

Studying the Quality of Life of Chronic Hepatitis C Patients and the Associated Factors

Afaf Abd ElAziz Basal¹, Entesar Kamel² and Howaida Nafady³

¹Medical Surgical Nursing, Faculty of Nursing, Tanta University, Tanta, Egypt

²Adult I Nursing, Munofia University, Munofia, Egypt

³Internal Medicine, Faculty of Medicine, Assuit University, Assuit, Egypt

afaf_bassal@yahoo.com

Abstract: Background: Hepatitis C virus (HCV) is a leading cause of liver cancer and cirrhosis. Egypt has possibly the highest HCV prevalence in the world; 10%–20% of the general populations are infected and HCV is the leading cause of chronic liver disease (CLD) in the country. Assessment of quality of life enriches clinical and laboratory data by providing information about the patient's perception of his state of health. Aim: to evaluate the quality of life and investigate factors influencing quality of life in patient with chronic hepatitis C. Methods: descriptive cross-sectional study was carried out at gastroenterological clinic in Tanta, Assuite and Munofia University hospitals, both men and women were enrolled into the study. Data collected sociodemographic data, disease severity, and (SF-36) short form health survey) to collect information related to quality of life. Results: The mean of physical and mental health components of SF scale of quality were low but the mean for female were more than male patients in both components. There was increase in physical health component of SF36 in single patient but mental health component increase in married patient. Regarding to place of living and occupation and economic status: there was increase in the mean of physical health component of SF scale in young patients, farmer and patient has enough income while mental health component increased in urban patient, employee and housewife. Conclusion: In this study, we concluded there is reduction in the mean of two main components (physical and mental status) and some domains of SF36 scale of quality of life in chronic hepatitis C without significant difference in relation to not only stages of CLD but also sex, marital status place of living and income.

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1. Introduction

Hepatitis C virus (HCV) is a leading cause of liver cancer and cirrhosis Egypt has possibly the highest HCV prevalence in the world; 10%–20% of the general populations are infected and HCV is the leading cause of chronic liver disease (CLD) in the country⁽¹⁾. The acute phase is rare, but chronic form, presenting scarce and nonspecific symptoms, makes clinical diagnosis difficult. The infection lasts for decades and the patient may or may not be aware of its presence^(2,3). The diagnosis of hepatitis C can be made by means of screening tests or at the time of blood donation. Most patient complaints are non specific ones, such as fatigue, irritability, nausea, anorexia, muscle pains, headaches, abdominal discomfort and articular pain although these symptoms are usually mild, they can affect physical well –being and cause emotional problem and affect the assessment of patient's state^(4,5). In hepatitis C patient some alterations, such as the stigma of liver disease leading to feeling of shame and rejection, concerns about the disease and symptoms, presence of co morbidities of disease and side effects of treatment may lead to lower quality of life⁽⁶⁾. Assessment of quality of life enriches clinical and

laboratory data by providing information about the patient's perception of his state of health.⁽⁷⁾ Also assessing health related quality of life (HRQL) among patient with chronic liver disease is important because these patients suffer from fatigue, pruritis, loss of esteem, depression that is poorly evaluated by the clinical measures⁽⁸⁻¹⁰⁾. These health status measures evaluate different domains of health, such as physical functioning, social interaction, cognitive psychological function and sense of well –being. The description of quality of life during a disease guide the decision making process when choosing the best medical approach both for patients with the individuals, well-being in mind, and for a better distribution of resources within the health system⁽¹⁰⁻¹¹⁾.

Aim of the study:

To evaluate the quality of life and investigate factors contributing to health related quality of life in patient with chronic hepatitis C.

Research questions

What are the effects of chronic hepatitis C on quality of life of patients?

What are factors influence qualities of life of patient with chronic hepatitis C?

2. Materials and Methods

Study designs and population

Design: descriptive cross-sectional study

Setting:

Study was carried out at gastroenterological clinic in Tanta, Assuite and Munofia University Hospitals from June to December 2010.

Sample:

Convenient sample of 200 patients with chronic liver disease aged 20- 60 years old both men and women were enrolled into the study. Patients with dementia or psychosis, and patients with refractory encephalopathy (grade II and more) were excluded from the sample.

Data collection

- Data were collected from the patient and medical record. Consent was obtained from the patients before the study
- The researchers and the assistants in research introduce and interview the patients (male and female) in the clinic and asked them to answer the (health related quality of life questionnaires) HRQLQ include (SF-36) short form health survey) after take consent and explanation the purpose of the study. SF-36 consists of 36 items which are categorized into 8 domains of physical functioning, role- physical, bodily pain, general health, vitality, social functioning, and role emotional and mental health. These eight domains can be summarized in two main components; physical health component (physical functioning, role- physical, bodily pain, general health) and mental health component (vitality, social functioning, role emotional and mental health). The domain scores were 0 - 100 and calculated according to the stander reference⁽¹⁰⁾ (see appendix 1)
- Clinical data and staging of disease were calculated according to clinical findings. Severity of the condition was determine by Child-Turcotte-Pugh classification of liver disease (Appendix 2)
- Demographic and socioeconomic data were collected from each patient include, age, marital status, level of education, career, income, place of living, (Appendix 3)
- A pilot study was conducted on 5 patients and necessary corrections mad on data collections methods.

Statistical analysis:

The data were coded, entered and processed on computer using *SPSS* (version 16). P value was considered significant at $p < 0.05$. data are described as number and percentage, mean \pm SD, **Chi-Square test** X^2 was used to test the association variables for categorical data. **Fisher exact test** was performed in table containing value less than 5, **Student's t-test** was used to assess the statistical significance of the difference between two population means in a study involving **independent** samples. **One way ANOVA** was used to assess the statistical significance of the difference between more than two population means in a study. **Man-Whitney test** was used to assess the statistical significance of the difference between two population means in a study involving **independent** samples with non normal distribution. **Kurskal-Wallis** was used to assess the statistical significance of the difference between more than two population means in a study with non normal distribution.

Results

In relation to Sociodemographic data 39% of patients in this study their age ranged from 50 to 60 years the majority of them 71.5% were male, 73.5 % were married and there is significance deference, 33.60 % of males and 42.10% of female patients had secondary education, 56.6% of males and 63.2% of females were lived in rural area, 39.2% of male patients worked as farmer and 36.8 % of female were housewife, 53.8% and 52% of male and female patients respectively their income was not enough. Majority of patients 93.7% of male and 100% of females were aware of the disease since 1 to 5 years and there is significant difference. 58.7% of male and 68.4% of female patients had other disease and high percent 43.4% of males patients had diabetes while 47.4% of females patients had peptic ulcer and there were significant differences. Majority of patients had regular treatment. Majority of 85.3% and 89.5% of male and female patients respectively their grad of severity of liver disease of child- turcotte- pugh were grade B (*Table 1*)

Mean (SD) scores for eight variables of SF-36: In relation to mean of the SF scale in this study, patients with chronic hepatitis c reported a poor health related quality of life, mean of the following: physical health component was 38.01 ± 15.78 which include physical function, role physical, bodily pain, general health and mean of mental health component was 39.03 ± 15.05 which include, vitality, social function, role emotional and mental health (Figure 1).

Variables affecting SF 36 domains (table 2)

In relation to age groups: mean of 2 main components physical and mental health of SF scale

increased in young age 20-30 years were 40.27 ± 9.29 in males while mean increased in female in age of 40- 50 years were 42.18 ± 16.24 .

In relation to sex : the mean of physical and mental health components scale of SF scale were 38.64 ± 14.10 and 41.44 ± 12.65 respectively for females were more than males but there was no significant difference in both components.

In relation to level of education there was increase in physical health component of SF scale in secondary education 46.52 ± 12.13 while mental health component increase in primary education 41.25 ± 13.60 there was significant difference in physical health component in relation to level of education. There was significant difference in physical health component in relation to age $p = 0.018$. In relation to marital status, there was increase in physical health component of SF36 in single patient 41.69 ± 8.62 but mental health component increase in married patient 40.12 ± 15.47 . In relation to place of living there was

no significant difference, while mental health component increased in urban patient. Related to occupation and economic status: there was increase in main physical health component in farmer and patient had enough income 39.63 ± 15.4 and 38.18 ± 22.7 respectively, while mental health component increased in patient who was employee or housewife mean was 40.8 ± 14.5 and 40.4 ± 15.5 respectively.

In relation to severity of viral hepatitis; there was no significant differences but there were increase in physical health component and mental health component of SF scale in patients their grad of child-turcotte- pugh –B of severity of liver disease.

In relation to presence of co morbidities, there were significant differences in mental health component of SF scale in patients $P = 0.020$ and decreased mean of physical health component in patients have asthma plus hepatitis C

Table 1. Sociodemographic characteristic of the study groups

Variable	Sex				X ²	P
	Male (143)		Female (57)			
	No.	71.5 %	No.	28.5%		
Age						
20-30	15	10.50%	6	10.50%	0.393	0.942
30-40	32	22.40%	12	21.10%		
40-50	39	27.30%	18	31.60%		
50-60	57	39.90%	21	36.80%		
Marital status						
Married	105	73.40%	42	73.70%	8.305*	0.029
Divorced	0	0.00%	3	5.30%		
Widow	27	18.90%	6	10.50%		
Single	11	7.70%	6	10.50%		
level of education						
Primary education	35	24.50%	12	21.10%	11.627	0.016
Secondary education	48	33.60%	24	42.10%		
University education	39	27.30%	9	15.80%		
Illiterate	21	14.70%	12	21.10%		
Place of living						
Rural	81	56.60%	36	63.20%	0.712	0.399
Urban	62	43.40%	21	36.80%		
Occupation						
Farmer	56	39.20%	3	5.30%	76.477*	0.0001
Teacher	42	29.40%	15	26.30%		
Employee	42	29.40%	15	26.30%		
Housewife	0	0.00%	21	36.80%		
Entire	0	0.00%	6	10.50%		

Table 1: continue

Variable	Sex				X ²	P
	Male (143)		Female (57)			
	No.	71.5 %	No.	28.5%		
Economic Status						
Not Enough	77	53.80%	30	52.60%	6.307	0.037
Enough	66	46.20%	27	47.40%		
Duration of informed the disease						
1-5 Years	134	93.70%	57	100.00%	2.848*	0.175
5-10 years	9	6.30%	0	0.00%		
Co morbidities						
Diabetes mellitus	62	43.40%	18	31.60%	20.853*	0.001
Peptic ulcer	33	23.10%	27	47.40%		
Arterial hypertension	24	16.80%	0	0.00%		
Asthma	24	16.80%	12	21.10%		
Adherence to the treatment						
Regular	123	86.00%	54	94.70%	3.047	0.081
Irregular	20	14.00%	3	5.30%		
Acquisition of information						
Yes	140	97.90%	51	89.50%	6.731*	0.017
No	3	2.10%	6	10.50%		
Smoking						
Yes	83	58.00%	3	5.30%	46.319	0.001
No	60	42.00%	54	94.70%		
Severity of liver disease						
Child-Turcotte-Pugh A	21	14.70%	6	10.50%	9.258*	0.006
Child-Turcotte-Pugh B	122	85.30%	51	89.50%		

* Significance when P < 0.05

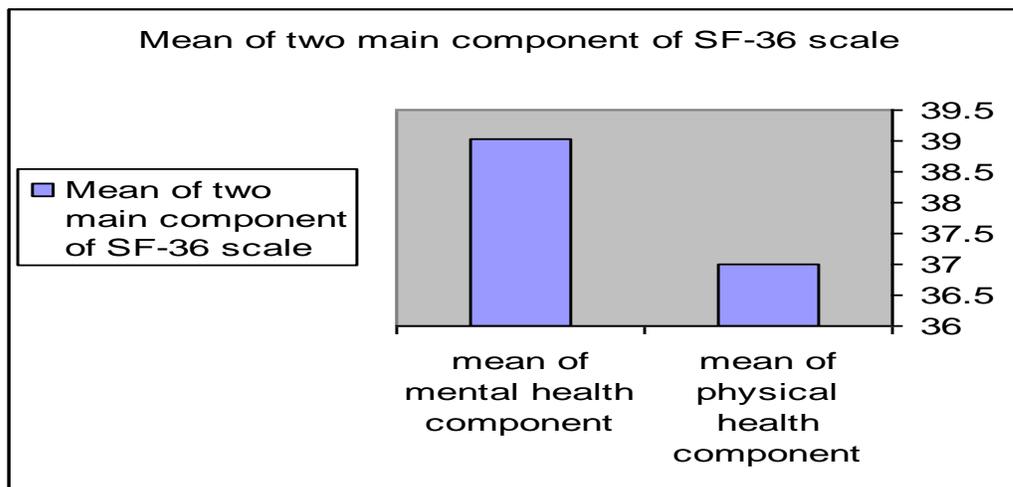
**Figure 1. Mean of two main components of SF-36 scale**

Table 2. Variables affecting mean of two main components of SF-36 scale domains

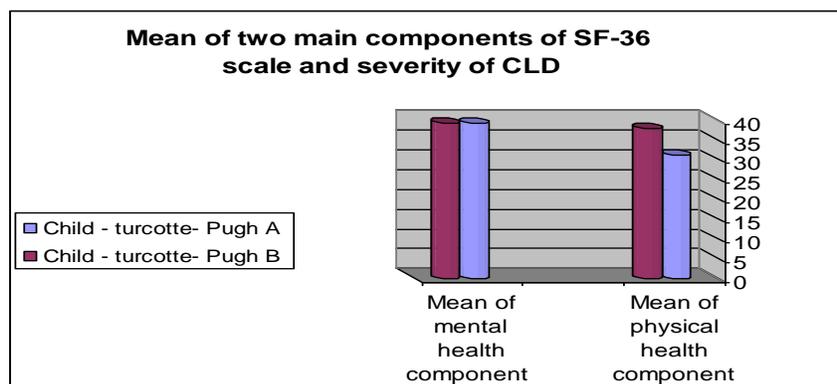
Variable	physical health	P	Mental health	P
Age	Mean ± SD		Mean ± SD	
20-30	40.27 ± 9.29	0.018*	37.54 ± 11.24	0.137
30-40	40 ± 16.18		40.07 ± 15.6	
40-50	38.9 ± 14.03		42.18 ± 16.24	
50-60	33.07 ± 16.19		36.65 ± 12.75	
SEX		0.180		0.2
Male	36.38 ± 16.22		38.13 ± 14.39	
Female	38.64 ± 14.10		41.44 ± 16.43	
Marital status				
Married	36.55 ± 15.42	0.096	40.12 ± 15.47	0.069
Widow	37.10 ± 17.82		37.01 ± 13.72	
Single	41.69 ± 8.62		39.70 ± 10.03	
Level of education				
Primary	38.60 ± 16.73	0.040*	41.25 ± 13.60	0.067
Secondary	46.52 ± 12.13		39.94 ± 12.87	
University	39.6 ± 16.8		40.24 ± 16.4	
Illiterate	36.42 ± 15.7		35.02 ± 12.15	
Place of living				
Rural	37.047 ± 15.4	0.200	38.87 ± 12.8	0.413
Urban	37.00 ± 15.56		39.36 ± 15.56	

*Significance when P < 0.05

Table 2 continue

Variable	Physical health	P	Mental health	P
Occupation	Mean ± SD		Mean ± SD	
Farmer	39.63 ± 15.9	0.288	39.6 ± 14.16	0.029*
Teacher	37.39 ± 16.26		38.4 ± 15.10	
Employee	35.46 ± 13.95		40.8 ± 14.5	
House wife	37.5 ± 13.83		40.4 ± 15.8	
Income				
Not enough	35.9 ± 14.6	0.51	38.7 ± 13.76	0.506
Enough	38.18 ± 22.7		39.41 ± 16.26	
Severity of liver disease				
Child-Turcotte- Pugh A	31 ± 19.1	0.440	39 ± 19.32	0.526
Child-Turcotte-Pugh B	37.78 ± 15		39.13 ± 13.6	
Co morbidities				
Diabetes mellitus	37.92 ± 15.29	0.51	39.9 ± 11.24	0.020*
Peptic ulcer	36.75 ± 17.18		39.75 ± 15.6	
Arterial hypertension	37.9 ± 15.79		50.34 ± 16.24	
Asthma	35.67 ± 13.3		54.65 ± 12.75	

*Significance when P < 0.05

**Figure 2. Mean of two main components of SF-36 scale and severity of CLD**

4. Discussion

This study focus on variables, such as age, sex, socioeconomic status, education level, employment and career type, living place and their effect on quality of life of chronic hepatitis patients. In this study high percent 39% of patients their age were high ranged from 50 to 60 years, majority of patients 71.5% were male and high percent of them 29.5% were farmer. These result were consistent with *Thumboo et al.* and *Khaled et al.*^(13,14) who stated that rural areas are more affected by HCV, these may return to that most of them were farmer, where high prevalence of bilharizias. Also National Health Institute (NIH)⁽¹⁵⁾ research reported that factors that have been reported to influence the rate of HCV disease progression include age (increasing age associated with more rapid progression), gender (males have more rapid disease progression than females), alcohol consumption (associated with an increased rate of disease progression), HIV co-infection (associated with a markedly increased rate of disease progression), and fatty liver (the presence of fat in liver cells has been associated with an increased rate of disease progression).

In this study result revealed that the mean of physical health and mental health the two main components of SF scale of quality of life were decreased. This constant with *Thumboo et al.*⁽¹³⁾ who stated that patients with CLD usually have health related quality of life (HRQL) lower than normal population and the deterioration of HRQL appears while the severity of CLD increases.

In our study mean of physical health component of SF -36 scale were increased in young age and significant difference in relation to age while mental health component decrease, this may be due to the nature of this period of life characterized by activity and effect of illness on psychological status, also both mental and physical health components of SF scale were elevated in female more than male, this may be due a lot of female were housewife and farmer and live in rural area where it is characterized by cooperation and activity also female are more health concern and treatment seeker than man. This was constant with *Khaled et al.*⁽¹⁴⁾ a large proportion of his study reported physically active because they were in a rural area where walking is common. But *Fonta et al.*⁽¹⁶⁾ found no significant influence of sex and age on HRQOL. In this study we found that marital status had not significant deference in SF -36 scale but the mean of physical component of the scale increase in single, while mental component of SF-36 scale increase in married patients. This was constant with *Abhasne et al.*⁽¹⁷⁾ marital status did not affect HRQOL this may be due to close-knit type of this society so hepatitis patient can get psychological

support from other family members even when they are divorced or single.

We found in this study significant deference in relation to level of education and mean of physical health component of SF scale also the mean were elevated in secondary education level of education while mental health component increase in primary education. This may be due to a lot of them were farmer and close-knit type of this society. This in contrast with *Abhasne et al.*⁽¹⁷⁾ they found that lower education level and type of career reduced vitality and role-emotion (two elements of mental health component of the scale).

In our study there were no significant difference between two component of SF-36 scale and degree of severity of chronic hepatic C, this may be due to excluding severe cases from this study also due to spread of cooperation and psychological support in Egypt. This finding was accordance with the result of *Schwarzinger*,⁽¹⁸⁾ he found no significance reduction of HRQOL in patients chronically infected with HCV compared with uninfected, but in contrast with *Khaled et al.*⁽¹⁴⁾ whose results revealed that there were correlation between quality of life and ALT, bleeding manifestation, ascites and serum bilirubin, also *Elegance and Ong*,^(19,20) stated that Patients with impaired liver function had lower SF-6D health preference values and SF-36v2 scores in all scales than the uncomplicated group although the differences did not reach statistical significant. They had significantly lower CLDQ score than the uncomplicated chronic Hepatitis B group, probably because they were more worried about cirrhosis or Hepatocellular Carcinoma.

In relation to presence of co-morbidities, there were statistical significant differences in mental health component of SF scale in patients and decreased mean of physical health component. This finding may be due to the effect of this disease on physical status and activity. This was constant with *Hussain et al.* and *Hauser*^(21,22) whose results revealed that negative impact of the number of medical co morbidities on some domains of physical health as chronic medical conditions requiring treatment and monitoring, especially for painful medical co morbidities.

Conclusion

In this study, we concluded that reduced mean of two main component (physical and mental status) and some domains of SF36 scale of quality of life in chronic hepatitis C without significant difference in relation to not only stages of CLD but also age, sex, marital status, place of living, income and level of education.

Recommendation:

While medical treatment is a key to improve patient condition and HRQL, additional treatment with psychosocial support to raise patient health perception may improve HRQL.

Corresponding author

Afaf Abd ElAziz Basal
Medical Surgical Nursing, Faculty of Nursing, Tanta University, Tanta, Egypt
afaf_bassal@yahoo.com

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