools:*** *Three tools were utilized for the purpose of data collection; socio-demographic and clinical data interview schedule, hepatitis C virus patients' knowledge structured interview questionnaire, and hepatitis C Virus self-care practices structured interview questionnaire.* ***Results:*** *There were multiple factors influencing patients' self-care practices including age, sex, educational level, marital status, type of work, income, residence and clinical onset and duration of disease, history of associated diseases and taking medications for these associated diseases.* ***Conclusion:*** *There were four factors together statistically significant influence patients self-care practices including educational level, age, income and residence.* ***Recommendations:*** *Development of health education programs for HCV patients and their families to teach them how to apply self-care practices and how to deal with factors affecting patients' self-care practices to avoid subsequent complications of HCV.*

Keywords: Hepatitis C; Self-care practices.

Introduction

Hepatitis C virus (HCV) infection is a blood born infectious disease that damages the liver by inflammatory cells[(1)]. It is one of the main causes of chronic liver disease worldwide. The long-term impact of HCV infection is highly variable, ranging from minimal histological changes to extensive fibrosis and cirrhosis with or without hepatocellular carcinoma (HCC)[(2)]. The number of chronically infected persons worldwide is estimated to be about 160 million, and most of them are unaware of their infection[(3)].

The World Health Organization (WHO, 2016) found that Egypt has the highest prevalence of HCV in the world, with approximately 22 percent of Egyptian blood donors testing positive for the disease. According to HCV Advocate, Egypt suffers from a particularly high morbidity and mortality rate, with 40,000 dying from HCV disease each year[(4)].

Infection with HCV is a major public health problem in Egypt[(5)]. The disease is primarily transmitted parenteral, the most common mode of transmission. Mother to infant transmission; is also called vertical transmission is uncommon but it does

occur[6,7]. Sexual transmission of HCV through intercourse play role in ongoing spread of the disease[8].

Many people with hepatitis C do not have symptoms and do not know that they are infected. If symptoms occur they can include: fatigue, weakness, muscle ache, and anorexia, but jaundice is rare. If symptoms occur with acute infection they can appear from 2 weeks to 6 months after infection. On the other hand, if symptoms occur with chronic hepatitis C, they can take decades to develop[9].

Hepatitis C virus treatment can delay or prevent many of the complications of disease[10]. The current standard-of-care for hepatitis C involves taking one of two newly approved therapies, Sovaldi or Olysio, plus ribavirin and in many cases pegylated interferon as well[11].

Reducing the burden of HCV infection and HCV-related disease require implementation of primary prevention activities that reduce risks for contracting HCV infection and secondary prevention activities that reduce risks for liver and other chronic diseases in HCV-infected persons[12]. In addition, surveillance and activities evaluation are required to determine the effectiveness of prevention programs in reducing incidence of disease, identifying persons infected with HCV, providing appropriate medical follow-up, and promoting healthy life styles and behaviors[13].

Patients coping with a chronic illness may find that the illness can impact life in a number of ways. One may become tired easily or be often in pain, experience changes in appearance or physical abilities, or finds that prescribed medications have undesirable side effects[14]. Patient who is unable to work after the onset of a chronic illness may worry about financial difficulties and experiences stress or anxiety as a result. Feelings of anger or depression may also affect those experiencing a chronic illness, as some people may find it difficult to perform self-care[15].

Olivardia (2015), defined self-care as anything "that affirms and strengthens physical, psychological, relational, emotional, and spiritual well-being"[16]. The three major factors associated with self-care are symptoms associated with chronic hepatitis C (CHC), treatment the disease itself. Other factors can be classified into, demographic (Host factors), physical, psychosocial, comorbid conditions**,** patient's information and skills related to HCV. So ,in order to achieve better outcomes among patients with HCV, it is essential to identify and understand factors associated with self-care practices among patients with hepatitis C virus over time is important for the provision of appropriate and targeted interventions[17].

Moreover, they will enable nurse to play a significant role, in providing holistic care for these patients. This care will be individualized taking into consideration all aspects of patients' life physical, psychological and social, in order to enhance their health life[18].

Aim of the Study

This study aimed to identify factors associated with self-care practices among patients with hepatitis C virus.

Research Questions:

What are the factors associated with self-care practices among patients with hepatitis C virus?

Materials and Method

Materials

Design: A descriptive research design was used to meet the aim of the study.

Setting: The study was conducted at outpatient clinic of Liver Institute in Kafr El-Sheikh (Ministry of Health).

Subjects: The Epi info program was used to estimate the sample size based on using 5% acceptable error, 95% confidence coefficient, 50% expected frequency and population size of 2476 per year. The

program revealed a minimum sample size to be 333 patients of hepatitis C.

A convenient sample of 340 adult patients diagnosed with HCV infection. It was assigned from the above mentioned setting according to the following criteria:

- Adult patients aged from 21-60 years**.**
- Able to communicate verbally**.**
- Six months post diagnosis; since it is expected that this period is enough for patients to be adapted to the disease process[9].

Tools: In order to achieve the aim of the study, three tools were utilized for data collection:

Tool I: Socio-demographic and Clinical Data Interview Schedule

This tool was developed by the researcher based on relevant related literature. It included two main parts:

Part I: Socio-demographic data included; patient's age, sex, level of education, marital status, occupation, income and residence.

Part II: Clinical data included; clinical history of patients and their families; family history related to hepatitis C virus, clinical onset of disease**,** duration of disease, type of medication used, adherence with medications and previous hospitalization.

Tool II: Hepatitis C Virus Patients Knowledge Structured Interview Questionnaire (HPKSIQ)

This tool was developed by the researcher based on relevant related literature[19-21], to assess patient's knowledge regarding hepatitis C virus. It included group of closed end questions related to the following eight areas of concern distributed as following:

1. Definition of hepatitis.
2. Risk factors of hepatitis C including; therapeutic maneuver, folk medication practices, occupational hazards and daily living practices.
3. Mode of transmission of hepatitis C included; statements related to ; blood or blood products transfusion, hemodialysis and dentists equipment and needle sticking in health care centers.
4. Signs & symptoms of hepatitis C included; fatigue &weakness, nausea & vomiting, fever and jaundice.
5. Laboratory investigations needed for HCV diagnosis included; liver functions test, Polymerase chain reaction (PCR), HCV antibodies and liver biopsy.
6. Complications of hepatitis C included; chronic hepatitis, hyperbilrubinemia, cirrhosis, hepatocellular carcinoma.
7. Treatment of hepatitis C included; interferon, interferon and ribavirin, or both (combination therapy), sovaldi, sovaldi and ribavirin.
8. Side effects of the treatment included; nausea &vomiting, anorexia, fatigue, exhaustion and myalgia.

Patients' knowledge was scored on 3 point Likert scale (0=wrong answer or don't know, 1=correct and incomplete answer, 2=correct and complete answer). Total score was calculated then converted to percentage. Patients knowledge was calculated as follows: < 50% was considered poor knowledge, 50% < 65% fair knowledge, 65% < 75% was considered good knowledge and > 75% very good knowledge.

Tool III: Hepatitis C Virus Self-Care Practices Structured Interview Questionnaire (HSPSIQ)

This tool was developed by the researcher based on relevant related literature[22,23] to assess patients self-care practices regarding hepatitis C virus. It included a group of closed end questions related to the following eight areas of concern distributed as following:

1. Exercise and daily physical activities: (7 statements) related to; perform daily activities, take breaks between acts, go to work regularly, activities

order so don't take a great effort and time, work without help, do exercise regularly and going out for entertainment or leisure.

2. Rest and sleep: (7 statements) related to; sleeping for sufficient hours at the night, measures to overcome sleeping problems, improve of pattern and resting for adequate hours during the day.
3. Nutrition: (4 statements) related to; compliance with prescribed diet and following special diet to increase immunity and resisting virus.
4. Alcohol: (2 statements) related to; avoid alcohol substances and avoid drugs and tranquilizers.
5. Personal hygiene: (4 statements) related to; taking bath, oral hygiene and dental care, skin cleaning to reduce itching and use moisturizers for skin.
6. Adherence with medications: (6 statements) related to; take the prescribed medications, take appropriate dose, taking medications on time, the ability to get on medications and take medication without help.
7. Precautions that patients should practice to prevent transmission of disease: (8 statements) related to; sharing personal toileting items, notifying the doctor and nurse about HCV infection, commitment regarding sexual intercourse, avoid any folk medication practices, refusing blood or organ donation , cover any open wound with sterile dressing to prevent spread of infection.
8. Social interactions: (4 statements) related to; participate in family and friends activities, interest with other's problems, fun and sense of humor with family and visiting family and relatives.

Patient's self-care practices were scored on 3 point Likert scale (2=always, 1=sometimes and 0=never). Total score was calculated then converted to percentage. Patients' self-care practices were calculated as follows; < 50% was considered poor self-care practices, 50% < 75% moderate self-care practices and 75% < 100% was considered good self-care knowledge.

Method

1. Permission to carry out the study was obtained from the director of the chosen setting after explaining the purpose of the study.
2. The study tools were developed by the researcher after reviewing the relevant related literature, and it was translated into Arabic.
3. The tools were tested for content validity by five experts in the field of Medical- Surgical Nursing for completeness and clarity of items.
4. Reliability of tools was done using Cronbach Alpha Test. The tools of the study were applied on 30 patients. Reliability coefficient for tool II was 0.924 and for tool III was 0.915.
5. A pilot study was carried out on 30 patients with viral hepatitis C to test the feasibility and the applicability of the tools and to identify the difficulties that may be faced during the application of the tools. Those patients were excluded from the sample.
6. Data collection was started, and continued for a period of 4 months from the beginning of May to the end of August 2016. Every patient was interviewed individually in the waiting room by the researcher using tools I, II and tool III to collect the necessary data related to patient's socio-demographic data, patients knowledge, and self-care practices. Each interview lasted about 30 minutes.

Ethical considerations:

- Patient's consent for participation was obtained to carry out the study and each patient was informed about the purpose of the study.
- Patient's written consent was obtained after explanation of the study aim. Confidentiality and privacy were ascertained. Participant in the research was volunteered. The right to withdraw from the study was confirmed.

Statistical Analysis

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp (25) Qualitative data were described using number and percent. Quantitative data were described using mean, standard deviation. Significance of the obtained results was judged at the 5% level.

Results

Table (1) shows the distribution of studied patients with hepatitis C virus according to socio-demographic characteristics. In relation to age, it can be noticed that 43.8% of the studied patients were in the age group 41<51 years, most of the studied patients were married (80.3%), the highest percentage of them had insufficient income to fulfill daily requirements (63.5%).

Table (2) shows the distribution of studied patients with hepatitis C virus according to their clinical data. More than half of the studied patients had a family member infected with HCV (59.1%). Eighty three percent of them were taking medications for associated diseases, while more than half were taking medications regularly (59.0%). The results denoted that the majority of studied patients had previous hospitalization (86.5%).

Table (3) denotes the distribution of studied patients according to score and mean percent score of their total knowledge level. More than half of studied patient's had poor knowledge level (52.6%), with a mean±SD (12.5±5.4).

Table (4) illustrates the distribution of studied patients according to total mean percent score of self-care practices items related to HCV**.** This table shows that more than half of the studied patients (51.5%) had moderate total self- care practices level related to HCV.

Table (5) conveys Multivariate analysis logistic regression for factors affecting self care practices. This table revealed that, there were four factors together statistically significant influence patients self care practices including educational level, age, income and residence ($P \leq 0.05$).

Discussion

Hepatitis C viral infection is one of the most contagious diseases that have great social and economic impact which may touch the future of the young generation and hinder the community[2].

Hepatitis C virus (HCV) infection is associated with multiple factors affecting self care practices. Therefore, the aim of the study was to identify factors influencing self care practices among patients with chronic HCV[18].

Discussion of the findings in the present study covers three main parts. The first part, deals with socio-demographic characteristics and clinical data. The second part deals with patient's knowledge about HCV infection and self care practices related to HCV, and the third part deals with relation between patient's knowledge and self care practices related socio-demographic characteristics & clinical data of HCV patients as well as between HCV patient's knowledge and their self care practices.

The present study revealed that more than one third of patients were in the age group of 41-50 years. This finding agrees with Branndt (2010)[27] and Danilova et al. (2011)[28]. They illustrated that the prevalence rate of HCV is higher in old persons than in younger one.

As regards to sex, the findings of present study showed that more than half of the participated patients were males. This result was in the same line with Ibrahim and Madian (2011)[29]. They illustrated that most of the studied patients were males. On the other hand, this result contradicts Youssef et al. (2017)[30], they found that females were more exposed than males to hepatitis C.

In relation to educational level, the present study findings revealed that illiterate patients formed the greatest proportion of the sample. This finding is supported by Mohamed et al. (2013)[31], who found an association between illiteracy and many false traditional practices and unhealthy behaviors associated with increased risk of HCV infection.

Concerning occupation, it was observed that housewives represented the highest percentage of the sample. This result was in harmony with Abo-Elmataty (2014)[32] who found that, the majority of the female participated patients were housewives. On the other hand this finding was contradicted with Porter (2011)[33], and Alavi and Hajiani (2011)[34]. They stated that most of the studied patients had professional hazards.

Related to the marital status, the results of the present study clarified that, approximately more than half of participants' patients were married. This finding may be related to many variables such as being unaware of methods of infection with HCV or sex that involves blood as during menstruation[35]. This finding was in agreement with Benova et al. (2015)[36], they found that marriage is a risk factor for HCV sero-positively.

Regarding family income, the present study finding revealed that the majority of patients family income who insufficient. This finding was matched with Jayasekera et al. (2014)[37] who illustrated that the majority of HCV positive patients had low income or low socioeconomic status. However, Suthar and Harries et al. (2015)[38] mentioned that people in low and middle income countries remain without access to information about disease prevention, diagnostic producers, care and treatment.

As for residence, the results found that the highest percentage of participated patients were from rural areas. This result of the present study was in line with Amer et al. (2015)[39] who reported that most of their sample was from rural areas.

In relation to family and medical history, the findings of the present study showed that more than half of participation patients had family history of HCV. This finding was also supported by El-Berdan (2014)[40], he found that more than half of HCV patients had positive family history of hepatitis C.

Concerning patient's past medical history; the majority of the studied patients discovered their disease accidentally. This finding was explained by Branndt (2010)[27] and Ibrahim & Madian (2011)[29]. In their study they found that most of patients with acute and chronic hepatitis C infection were asymptomatic. In contrast to this finding; McHutchision et al. (2010)[41], found that more than one–fourth of studied HCV patients discovered their disease when they complained from some symptoms.

Regarding patient's knowledge about HCV, the current study revealed that, the most of the studied patients had incomplete knowledge about definition, risk factors, mode of transmission, laboratory investigations and treatment of HCV. These findings were supported by Jean et al. (2010)[42], and Proeschold-Bell et al. (2011)[43] they found that, the majority of patients did not know risk factors, mode of transmission and treatment of HCV.

Concerning exercise and daily physical activities, the study findings revealed that, most of studied patients sometimes had self-care practices. This may be related to fatigue, weakness, and neuropsychiatric (depression) side effects associated with interferon therapy. These findings are supported by Seaward (2009)[44] who stated

that the majority of patients feel tired ,did not accomplish heavy activity. In contrast to these findings, Stoller et al. (2009)[45] reported that the majority of patients after diagnosis of HCV exercised daily (walking, swimming, yoga) due to their benefits on liver function, and improving immunity.

In relation to rest and sleep, the results of the present study illustrated that, most of studied patients sometimes had decrease sleeping during night and they expressed their inability to sleep well. This finding was in agreement with Highleyman (2010)[46], and Kallman et al. (2010)[47] who mentioned that up to sixty percent of patients with chronic hepatitis C experience sleep problems.

In relation to nutrition, the study revealed that most of studied patients sometimes adherence with prescribed diet, following special diet to increase immunity and resist virus. This result may be related to specific Egyptian traditions. Moreover, it may be due to lack of knowledge about hazards of this food negative effect on patients' response to HCV therapy and accelerated complications of HCV. This finding agreed with Sabry (2009)[48], who found that, the majority of studied patients had unbalanced diet as well as unhealthy dietary habits. On the other hand, this finding was contradicted with Stoller et al. (2009)[45] who found that the majority of patients avoided unhealthy food but not eat allowed food.

Additionally, the study revealed that, most of the studied patients, always avoid drinking alcohol and any drugs and tranquilizers without doctors order. This result is confirmed by the study carried by Sallam (2009)[49], who found that the majority of HCV patients did not drink alcohol.

Concerning personal hygiene, the findings of the present study revealed that most of studied patients always had self - care practices about taking bath sometimes performing self-care practices related to skin cleaning to reduce itching, oral hygiene and dental care and using moisturizers for skin. This finding was contraindicated with Zuberi (2010)[50] who found that the most of HCV patients had a number of bathing, tooth brushing, and their general looking and grooming clothes became worn due to lack of interest, side effects of medication and lack of time.

Regarding adherence with medications, the present results showed that the majority of HCV patients reported that, they always had self-care about taking the prescribed medications, avoided medication in the event of side effects, took the appropriate dose, in appropriate time, had ability to get medications and take medication without help. This finding was explained by Rashed et al. (2009)[51] who found that, most of HCV patients adherence with treatment as they hoped to get completely cured.

As regards precautions that the patients should be practicing to prevent the transmission of disease, the present results noted that, most of the studied patients always had self-care practices about not allowing others to use personal toileting items, commitment regarding sexual intercourse. This finding was contraindicated with Stoller et al. (2009)[45], they concluded that, the lowest percentage of patients followed health behaviors to prevent transmission of HCV to others.

As for total self-care practices in the present study, the highest percentage of studied patients had poor self-care practices related to exercise & daily physical activities and moderate self-care practices related to rest & sleep, nutrition, social interactions and total self-care practices. The only good self care practices were related to avoiding alcohol intake, precaution that the patients should practice to prevent the transmission of disease and adherence with medications. This may be due to lack of patients knowledge which helps them in performing good self- care practices.

In relation to social interactions; the study revealed that most of the studied patients sometimes had self-care practices

about, participating with family and friends in activities, interested with others problem. This finding was in agreement with Khuwaja et al. (2002)[52] who stated that, chronic HCV may cause a sense of stigmatization in the patients leading to feeling of shame and rejection.

As regards the relation between total patient's knowledge level about HCV and socio-demographic characteristics of studied patients, a statistically significant relation was found between patient's total knowledge level and patients age and patient educational level where the highest percentage of poor total knowledge level were found among older patients and illiterate patients. This finding is supported by Younossi et al. (2010)[53] who stated that there was a significant relation between patient's knowledge and their level of education and age.

In this study, there were statistically significant relations between total patient's knowledge levels and patients work and income. Poor level of knowledge was found among manual works and patients who had insufficient income. This finding is supported by Tamayo et al. (2016)[54] who mentioned that people in low and middle income countries remain without access to information about disease prevention, diagnostics procedures, care and treatment of HCV.

Moreover, the results showed no statistically significant difference between total patient's knowledge levels and patients' sex, marital status and residence. This finding is congruent with the findings of Khuwaja et al. (2002)[52] who found that there were no significant differences between the patient's knowledge related to HCV and their sex, area of residence, and physical condition.

As regards the relation between total self-care practices and socio-demographic characteristics of the studied patients, the present study revealed a statistically significant relation between total patient's self-care practices and patients age and level of education where moderate self-care practices about HCV was observed among older and low educated patients. This finding is contraindicated with Sallam (2009)[49] who pointed no statistically significant relation between age & level of education and self-care practices among HCV patients.

Moreover, the results showed statistically significant relations between total patient's self- care practices and patient's sex and residence. This study showed that females patients in rural areas had moderate self-care practices, while males had good self-care practices. This result disagreed with Garieb (2009)[55], he found that there was no significant difference between males and females who live in rural or urban in relation to their total self- care practices.

Additionally, the results revealed that there was a statistically significant relation between total patient's self-care practices and patient's work and marital status. Moderate self -care practices about HCV was found among housewives married patients. This result disagreed with Sallam (2009)[49] who found that the marital status didn't have effect on patients self- care practices among HCV patients. This finding may be due to low monthly income that didn't give them the opportunity to seek medical care which affected their self-care practices.

Also, there was statistically significant relation between total patient's self care practices and patient's income. Moderate self -care practices about HCV was found among patients with insufficient income. This result come in line with Sallam (2009)[49] who found that insufficient income among patients didn't give them the opportunity to seek medical care and cover the needs of their family which affected their self-care practices.

As regards the relation between total patient's self-care practices and clinical data, the present results verified statistically significant relations between total patient's self-care practices and onset and duration of disease where moderate self-care practices

about HCV was found among patients who had symptoms and suffered from the disease since 4 years. These findings may be due to patients with chronic hepatitis C have symptoms which have a huge impact on patient's self care[18].

Another statistically significant relation was found between total patient's self -care practices and patients who had chronic associated disease and were taking medications related to the chronic associated disease**.** Moderate self-care practices about HCV was found among patients who had chronic diseases and took medications. This may be due to the negative impact of chronic disease[18].

As regards the relation between total self-care practices of the studied patients and total knowledge level, The results showed that, the highest percentages of poor knowledge were associated with moderate self-care while, the highest percentage of very good knowledge levels were associated with good self-care practices.

Finally the present study findings verified that there were four factors together statistically significant influence patients self care practices including educational level, age, income and residence which requires more focusing and caring effort to provide optimal self- care practices[17], this help HCV patients to comply with self -care practices in order to improve their quality of life and reduce the present and expected burden of hepatitis C virus.

Conclusion

Based on the findings of the present study, it can be concluded that, more than half of the studied patients with HCV had poor total knowledge and moderate total self-care practices. In addition, the majority of the studied patients had poor self-care practices related to exercise and daily physical activities and more than one-third of them had moderate self-care practices related social interactions and rest & sleep. Moreover, there were four factors together statistically significant influence patients self care practices including educational level, age, income and residence.

Recommendations

Based upon the findings of the current study, and in order to promote self care practices among patients with hepatitis C virus the following items are recommended:

1. Development of health education programs for HCV patients and their families to teach them how to apply self -care practices and how to deal with factors affecting patients self -care practices to avoid subsequent complications of HCV.
2. Inform HCV patients and their families about how to avoid HCV transmission of infection to others.
3. Develop manual guideline to nurses working with HCV patients about recent HCV self -care practices.
4. Raise the community awareness regarding HCV specific risk factors and behaviors, mode of transmission and preventive measures through mass media.

Table (1): Distribution of the studied patients with hepatitis C virus in relation to their socio-demographic characteristics (N=340)

Socio-demographic data	No	%
Age (years)		
21 < 31	60	17.6%
31 < 41	53	15.6%
41 < 51	149	43.8%
51-60	78	22.9%
Sex		
Male	180	52.9%
Female	160	47.1%
Educational level		
Illiterate	139	40.9%
Read & write	23	6.8%
Primary	19	5.6%
Preparatory	15	4.4%
Diploma	79	23.2%
Secondary	25	7.4%
University	40	11.8%
Work		
Manual	104	30.6%
Professional	86	25.3%
Housewife	150	44.1 %
Marital status		
Single	20	5.9%
Married	273	80.3%
Divorced	12	3.5%
Widow	35	10.3%
Income from patients point of view		
Insufficient	216	63.5%
Sufficient	116	34.1%
More than sufficient	8	2.4%
Residence		
Rural	213	62.6%
Urban	127	37.4%

Table (2): Distribution of studied patients with hepatitis C virus according to their clinical data (N=340)

Clinical data	No	%
Family history related to HCV		
Yes	201	59.1%
No	139	40.9%
Patient clinical data:		
Clinical onset of disease		
Appearance of signs& symptoms	36	10.6%
Accidentally	271	79.7%
When doing laboratory investigations for HCV.	33	9.7%
Duration of disease (years)		
< 1 year	61	17.9%
1< 2	66	19.4%
2< 3	84	24.7%
3< 4	68	20.0%
4< 5	45	13.2%
5+	16	4.7%
History of associated diseases		
Yes	94	27.6%
No	246	72.4%
If yes, what are these diseases (n = 94)		
Cardiac diseases	1	1.1%
Renal diseases	6	6.4%
Diabetes mellitus	36	38.3%
Respiratory diseases	6	6.4%
Hypertension	38	40.4%
Arthritis	47	50.0%
Take medications for these associated diseases (n = 94)		
Yes	78	83%
No	16	17%
Take medications regularly (n = 78)		
Yes	46	59.0%
No	32	41.0%
Previous hospitalization		
Yes	294	86.5%
No	46	13.5%
What is the reason (n = 294)		
Blood transfusion	41	13.9%
Operation	220	74.8%
Treat schistosomiasis	89	30.3%
Visit the dentist	240	81.6%

Table (3): Distribution of studied patients according to score and mean percent score of their total knowledge level (N=340)

Total knowledge level	No	%
Poor	179	52.6%
Fair	45	13.2%
Good	25	7.4%
Very good	91	26.8%
Min. score – Max. score	0 - 26	
Range	5-23	
Mean ± SD	12.5 ± 5.4	

**: Statistically significant at P < 0.05*
- Poor < 50%
- Fair 50 % < 65%
- Good 65% < 75%
- Very good > 75%

Table (4): Distribution of studied patients according to total mean percent score of self- care practices items related to HCV (N=340)

Self care practice items	Poor		Moderate		Good		Mean ± SD
	No	%	No	%	No	%	
Exercise and daily physical activity	159	46.8%	80	23.5%	101	29.7%	7.7 ± 3.8
Rest and sleep	151	44.5%	163	47.9%	26	7.6%	3.5± 1.3
Nutrition	0	0.0%	204	60.0%	136	40.0%	5.6 ± 1.9
Alcohol intake	0	0.0%	0	0.0%	340	100.0%	4.0 ± 0.0
Personal hygiene	35	10.3%	137	40.3%	168	49.4%	6.0 ± 1.9
Social interactions	24	7.1%	163	47.9%	153	45.0%	7.4 ± 2.5
Adherence with medications	27	7.9%	107	31.5%	206	60.6%	9.5 ± 3.0
Precaution to prevent the transmission of the disease	2	.6%	39	11.5%	299	87.9%	14.1 ± 2.1
Total	2	.6%	175	51.5%	163	47.9%	57.6 ± 13.2

Table (5): Multivariate analysis logistic regression for factors affecting self care practices

Factors affecting self-care practices	Sig.	OR	95% CI	
			LL	UL
Education level	<0.001*	0.394	0.313	0.495
Age	0.003*	2.344	1.347	4.080
Income	0.016*	0.307	0.118	0.800
Residence	0.029*	0.381	0.160	0.906
Duration of disease (years)	0.067	1.356	0.979	1.878
Clinical onset of disease	0.137	0.421	0.135	1.317
Sex	0.196	3.014	0.566	16.059
Marital status	0.282	1.527	0.706	3.305
Work	0.349	0.641	0.253	1.624
taking medications for associated diseases	0.434	0.661	0.235	1.865
History of associated diseases	0.870	0.928	0.379	2.273

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