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Health Related Quality of Life Educational Interventions: Effect on Chronic Hepatitis C Patients'

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Original Research Article

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Abstract: Hepatitis C Virus (HCV) educational interventions are one option for helping these patients adhere to treatment recommendations while improving their quality of life. The aim of this study is to determine the effect of health-related quality of life educational interventions on Chronic Hepatitis C Patients'. A quasi-experimental study design. This study was conducted at the liver outpatient clinic of Fayoum Medical University Hospital. A purposive sample of hundred fifty patients was included. Tools: 1) Patients' needs assessment questionnaire. 2) Health-Related Quality of life of Chronic liver disease questionnaire (CLDQ). The study shows that there was highly statistically significant difference for HRQOL domains pre/post educational intervention for the following abdominal symptoms, fatigue, systemic symptoms, emotional function, and worry. In opposites there is no statistically significant difference for activity domain pre/post intervention. After the implementation of the program, the study group showed a positive effect of education intervention on HRQOL of HCV patients. It is recommended to generalize the designed educational intervention in this study for all HCV patients at MOH hospitals.

Keywords: Health-Related Quality of Life, Educational Interventions, Chronic Hepatitis C Patients

INTRODUCTION

Chronic hepatitis caused by the hepatitis C virus (HCV) is widespread throughout the world and affects approximately 180 million people. Unlike other viral forms of hepatitis, the acute phase is rare. The chronic form, presenting scarce and nonspecific symptoms, makes clinical diagnosis of the disease difficult. The infection lasts for decades and the patient may or may not be aware of its presence. A further aggravating factor is the prolonged antiviral treatment, which exposes the patient to various possible side effects. Furthermore, the overall 50% efficacy of the treatment still falls short of expectations [1].

Chronic HCV-related liver disease is the main indication for referral for liver transplant, which is expected to increase over the next 20 years. So, a growing number of people can be expected to live with chronic HCV-related hepatitis for many years of their lives [2].

Quality of Life (QOL) has become an increasingly attractive subject in recent decades, drawing attention from both enthusiasts and researchers [3]. Health-related quality of life (HRQOL) is an important health indicator in medical outcome research and clinical practice [4]. Health related quality of life (HRQL) is a broad concept which can be defined as the patient's subjective perception of the impact of his disease and its treatment on his daily life, physical, psychological, social functioning & well-being [5]. Health-related QOL is a quality of life term that takes into account the impact an illness has on an individual's QOL [6]. It emerges as a tool for measuring outcome from the patient's viewpoint, incorporating social, psychological, physiological and physical functioning [7].

Previous studies have reported a consistent and marked reduction in health-related quality of life (HRQOL) among CHC patients as compared with healthy adults' sample, particularly in physical health–related domains [8]. Infection with HCV impairs health-related quality of life even in the absence of severe liver pathology [9].

HCV infection reduces the HRQOL of most chronically infected patients. Fatigue, depression and cognitive impairment are among the most common complaints of patients, and all of these symptoms have the potential to impair patients' ability to function at work or in society. Chronic hepatitis C virus is one of the medical problems that substantially reduce the quality of life of its victims. Because of the chronic and irreversible nature of the disease, it needs self- management programs to be developed according to client's needs and to maintain their independence and sense of well-being [10].

HCV educational intervention is one option for helping these patients adhere to treatment recommendations while improving their quality of life. Patient self-management programs augment traditional information-oriented patient education with problem-solving skills and cognitive-behavioral techniques that enable patients to manage chronic illness and their lives as a whole [11]. Nurses as a counselor should provide counseling, guidance, and have the responsibilities to teach health-related quality of life among patients with Chronic Hepatitis C Patients as it offers a great challenge in today’s world. Nurses should be fitted with the appropriate sciences, knowledge and skills that were necessary to help people adjust to the daily problems & related difficulties [12].

Egypt has the largest epidemic of hepatitis C virus (HCV) in the world. The recently released Egyptian Demographic Health Survey (EDHS) tested a representative sample of the entire country for HCV antibody Significance of the study. The overall prevalence (percentage of people) positive for antibody to HCV was 14.7% about 11,466,000 persons [13].

SIGNIFICANCE OF THE STUDY

Chronic hepatitis C is the second-commonest cause of death in Egypt, after heart disease. Deaths from liver disease were peak in 2010-2012 [14]. For HCV, treatment is not indicated in all cases. This is due to several factors, including the very high cost of treatment (upwards of 25,000 LE for HCV), its long duration up to a year for HCV patients and its significant and unpleasant side effects [15].

In addition, Groessl *et al*., [16] asked that there are needs for programs that can help patients improve HRQOL. Also Chronic disease self-management interventions have also impacted other outcomes such as reduced health care utilization and increased health behaviors. Despite the need for such approaches, there has been little or no research conducted with self-management quality of life educational intervention for patients with hepatitis C.

AIM OF THE STUDY

The study was conducted to determine the effect of health related quality of life educational interventions among Chronic Hepatitis C Patients**.**

RESEARCH HYPOTHESIS

The educational interventions will provide a positive effect on health related quality of life of among Chronic Hepatitis C Patients.

SUBJECTS AND METHODS

Research design: A quasi-experimental study design was utilized to meet the aim of this study.

Setting: This study was conducted at liver outpatient clinic of Fayoum Medical University Hospital.

Subjects: Chronic Hepatitis C patients attending liver outpatient clinic of Fayoum Medical University Hospital who accepted to participate in the study after being oriented about the purpose of it.

Sample type: A purposive sample

Sample size: hundred fifty patients were included.

Inclusion criteria: adult patients with chronic hepatitis C virus, both sexes, with age between 18 years to 60 years, and accepted to participate in the study.

Exclusion criteria: patients with chronic illness such as diabetes mellitus, ischemic heart disease, chronic obstructive pulmonary disease, patients with chronic hepatitis B, cirrhotic patients & patients under antiviral therapy, those experiencing visual audible problems, or verbal communication difficulties; and people with diagnosed mental disability.

Tools of data collection

Interview questionnaire sheet was developed by the researchers based on the literatures review consisted of:

- Demographic Characteristics and medical data of the patients was involved in the study (the age, sex, level of education, marital status, and number of children, occupation & frequency of hospitalizations, the duration and severity of the disease).
- Patients' needs assessment questionnaire developed by the researchers in an Arabic language according to the current literature reviews. It includes Assessment of patients' physical, educational, social, spiritual and psychological needs.

Description of scale: Linear score related to patients need assessment which consists of (52) fifty-two questions in Arabic language. Patients need assessment is based on five realms classified as the following: physical needs (34 items), educational needs (5 items), psychological needs (4 items), social needs (4 items) and spiritual needs (4). Each patient wanted to respond to the questions as follow:

- "Yes" (1) →→need.
- "No" (0) →→not need.

Note satisfactory level ≥ 70% Equal 28.7

Health Related Quality of life of Chronic liver disease questionnaire (CLDQ) was adopted from Younossi et al., 2001 [17]. CLDQ is the first liver specific instrument for measuring HRQOL in chronic liver disease (CLD). CLDQ consists of 28 items measuring six subscales and each subscale had items. Each item is rated on a 7-point as follow, All the time (1), most of the time (2), quite Often (3), sometimes (4), a short time (5), hardly (6) and never (7). Scores for each of the six domains are calculated by the mean of the item scores within the subscale. A higher score indicates better Health-Related Quality of Life (HRQOL).

NB: Satisfactory level ≥70%equal 144.9

Human right and ethical considerations

The researchers approached patients individually at liver outpatient clinic of Fayoum Medical University Hospital and explaining the purpose of the study. Patients who were willing to participate were included in the study after obtaining their oral consent. Confidentiality of all information was secured.

Validity and reliability of the tools

Validity of tools was done by 7 experts from medical and nursing field to check the relevancy, clarity, comprehensiveness, and applicability of the questions. According to their opinions, minor modifications were done and the final form was developed. The reliability of the tools was tested using the internal consistency method. It was found that Cronbach's alpha reliability coefficient was 0.85.

Pilot Study

The Arabic versions of the tools were piloted on fifteen patients to test the feasibility of conduction and clarity of tools. Patients included in the study were excluded in the study sample.

Planning Phase

Field Work

- Data collection was started and completed within 6 months, from May 2017 and end in October 2017.
- Purpose of the study was simply explained to patients who agree to participate in the study prior to any data collection.
- The study tools were filled in and completed by the subjects on 2 stages (pre & post implementation of the health related quality of life educational interventions).
- The researcher was available at the liver outpatient clinic of Fayoum Medical University Hospital 3 days/week at morning shift to collect data from the studied patients.
- Filling in the tools was done according to the patients' understanding and health condition.

Implementation phase

The collection of data is done through four phases

Phase-1: Data collected took a period of one month by the researcher after distribution of the tools for each patient individually, collection of data began by the health needs assessment questionnaire, and it was distributed to be completed by the patient within (10-15 min), and then collected. After that, the Chronic liver disease questionnaire (CLDQ) given to the patient to be answered within about (10-20 min).

Phase-2: Based on the results obtained from patient's needs questionnaire and analysis of the collected data, as well as literature review and expertise revision the self-management program was developed by the researchers. The total number of sessions were (5) sessions.

Phase-3: The program took a period of five months including five weeks for pretest, ten weeks during program implementation period, five weeks for posttest after implementation of the program; the program was implemented for patients with chronic hepatitis C. The 150 hepatitis C patients in the intervention were conducted by telephone to attend the intervention program. They were divided into five groups randomly by using the blind paper picking into group who receiving intervention. The number of patients in group was 30. Each group received the same learning content using the same teaching strategies; lecture, discussion, teaching, and correction on the spot, real objects and hand out, through the organized specific schedule.

The time allotted for achieving program objectives was 8 hours for each group. The program was implemented in a form of a separate session; the time for each session took up 30 to 40 minutes. Each session included the new topics with general and specific objectives, involving the attractive media and methods of reaching. Motivation and reinforcement technique as praise and recognition during program session were used to enhance learning. Before the beginning of the first session on orientation phase to the program and its purposes took place and the patients were informed about the time and place of the session.

Phase-4 (Post-intervention phase): After the final session, the same tools were distributed again for each patient to be answered to evaluate the effect of the educational intervention program on Health-Related Quality of Life (HRQOL) for hepatitis C patients.

Administrative Design

An official letter was issued from the faculty of Nursing, Fayoum University to the director of the liver outpatient clinic of Fayoum Medical University Hospital, explaining the purpose of the study and requesting the permission for data collection from the study group.

Statistical Design: To achieve that, the data collected were analyzed by using tests of significance of frequency and percentage distributions and changes occurs were obtained for the variables. The statistical analysis was performed using the statistical package for social science (SPSS) program, version 12.o for windows Data Editor, and Microsoft Excel 2010. The collected data were organized, categorized, tabulated and statistically analyzed to evaluate the difference between pre and post program regards the various parameters. The statistical significance and associations were assessed using, the arithmetic mean **(**X^{-}**),** the standard deviation **(**SD**)** and the chi-square test **(**X^2).

Comparison was done between the total score of the pre-test and post-test of the different items obtained by patients with chronic HCV using t-test, chi-square (X^2) and P value were used to determine the relationship between patients' need and socio-demographic characteristics

Significance of the results

No significant (NS)	if $P > 0.05$
Significant (S)	if $P < 0.05$
High significant (HS)	if $P < 0.001$

RESULTS

Table-1 as regards demographic characteristic of the studied sample; this table shows that the mean age of the studied sample was 53.2 years. Concerning marital status, the majority (76%) of cases were married. About half (54.7%) of patients with no work. Concerning to duration of illness, 56% of studied cases affected by virus for less than three years. Also, about 70.7% of cases were Child A and 29.3% of cases were Child B. While, about one third (33.3%) of cases infected by virus during invasive hospital procedure.

Fig-1 this figure shows that the majority of studied patients had unsatisfactory physical needs (96.0%) and educational needs (90.7%). Also three fifth of studied patients had spiritual needs (61.3%) and more than half of patients had social needs (52.0%). In relation to ranges of needs.

Table-2 this table shows that there was highly statistically significant relationship between patient’s educational level and patients unsatisfactory needs at <0.001. Also there was statistically significant relationship between patient’s degree of illness and work with patient’s unsatisfactory needs at<0.05.

Fig-2 This figure shows that the majority of studied sample had unsatisfactory level for all HRQOL items as the following; activity (100%), worry (100%), fatigue (93.3%), systematic symptoms (89.3%), abdominal symptoms (85.3%) and emotional functions (85.3%) pre intervention and the total unsatisfactory level was 100%.

Fig-3 This figure shows that the majority of studied patients had satisfaction post intervention of the following; worry (89.3%), systematic symptoms (78.7%), emotional functions (73.3%) and fatigue (53.3%) in opposites only (9.3%) of patients had satisfaction post-intervention in total activity and the total satisfaction was 66.7%.

Table-3 This table shows that there was highly statistically significant difference for HRQOL domains pre/post intervention for the following abdominal symptoms, fatigue, systemic symptoms, emotional function and worry at <0.001. In opposites there is no statistically significant difference for activity domain pre/post intervention at > 0.05.

Table-4 The table illustrates that there is a significant increase in all items of Health-Related Quality of Life (HRQOL) after the intervention than before. The results revealed that there is significantly increased in total abdominal symptoms (p = 0.000) and systematic symptoms (p = 0.000) and their items in terms of (Abdominal pain, discomfort, bloating) and (Bodily ache shortness of breath, muscle cramp, dry mouth, and itching). Concerning fatigue, there is significant increasing in its items, while there is no significant in activity. Regarding emotional function and worry there is significant increasing in emotional function (p = 0.000) and worry (p = 0.000).

Table-1: Demographic characteristics and medical data for Patients with HCV (N: 150)

Items	No	%
Age		
< 45	12	8.0%
45 +	138	92%
(Mean ± SD) 53.2 ± 6.6		
Gender		
Male	76	50.7%
Female	74	49.3%
Marital Status		
Married	114	76.0%
Divorced	6	4.0%
Widow	30	20.0%
Education		
Illiterate	66	44.0%
Read & write	22	14.7%
Diploma or high	62	41.3%
No. of sons		
< 3	94	62.7%
3 +	56	37.3%
Working Status		
Work	68	45.3%
Not work	82	54.7%
Duration of illness		
< 3 years	84	56.0%
3 – 6	22	14.7%
6 +	44	29.3%
Number of hospital admission		
Non	34	22.7%
One time	26	17.3%
More one time	90	60.0%
Degree of illness		
Child A	106	70.7%
Child B	44	29.3%
Causes of illness		
Blood transfusion	28	18.7%
Dental care	40	26.7%
Invasive hospital Procedures	50	33.3
Parenteral therapy of schistosomiasis	20	13.3%
Unknown	12	8.0%

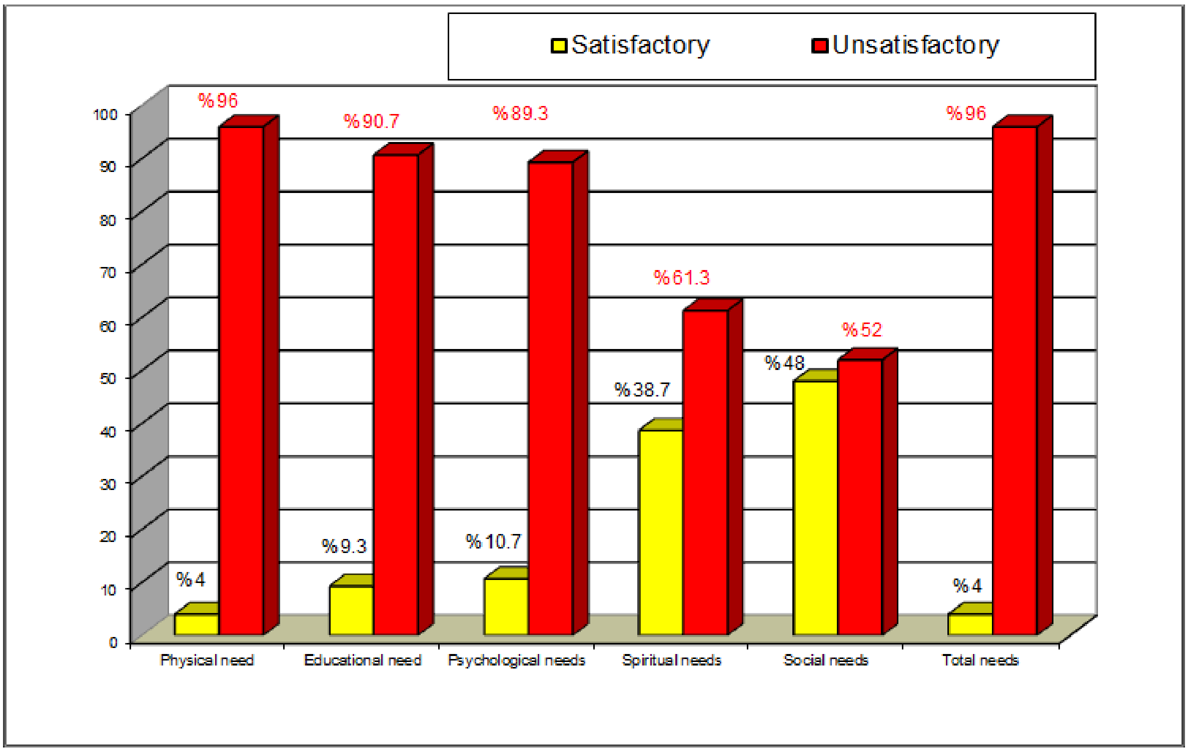

Fig-4: Satisfactory and unsatisfactory needs for patients with CHC. (N: 150)

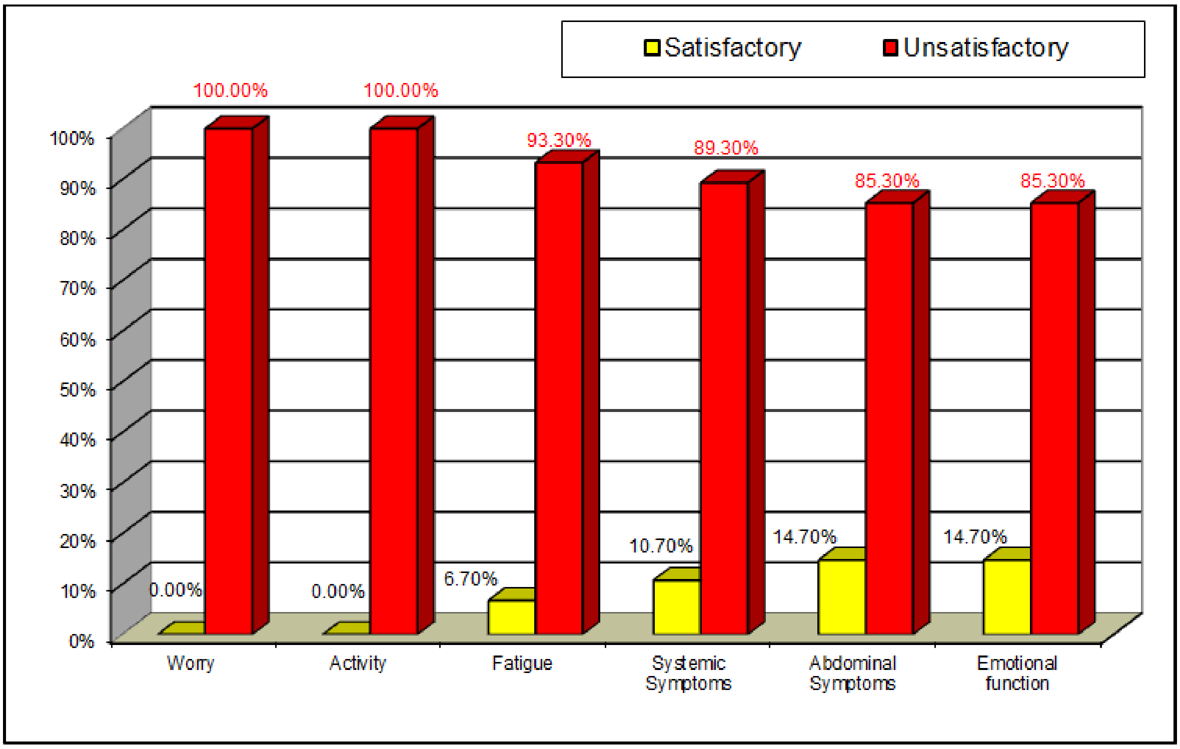

Fig-5: Total Satisfactory and Unsatisfactory HRQOL pre intervention. (N: 150)

Table-2: Relation between patients' unsatisfactory needs and demographic characteristics. (N: 150)

Items	Unsatisfactory		X^2 test		
	NO	%	X^2 test	P	Sig
Age					
< 45	12	8.0%	0.3	> 0.05	NS
45 +	138	92.0%			
Gender					
Male	76	50.7%	0.3	> 0.05	NS
Female	74	49.3%			
Marital Status					
Married	114	76.0%	0.9	> 0.05	NS
Divorced	6	4.0%			
Widow	30	20.0%			
Educational level					
Illiterate	66	44.0%	20.3	< 0.001	HS
Read & write	22	14.7%			
Diploma or high	62	41.3%			
No. of suns					
< 3	94	62.7%	0.02	> 0.05	NS
3 +	56	37.3%			
Working Status					
Work	68	45.3%	3.8	< 0.05	S
Not work	82	54.7%			
Duration of illness					
< 3 years	84	56.0%	1.1	> 0.05	NS
3 : 6	22	14.7%			
6 +	44	29.3%			
Frequency of Hospitalizations					
Non	34	22.7%	0.7	> 0.05	NS
One time	26	17.3%			
More one time	90	60%			
Degree of illness					
Child A	106	70.7%	4.2	< 0.05	S
Child B	44	29.3%			
Moods of transmission					
Blood transfusion	28	18.7%	1.2	> 0.05	NS
Dental care	40	26.7%			
Invasive hospital procedures	50	33.3%			
Parenteral therapy of schistosomiasis	20	13.3%			
Unknown	12	8.0%			

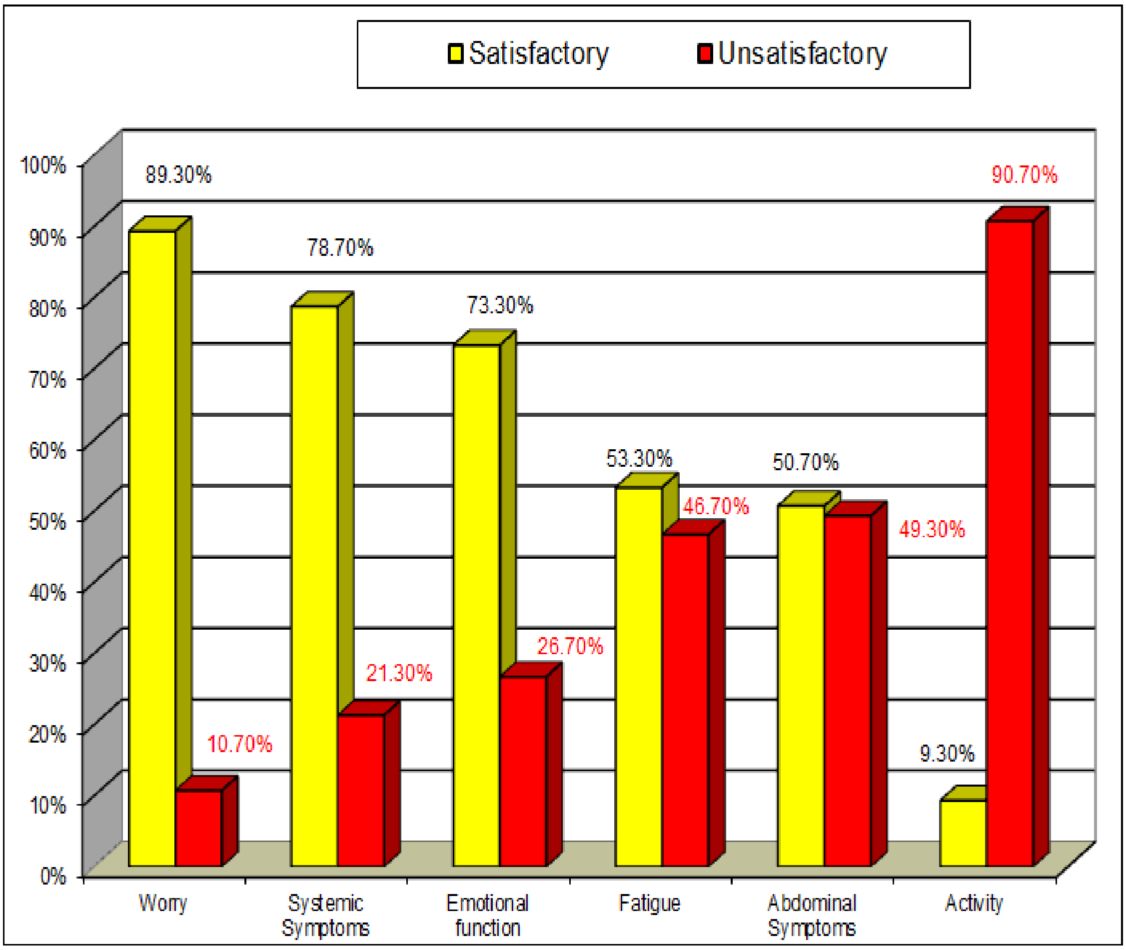

Fig-6: Total Satisfactory and Unsatisfactory HRQOL Post Intervention (N: 150)

Table-3: Total Satisfactory and Unsatisfactory HRQOL pre/ post Intervention (N: 150)

Items	**Pre**				**Post**				**X^2 test**		
	Satisfactory		Unsatisfactory		Satisfactory		Unsatisfactory				
	NO	%	NO	%	NO	%	NO	%	**X^2**	**P**	**Sig**
Abdominal Symptoms	22	14.7%	128	85.3%	76	50.7%	74	49.3%	22.1	< 0.001	HS
Worry	0	0.0%	150	100.0%	134	89.3%	16	10.7%	28.5	< 0.001	HS
Activity	0	0.0%	150	100.0%	14	9.3%	136	90.7%	7.3	> 0.05	NS
Fatigue	10	6.7%	140	93.3%	80	53.3%	70	46.7%	38.8	< 0.001	HS
Systemic Symptoms	16	10.7%	134	89.3%	118	78.7%	32	21.3%	70.2	< 0.001	HS
Emotional function	22	14.7%	128	85.3%	110	73.3%	40	26.7%	52.4	< 0.001	HS
Total	0	0.0%	150	100.0%	100	66.7%	50	33.3%	23.1	< 0.001	HS

Table-4: comparison between study group regarding their Health Related Quality of Life (HRQOL) before and after the intervention program

Domains	All the time		most of the time		quite Often		sometimes		A short time		hardly		never		X^2 test		
	NO	%	NO	%	NO	%	N	%	NO	%	NO	%	NO	%	X	P	Sig
Total Abdominal Symptoms																	
Total pre	18	12%	22	14.7%	42	28%	28	18.6%	22	14.7%	6	4%	12	8%	22.1	< 0.001	H S
Total post	4	2.6%	18	12%	18	12%	34	22.7%	52	34.7%	18	12%	6	4%			
Total Fatigue																	
Total pre	18	12%	38	25.4%	38	25.4%	32	21.3%	12	8%	8	5.3%	4	2.6%	38.8	<0.001	H S
Total post	0	0.0%	6	4%	16	10.6%	30	20%	50	33.3%	36	24%	12	8%			
Systematic Symptoms																	
Total pre	18	12%	32	21.3%	30	20%	24	16%	20	13.3%	12	8%	14	9.3%	70.2	< .001	H S
Total post	2	1.3%	8	5.3%	14	9.3%	18	12%	46	30.6%	46	30.6%	16	10.6%			
Total Activity																	
Total pre	52	34.6%	44	29.3%	24	16%	2	13.3%	10	6.6%	0	0%	0	0%	7.3	>0.05	N S
Total post	24	16%	20	13.3%	16	10.6%	2	16%	38	25.3%	20	13.3%	8	5.3%			
Total Emotional function																	
Total pre	14	9.3%	40	26.6	30	20%	24	16%	24	16%	14	9.3%	4	2.6%	52.4	<0.001	H S
Total post	0	0	2	1.3%	6	4%	24	16%	54	36%	46	30.6%	18	12%			
Total worry																	
Total pre	32	21.3%	42	28%	28	18.6%	22	14.6%	10	6.6%	8	5.3%	8	5.3%	28.5	< 0.001	H S
Total post	20	13.3%	16	10.6%	20	13.3%	26	17.3%	30	20%	26	17.3%	12	8%			

DISCUSSION

The present study finding showed the highest percentages of physical needs were tiredness, muscle pain, joint pain, and loss of appetite, flatulence, dry mouth, itching and dry eye. Physical symptoms may be due to that majority of patients in this study their age more than 45 years. Increasing age leading to a long period of chronicity and worse physical signs.

These findings are similar to those of Ayman [18] who stressed that, the most common symptoms experienced by HCV patients include fatigue, anorexia, myalgia, arthralgia, irritability, and headaches. In the same way Swearing [19] reported that symptoms of HCV include fatigue, weakness, general malaise, abdominal pain, muscle and joint aches, itching and dryness of mucus membrane and loss of appetite. Also Hassoun [20] reported that Factors that were associated with physical symptoms included female gender, older age, presence of cirrhosis.

The present study finding showed that, the majority of patients with chronic hepatitis C not able to manage nutritional needs as change diet regimen, inability to control on diet and ignorance proper diet. This may be due to lack of nutritional counselor truly knowledgeable about nutritional needs of people living with HCV. These results were supported by Hassan [21] who reported that the great majority of the CHC patients gave a dissatisfied level of knowledge about healthy diet.

Regarding educational needs the majority of cases had no knowledge in the following items; what is viral hepatitis C, the effective ways to treat hepatitis C, the potential problems caused by the hepatitis C and modes of transmission. The present study may be attributed to two reasons; first, lack of health educational mass campaigns about the HCV and the way of living healthy with it. Secondary, it is obvious that, lower educational level in the studied sample (nearly half) may be associated with a weaker awareness of the seriousness of the disease and a worse ability of the infected patients to cope with the challenges of a chronic condition.

These results were also congruent with Hassan [21], who stated that the majority of studied sample with CHC got dissatisfied level of behavior regarding protection of others from acquiring HCV, general knowledge about HCV, modes of transmission, which factors makes further damage of liver and how to protect themselves from getting infected with HCV.

The present study revealed that the majority of the studied sample needs for educational intervention in relation to psychological need in the following items Lack adaptation, worries and lack of acceptance to diseases. This result was in accordance with Gutteling *et al*., [22], who reported that the mainly psychological aspects of patients with chronic hepatitis C was anxiety, illness understanding, worry about family situation, and fear of complications

As detected from this study results regarding assessing for the social need for HCV patients more than half of the sample had Interference of disease with a job and lost control of things. In opposites way, minor cases feel rejected by the others. The possible explanation may be due to highest percentages of studied patients had tiredness, muscle pain, joint pain that may effect on social needs. This result was in accordance with Spiegel *et al.*, [23] who reported that hepatitis can significantly affect social health even in absence of cirrhosis as CHC patients can't establish intimate relationships.

Regarding to spiritual needs more than three quarters of the studied sample needs for the following, anxiety about the future and loss hope in recovery. These results are in accordance to Abdo [24] who stated that HCV has been shown to be associated with many psychiatric disorders. These include depression and anxiety. These psychiatric symptoms have been shown to be associated with functional disability, and somatization in HCV patients

The present study revealed that there was a highly statistically significant relation among patient’s educational level regarding their needs (physical, psychological, social, spiritual, and educational needs). This result was in accordance with Ahmed [25], who reported that patient's education is a fundamental component of comprehensive clinical care and it is a necessary antecedent to behavior changes revealing that there is a positive correlation between educational level and patient's needs Schwarzinger *et al*., [8] stated that low educational level acted as a confounding factor because it was associated with HCV infection and it constantly limits access to health care and effect on patients' needs.

This study shows that there was statistically significant relation among patient’s degree of illness with needs of patients. This may be due to with advanced degree of illness the disease becomes more severe and patients deteriorate. This result was in accordance with Bonkovsky *et al.*, [26] who reported that this advanced disease status for patients with chronic HCV and presence of cirrhosis may come with more symptoms which would therefore potentially affect patients' needs scores. While Amodio *et al*., [27] contradicted with this result as they report that patients with chronic HCV have a significant reduction in their HRQoL that is not related to the severity of the liver disease

As regards relationship between patients' needs and socio-demographic characteristics showed that no statistically significant relation with age. In similar studies for Millera and Raddad [28] reported that age is negatively related to needs. Older age has been shown to be inversely associated with needs in patients with chronic HCV the older the individual, the lower needs score.

As detected from this study results regarding the relation between abdominal symptoms for patients with chronic hepatitis C regard the pre and post educational intervention there was highly statistically significant difference between total abdominal symptoms pre / post program. In similar study Hassan [21] who emphasized that as regard to hepatitis C patient's specific HRQOL, the program developed a positive effect on physical items.

The present study revealed that there was highly statistically significant difference between total fatigue pre/ post educational intervention. This finding in accordance with Groessl *et al*., [16] who finding that the HCV self- management intervention improved scores on the energy/vitality (Tired, Worn Out, Energy) subscale of the SF-36. Also Groessl *et al*., [11] reported that patients who attended the self-management workshop knew more about their disease and were better able to manage their condition, and they had more energy and vitality. Increased energy and vitality is important because fatigue is the most commonly reported symptom of chronic HCV infection.

Concerning total emotional function pre/post educational intervention, there was highly statistically significant difference between total emotional function pre/post programs. This might be due to personal communication between patients during educational intervention implementation. In similar study for Hassan [21] who stated that after implementation of the program, the experimental group showed significant improvement in psychological impact.

The study shows that there was highly statistically significant difference for HRQOL domains pre/post educational intervention for the following abdominal symptoms, fatigue, systemic symptoms, emotional function and worry. In opposites there is no statistically significant difference for activity domain pre/post intervention. This result was supported by Groessi *et al*., [16] who reported that The HCV self-management program was well attended and produced significant improvements along a number of dimensions of HRQOL and other outcomes.

After program implementation, the study group of Hepatitis C patients had a significant improvement of all domains regarding the health-related to quality of life for HCV patients. These findings agreed with the study that reported the program developed a positive effect on its' all items: physical, psychological, social and spiritual impacts [29].

In the same point after the implementation of the program, the study group showed significant improvement in all items of disease-specific scale to measure HRQOL. This could be due to that the program increases the patients' awareness and the level of knowledge about the nature of the disease. This result is supported by a study indicating the beneficial effects of training and self-care programs on the health related QOL of patients with HCV. According to the training session on liver disease and interchange of information among patients at group work is helpful to reduce their anxiety related to their disease [29].

CONCLUSION

Based on findings of the present study, it can be concluded that:

Chronic hepatitis C causes a decline in QOL measures through a broad spectrum of clinical complaints. The impact on QOL affects physical, social, and mental health domains. Overall, the study has indicated that the highest percentages in the studied sample need program for the following Physical, educational, psychological, social and spiritual needs. In addition, there was a statically significant difference between patients' needs with educational level and degree of illness. Majority of the studied sample had an unsatisfactory level for all HRQOL items pre intervention total unsatisfactory level was one hundred percent but post educational intervention the total satisfactory level was sixty-six. Moreover, there is highly statistically significant difference between total fatigue, abdominal symptoms systematic, Emotional function and total worry pre/post educational intervention. Meanwhile no statistically significant difference between total activity pre/post educational intervention. After the implementation of the health educational program, the study group showed significant improvement in all health domains of the measuring HRQOL compared with before intervention.

RECOMMENDATIONS

Based on the findings of the present study, it recommended that:

- Concerning Ministry of Health (MOH) activities, Hospitals and specialized centers developing a health education unit in each hospital in order to increase educational programs along with long-term follow up are suggested.
- It is recommended to generalize the designed educational intervention in this study for all HCV patients at MOH hospitals.
- Behavioral counseling help for supporting of infected HCV patients to improve care and reduce stigma related to HCV infection.
- Conducting support groups for infected HCV person and their families.
- Train and support persons living with infected HCV patients.
- Conducting research to know which component change in HRQOL might be attributed.
- Conducting research regarding behavioral aspects leading to the endemicity of HCV.
- Educational and multimedia tools for HCV disease prevention and raising of the relevant societal awareness.

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