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Coping Strategies versus Health-Related Quality of Life among Hepatitis C Patients

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Abstract
This study aiming at describe overall health related quality of life and preferred coping strategies among hepatitis's c patients and correlate between health related quality of life and coping strategies. The study was conducted in two outpatient clinics 1st outpatient clinic for hepatic disease affiliated to Ain shams university .2nd outpatient clinic affiliated to Theodor Bilharz research institute. The samples of this study consist of 106 hepatitis c patients. Data were collected through three tools .First tool:-
A structured interviewing questionnaire developed by researchers for collecting data related to: Socio-demographic characteristics of *patients such as age – sex –education ,Questions about* parameters of quality of life which are most commonly affected and behavioral changes following diagnosis .Second tool*:- The Hepatitis Quality of Life Questionnaire version 2*.(HQLQv2). Third tool **:-** Coping strategies inventory. The main results revealed that a significant reduction in the patient quality of life and there was significant positive associations between Overall (HRQoL) versus coping strategies. The present study recommended that providing counseling intervention to hepatitis c patients for evaluating patient psychological condition and provision of psychological support to patients during different stage of treatment. And implementing educational intervention for the patients to educate them to promote the use of appropriate coping strategies to enhance quality of life.
Keywords: hepatitis c- quality of life – coping strategies .

Introduction

Hepatitis has remained a public health problem through recent decades. HCV was discovered in 1989. HCV may result in acute disease, which can be severe,
A symptomatic and unobserved. In minority of the cases, the acute disease may resolve completely, but unfortunately hepatitis C can disturbingly cause chronic hepatitis. In turn, chronic hepatitis C leads to mild illness, which may be symptomatic and not progressive. The disease will not be detected in these patients unless screening of hepatitis C virus is undertaken, as majority of
the time the patients get diagnosed with hepatitis C at blood screening while donating blood or otherwise (Mohan, 1995).
It is estimated that HCV has globally infected about 170 million people and 3 to 4 million people are newly infected each year(World Health Organization, 2006)
The Egyptian Demographic Health Survey (EDHS), a cross sectional survey including hepatitis C virus (HCV) biomarkers, was conducted in 2008 on a large nationally representative sample. It estimated HCV prevalence among the 15–59 years age group to be 14.7% (El-Zanaty,2008)
quality of life can be defined as “optimum levels of mental, physical role,
and social functioning, including relationships, and perceptions of health, fitness, life satisfaction and well being (Bowling, 2005).half of patients with chronic hepatitis C have symptoms that cause them to seek medical care. (Ware ,et AL.2009).chronic infection with the hepatitis C virus (HCV) compromises health-relatedquality of life (HRQoL), with profound negative impacts on both physical and mental well being, similar to other chronic conditions .patients with chronic hepatitis C are correlated with impaired attention and Concentration. Other symptoms of chronic hepatitis C that decrease HRQoL include associated sexual dysfunction and depression. (Foster, 2009)
Coping strategies have been shown to mediate between stressors and chronic illnesses such as hepatitis and consequences such as physical and psychological well being (Constant,et al.2005)
Understanding coping reactions and strategies and its impact on quality of life is an area of great importance for patients, family members, and physicians. How an individual copes with specific stressful symptoms of the disease has a significant effect on overall function and well-being (Coughlan, Shehan, & Crowe. 2002)

Significant of the study

Hepatitis C may diminish health-related quality of life (HRQOL) also in the absence of clinically significant liver disease; in particular the impact of HCV seems to be most dramatic in social and physical function, general health and vitality**.** Hepatitis C has been found to have a negative impact on the psychological status in 44.2% of patients mood, anxiety, and personality disorders are common among hepatitis C patients each occurring in 26% to 34% of patients .Moreover, anxiety is reported to be common among those receiving interferon and it often Fatigue and

anhedonia are also frequently occurring side effects of interferon **(Sinakos et Al.2011).**The great majority of hepatitis c with mood disorders had never received an evaluation of their symptoms or received treatment. Almost three quarters of those with a depressive diagnosis, and 90% of those with an anxiety diagnosis, had received no formal psychiatric evaluation, even at general practitioner level, despite their prolonged contact with the medical service.

There may be several factors contributing to this widespread failure to detect and manage mood disorders in this patient group. First, psychiatric disorders are seen as stigmatizing, and there may be reluctance on the part of the medical staff to involve psychiatric services in the management of hepatitis because of the fear of increasing the person's sense of stigma. It should be remembered, however, that most persons with hepatitis C are medically well, and that the most significant factor threatening their quality of life is the high prevalence of psychiatric disorder. Failure to manage those disorder **.**Coping strategies are a very important factor on the quality of life, among patients with chronic hepatitis Can active coping style prevails, with strategies like problem resolution. On the opposing, depressive reactions as coping strategy, along with anxiety symptomatology and depression, as well as with stressful social environment, they contribute considerably to the presence of poor self-informed quality of life so that this study aim to describe the coping strategies and quality of life among patient and correlate between both

Aim of the study

This study was aim to

- describe overall health related quality of life and preferred coping strategies among hepatitis's c patients
- correlate between health related quality of life and coping strategies

Research hypothesis

- Patients suffering from hepatitis (C) have significantly decreased on all scale of health related quality of life
- There was a positive correlation between quality of life and coping mechanism

Sample

the sample of this study consist of 106 hepatitis c patients with following inclusion criteria :

- Sex: both sex
- Age : above 18 years
- Free from physical and psychiatric disease
- Adherent to interferon and ribavirin therapy to the first three month of treatment and willing to participate in the study.

Setting

This study was conducted in two outpatient clinic

1- out patient clinic for hepatic disease affiliated to Ain shams university

2- out patient clinic affiliated to Theodor Bilharz research institute

Pilot study

A pilot study was carried out on 12 hepatitis c patients , in order to test the applicability of tools and clarity of the included questions as well as to estimate the average time needed to fill the sheets. Those who shared in the pilot study were excluded from the study sample.

Field work

At the beginning, the researchers introduced themselves and briefly explained the study objectives to patients. Data were collected over a period of 3 months from June – August 2013, 3days/week from 9.00 a.m.: 2.00 p.m. The questionnaires were filled from 30-40 minutes by the researchers.

Three tool of data collection :

First tool:-A structured interviewing questionnaire developed by researchers for collecting data related to: Socio-demographic characteristics of *patients such as age – sex –education, Questions about* parameters of quality of life which are most commonly affected and behavioral changes following diagnosis.

Second tool*:-Questions about* parameters of quality of life which are most commonly affected by illness

The Hepatitis Quality of Life Questionnaire version 2.**(** HQLQv2**)**

It is originally developed by (**Ware and Sherbourne 1992).** The HQLQv2 consists of two parts, the generic SF36v2 health survey.

The questionnaire comprised 36 items and 8subscales/domains, including

- physical functioning(PF)
- role limitations due to physical health problems(RP)
- bodily pain (BP
- general health perceptions(GH),

- vitality (VT)
- social functioning (SF)
- role limitations due to emotional problems (RE),
- and mental health (MH).

and two additional generic scales (Health Distress and Positive Well-being)

Scoring: - the scoring system was classified into four categories between 1and 4 points for each item according to 8subscales/domains and two additional generic scales (a)1 do not appreciated at all (b) 2 appreciated slightly (c) 3 appreciated average (d) 4 appreciated normal

Third tool:-**Coping strategies inventory**

The inventory was initially developed by **(Holroyd et all 1983)**to assess coping thought and behavior in response to specific stress. The inventory consist of32 questions in five items Likert format :

- problems solving =1,9,17,25
- cognitive restructuring =2,10,18,26
- express emotion = 3,11,19,27
- social contact =4,12,20,28
- problem avoidance =5,13,21,28
- wishful thinking =6,14,22,30
- self criticism = 7,15,23,31
- social withdrawal =8,16,24,32

Scoring: - the scoring system was classified into five categories

The inventory consist of 32 questions in five items Likert format

(a) not at all from 1:32 (b) slightly 33:65(c) as far as 66:98(d) much from 99:131 (e) very much from 132:164.

Results

Table(1) The table shows that 62.2%of study sample in age group 30- 40 years old .56.6 %of them were male .as evidence 66.1%of study sample were married. About educational level ., primary and secondary education were a prevailing level of education .they represent 34%and 33%respectively.43.3%of study sample were employee . Concerning to income highest percent of sample 66.1% their income was 900-1200 Egyptian pound

Table (2) as observed from the table most of patient have quality of life less than before illness it represent 90.6% .The most observed change in financial distress due to illness and Withdrawal from job they represent 85.8% and83.9% respectively meanwhile more than half 56.6% of study sample have more coping pattern more than before illness

Table (3 as evident there was highly significant difference among quality of life variables . the highest mean score was observed in Physical functioning ×2= 28.566 meanwhile the lowest mean score was observed in HCV Limitations and Positive Well-being .

Table (4) The table shows that there was a highly significant difference among coping strategies' variables. The highest mean score was observed in social withdrawal and problem solving

Table (5) Reveals that significant positive association between Overall HRQoL versus coping strategies

Table (6) clarifies that the most behavioral change following diagnosis were

Close relationship to other family members, Decrease sharing of personal care items and Decrease use of over-the-counter medications .they represent 84.9%, 75.8% and 66% respectively.

Discussion

Hepatitis C virus (HCV) is now the most frequent cause of chronic liver disease, including cirrhosis and hepato-cellular carcinoma (HCC). HCV may diminish health-related quality of life (HRQOL) also in the absence of clinically significant liver disease; in particular the impact of HCV seems to be most dramatic in social and physical function, general health and vitality. Coping strategies are a very important factor on the QL. Among patients with chronic hepatitis C. an active coping style prevails, with strategies like problem resolution. On the different, depressive reactions as coping strategy, along with anxiety symptomatology and depression, as well as with stressful social environment, they contribute considerably to the presence of poor self-informed quality of life.

Socio-demographic characteristics of the study sample

The present study explains that more than of the study sample is male in age group between 30- 40 years old. The highest percent of them are married.

Regarding to the level of education highest proportion of sample had

Primary , preparatory and Secondary level of education ,they represent 34%&33%.this results similar to **Ibrahim, and Madian. (2011)** they conduct their study in interferon in national medical institute in Damanhur

governorate on 200 Hepatitis C patients. They found that nearly two thirds of the sample were male with mean age was 43.5 (range 18-68) years. Regarding education, 37.5% had high school level (secondary school and middle institute) and 60.2% of patients were employed. Concerning to the patients income high percent of the patient reported that they have insufficient income .this due to the costly of treatment
Lead to finical hardship

Quality of Life in Hepatitis C as perceived by the patient

The result of present study denotes that hepatitis C infection has a profound impact on the patient's health-related quality of life. the most of the patients reported that their quality of life decline since diagnosis of hepatitis C this may be due to the Hepatitis C virus lead to different physical problems: fatigue, abdominal pain, GI abnormalities exacerbate the quality of life of patient. Patients assume that their imperfect health state is responsible for disconnecting them from enjoying their normal life and daily activities which ultimately leads to poor psychological and social behavior. This feeling lead to most of patients reluctant to share in social activity. This result similar with Sinakos, et al. (2010) they assess the quality of life among Greek chronic hepatitis they found that hepatitis C is associated with a considerable impairment of HRQoL as compared with healthy controls population.

Almost of the patient reported they have Financial Distress Increased Due To Illness, this could be due to most of patients have different physical complain that results from illness itself or as side effect of medication. That lead to absenteeism from work ,inability to continuing in work ,loss of productivity in addition the cost of same medication is very expensive and not affordable .

Concerning to the patients perception of emotion status ,approximately two third of studied sample have emotional instability and depressive mood , this may be due to most of the patients were worry about the future , fear of transmitting their
disease to others ,some of patients have lack of confidence and patience, unable to perform routine work activity, have limited interpersonal relationship in addition the most of patients have financial hardship due to illness. This results in agreement with (Wilson, 2010) stated that Depression is very common among the HCV patients. Hepatitis C virus is reported to cross blood-brain barrier and causes mood disturbances and irritability .

Regarding to Satisfaction With Sexual Life ,more than two third of the study sample not satisfied with sexual life ,this may be due to patients have beliefs that Hepatitis C is to be transmitted through sexual contact so far patients are reluctant to maintain their normal sexual activities due to fear of infecting their partners. And lack of awareness about using loup during sexual contact to prevent transmit ion of disease

This result in accordance with Helbling ,Overbeck, and Gonvers JJ.(2008) stated that HCV infection that reduces HRQoL is sexual dysfunction. More
data are available for male than for female sexual dysfunction. Concerning to coping strategies more than half of the study sample mentioned that they coping strategies are strength than before this may due they have high level of stress . they are struggle to restore their physical health ,normal daily activity pattern , overcome stigmatized nature of illness, and to get drug insurance in addition they are struggle to resolve uncomfortable feelings, preserve ability to effectively function in relationships and maintain a positive self-concept that promotes good quality of life .

Quality of life among hepatitis (c)patients under study

the finding of the present study revealed that there was highly significant difference among sub domains of The Hepatitis Quality of Life Questionnaire version2 . (Research hypothesis)there was significant decrements in quality of life domain. this may be due to viral C hepatitis is associated with nonspecific symptoms such as fatigue, irritability, nausea, anorexia, headache. These symptoms have been directly associated with reduction of health related quality of life (HRQOL), as evidenced by reductions in functional health status, psychological status and general health perception measures. , antiviral treatment with (interferon α ribavirin) Frequently causes fatigue, muscular pain, influenza like symptoms, changes in the mental status and sexual desires of the patient, which will negatively affect the patient's life, social ,communication and abilities. Furthermore most these patients usually encounter multiple socioeconomic problems which may interfere with their disease perception.

These result similar to Malekzadeh., Poustchi and Modabbernia.,(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.

This results in accordance with Tawfik, (2011) and Foster, (2009) and Kang SC ,et al.(2005) 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.

This result is contradict with Mohamed,et al.(2002)they conduct study in (Zwayat-Razin, Meynoufeya Governorate), Egypt. They found that lack of reduction of HRQOL in individuals chronically infected with HCV.

As observed from the results The lowest score in the quality of life domain was HCV Limitations this may be related to depressive symptoms in hepatitis C, as in other chronic medical illnesses, with escalation of physical symptoms, functional impairment that reduce quality of life moreover the most of encounter different family and social stress .all patients reported that they face stress in obtaining treatment free ,in addition most of patients have lack of knowledge about managing their symptoms .this explanation supported by Bernstein, et al. (2002)they explained that the patients with chronic viral hepatitis C have a markedly reduced HRQOL both before and after the
treatment. But the quality of life depends on several factors, such as social and economical status, educational level .

Coping strategies used by the patients under study

the present study shows that the patients used different coping strategies to manage their illness and there was highly significant difference among coping strategies .This may be due to all patients have a strong desire to overcome impairment in physical function .,manage irritability ,anger ,anxiety ,depression that have been associated with hepatitis , and it is treatment moreover they confront stigma of illness. They are struggle to Ensure Access to Prescribed Medications, , sustain relationships with family and friends, , prepare for an uncertain future in addition they are try to adhere to recommended lifestyle changes, finally they are challenged to preserve emotional balance and a positive self-image, to maintain a sense of competence and mastery
these result consistent with Rukhsana, &Yusuf .(2011) they examine State Anxiety and Coping Strategies Used by Patients with Hepatitis C in Relation to Interferon Therapy and found that patients differ in the use of coping strategies. Those who were waiting to receive interferon therapy used more religious focused and active practical coping strategies as compared to those who had completed interferon therapy. On the contrary, avoidance coping strategies were used significantly more by those who had completed interferon therapy as compared to those who were waiting to receive it.
This result similar to Frazier, & Marsh.. (2006). they found that Parkinson's
Disease has shown that patients who cope best use problem focused coping for management of symptoms and emotional-focused coping for living with the stress of being a patient with Parkinson's Disease
correlation between quality of life versus coping strategies among hepatitis(c) patients under study
Test of the hypothesis The results of the present study conclude that there was significant relation between quality of life and coping strategies. This due to effective coping helps to lessen stress of illness , resolve uncomfortable feelings, preserve ability to effectively function in relationships and maintain a positive self-concept that promotes good QOL. In addition coping enhance the likelihood of recovery; to adjust or to maintain positive self-image; and to maintain emotional equilibrium or balance. the result shows that all patients used different coping strategies this may due to coping is mediate between illness stress and physical and psychological sequence of illness .
This explanations in agreement with Ogden, (2004). Stated that the goals of coping are to reduce stressful conditions and enhance the likelihood of recovery; to adjust or tolerate negative events; to maintain positive self-image; and to maintain emotional equilibrium or balance.
This result is consistent with Raju, & Latha. (2012) they were conducted study on 60 dialysis patients in selected hospital in India to describe the Quality of life and Coping strategy among dialysis patients. They found that There is a significant relationship between the quality of life & coping strategies of dialysis patients.
This result is similar to Darlington, et al. (2009)they conduct their study on 79stoke patient after discharge from hospital to investigate the longitudinal relationship between coping strategies at discharge and QoL approximately 9–12 months after discharge. they found that coping strategies was also positively associated with QoL at follow-up,.
As observed there was no significant relationship physical function, bodily pain and general perception of health . Versus cognitive restructuring , Social contact this maybe due to all patient do enormous effort to manage physical problems caused by hepatitis c: they try to understand nature of illness, gain information about manage disease symptoms, side effect of medication in order to maintain positive body image . normal social roles and interpersonal relationship. This result is similar to Ware,Davies, and Whittaker.(2013) they found that patients experience hepatitis (c) talked about the ways in which they coped with and responded to the physical and mental health from illness and side effects of the HCV treatment.
Also this result in agreement with Fowler ,(2007) was conducted study at an outpatient treatment center in Dallas, Texas, for 99individuals infected with hepatitis C conduct study on to determine the relationships among illness representations, coping strategies, and quality of life. He found that Overall physical health, was not significantly correlated with either of the coping strategies and quality of life.
The finding of this study revealed that the problem solving and cognitive restructuring coping were highly significantly correlated with mental health , Positive Well-being and health distress .this may be related to different factors the patients are being treated with antiviral therapy for their hepatitis C, they are self reliance

,accepting responsibility for the treatment , seeking for medical ,and social support to maintain their adjustment in order to maintain normal daily living activities pattern .The most of the patients have a strong needs to get ride from anxiety , depression associate with illness and its treatment in addition they are dependence on God , praying to lessen their distress . additionally they are consider hepatitis C infection as fate for Allah, so they have positive well being .

This result is consistent with Chinnawong, Kritpracha and Panthee.(2011) they conduct study on 88 patients with heart diseases to examine the relationship between coping strategies and quality of life and they found that Problem-focused coping was significantly positively associated with overall quality of life , particularly the health and functioning dimension but it was not significant with psychological & spiritual and family dimensions .

The result conclude that there was no significant correlation between avoidance coping versus physical role, role limitation, mental health , and health distress . this may be related to ., the all of patients have been take active process to manage anxiety associated with in illness, have been accepting their illness moreover there are have a complete faith in Allah for helping them to manage illness .this results consistent with *Ibrahim, Taboonpong, and Nilmanat*. (2009) they conduct study on 81 Indonesians patients undergoing hemodialysis to assess the relationship between coping and QOL among Indonesians

undergoing hemodialysis they found that Avoidance coping strategies

have been found to be negatively correlated to one's level of QOL

finally the result denote that was no significant correlation between wishful

Thinking, self criticism versus vitality ,mental health and social function .this maybe due to the patients assume active coping strategies in managing their illness . this result is similar to Rubio, et al. (2011)they carried out their study on93 hepatitis patient waiting for liver transplantation , they exists negative correlation between the acceptance resignation strategy and the physical functioning, general health, vitality, role-emotional and mental health.

Behavioral change following diagnosis of Hepatitis C Infection

The result of the present study revealed that the highest proration of the patients reported that they have Close relationship to other family members since they were discover their illness, this may be due to hepatitis c diminish the patients quality of life and their family members supporting the patient in modifying their change in life style regarding activity, nutrition in addition the family's is the main sources for emotional supports.

The most behavioral changes was observed among patient of this study was decrease sharing of personal care items and decrease use of over-the-counter medications. This may be due to all patients have strong desire to prevent or reduce disease progression in the infected person and those that will

reduce the risk of virus transmission to others. This result similar to Lindsey et al. (2005)and Scognamiglio, et al. (2007). They found the most behavioral change since diagnosis of hepatitis were decrease tobacco use followed by decrease sharing of personal care items and decrease use of over-the-counter medications.

Conclusion

.the results of the present study conclude that there was significant reduction on the quality of life among hepatitis c patients in this study and there was a significant correlation between quality of life and coping strategies .further study is need to consider educational level , socioeconomic and other personality characteristics in studying hepatitis c infection in interaction with coping strategies, quality of life .

Recommendation

The present study recommends the following

- Providing counseling intervention to hepatitis c patients for evaluating patient psychological condition and provision of psychological support to patients during different stage of treatment.
- Implementing educational intervention for the patients to educate them to promote the use of appropriate coping strategies to enhance quality of life.

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Table1
Socio-demographic characteristics of the study sample

Items	No	%
Age years		
20 - 30	15	14.3
30- 40	66	62.2
40-50	25	23.5
Mean ±SD 38+ 5		
sex		
Male	60	56.6
Female	46	43.4
Level of Education		
Illiterate	20	18.9
Primary and preparatory	36	34
Secondary	35	33
University	15	14.1
Martial status		
Single	10	9.4
Married	70	66.1
Divorced	20	18.8
Widowed	6	5.7
Occupation		
Farmer	30	28.3
House wife	30	28.3
Employee	36	34
Handi craft	10	9.4
Income \month		
700 -900 Egyptian pound	16	15.1
900-1200 Egyptian pound	70	66.1
+1200 Egyptian pound	20	18.8
Income Sufficient	10	9.4
Income Insufficient	96	90.6

Table (2) Quality of Life in Hepatitis C as perceived by the patient

Items	No	%
Quality of life		
Same as before	0	0
Less than before	96	90.6
More than before	10	9.4
Coping strategies		
As usual	30	28.3
Less than before	16	15.1
More than before	60	56.6
Financial Distress Increased Due To Illness		
Yes	91	85.8
No	15	14.2
Depressive mood		
Yes	63	59.5
No	43	40.5
Withdrawal from job		
Yes	89	83.9
No	17	16.1
Stability in emotional State		
Yes	33	31.1
No	73	68.9
Negative Impact On Interpersonal Relationships		
Yes	67	63.2
No	39	36.8
Satisfaction With Sexual Life		
Yes	31	29.3
No	75	70.7

Table (3) Mean values and t test of quality of life

Items	2×	S D	T	**P**
Quality of life				
Physical functioning	28.566	4.215	68.528	000
Role-physical	9.000	2.828	32.760	000
Bodily pain	4.126	1.969	21.548	000
General health perceptions	13.009	1.693	79.110	000
Vitality	8.405	3.073	91.196	000
Social functioning	13.320	2.786	29.356	000
Role limitations due to emotional problems	7.150	1.248	58.985	000
Mental health	10.009	1.515	68.023	000
Health Distress	3.000	14.613	50.147	000
Positive Well-being	2.362	12.037	52.469	000
Disease-specific scales:	2.208	11.745	54.755	000
HCV Limitations	1.499	10.434	71.648	000
HCV Distress	2.620	12.990	51.040	000

Table (4) Mean values and t test of coping strategies

Items	2×	S D	T	**P**
problems solving	3.689	12.764	35.621	000
cognitive restructuring	3.000	14.613	50.147	000
express emotion	2.362	12.037	52.469	000
social contact	2.208	11.745	54.755	000
problem voidance	1.499	10.434	71.648	000
wishful thinking	2.620	12.990	51.040	000
self criticism	2.786	13.328	49.223	000
social withdrawal	3. 730	8.405	28.162	000

Table (5)Pearson correlation for quality of life and coping strategies for hepatitis patients

Items	Problem Solving	cognitive restructuring	express emotion	Social contact	Avoidance	Wishful Thinking	self criticism	Social withdrawal
physical functioning **Sig.(2-tailed)**	.258** .008	.031 .752	.224* .021	.112 .253	-.334** .000	.331** .001	-.238* .014	-.772** .000
Role-physical **Sig.(2-tailed)**	-205* .035	-.253** .009	.192* .048	- .503** .000	-.168 .084	.598** .000	-.598** .000	-.493** .000
bodily pain **Sig.(2-tailed)**	-.147 .133	-.198* .042	-601** .000	.060 .543	-.266** .006	.419** .000	-.281** .003	-.332** .000
general health perceptions **Sig.(2-tailed)**	.008 .935	.205* .035	.402** .000	.581** .000	.509** .000	-.453** .000	.765** .000	.682** .000
Vitality **Sig.(2-tailed)**	.483** .000	.401** .000	-264** .006	.084 .391	-.400** .000	.048 .626	-.073 .460	-.553** .000
social functioning **Sig.(2-tailed)**	.305** .001	.157 .109	-801** .000	.235* .015	-.463** .000	-.065 .510	-.049 .618	-.333** .000
role limitations due to emotional problems **Sig.(2-tailed)**	.297**. 002	.407** .000	.011 .911	.595** .000	.046 .639	.434** .000	.243* .012	-.580** .000
Mental health **Sig.(2-tailed)**	.597** .000	.575** .000	.290** .003	.009 .925	-.186 .056	-.182 .061	.110 .262	-.373** .000
Health Distress **Sig.(2-tailed)**	.597** .000	.297** .002	.305** .001	.483** .000	.008 .935	-.146 .133	-.205* .035	.258** .008
Positive Well-being **Sig.(2-tailed)**	.575* .000	.407** .000	.157 .109	.401** .000	.205* .035	-.198* .042	-.253** .009	.031 .752
Disease-specific scales: **Sig.(2-tailed)**	.290* .003	.011 .911	-810** .000	- .264** .006	.402** .000	-.601** .000	.192* .048	.224* .021
HCV Limitations **Sig.(2-tailed)**	.009 .925	.595** .000	.235* .015	.084 .391	.581** .000	.060 .543	-.503** .000	.112 .253
HCV Distress **Sig.(2-tailed)**	-.186 .056	.046 .639	-463** .000	- .400** .000	.509** .000	-.266** .006	-.168 .084	-.334** .000

** Correlation significant at the 0.01 level (**2-tailed)**
* Correlation significant at the 0.05 level (**2-tailed)**

Table (6) Behavioral change following diagnosis of Hepatitis C Infection

Items	No	%
Decrease tobacco intake	30	28.3
Decrease sharing of personal care items	80	75.8
Increase covering of cuts/sores	20	18.8
Decrease use of over-the-counter medications	70	66
Vaccinated against hepatitis A	16	15
Vaccinated against hepatitis B	15	14.1
Shaving in his home	35	33
Close relationship to other family members	90	84.9
Decrease working hours	48	45.3

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