



THE QUALITY OF LIFE OF ELDERLY PATIENTS WITH LIVER CIRRHOSIS IN THE OUTPATIENT CLINICS

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ABSTRACT:

Background: Liver cirrhosis is associated with a multitude of complications that directly impact on quality of life and lead to significant morbidity and mortality among elderly patient **Aim:** the study aimed to assess the quality of life of elderly patients with liver cirrhosis in the outpatient clinics. **Design:** Descriptive research design was applied in this study. **Sample:** A purposive sample was equal 72 elderly patients. **Setting:** medicine outpatient clinic at El-matareya Teaching Hospital (Cairo, Egypt). **Tools:** two tools was used, first tool: Structural interviewing questionnaire cover demographic characteristics of studied sample, and Patient knowledge about liver cirrhosis. Second tool: Elderly People's Quality of Life rating scale used to determine the level of quality of life for patient with liver cirrhosis. **Result:** The study results revealed that 80.0% of study sample had unsatisfactory knowledge about liver cirrhosis and 71.8% of the study sample had poor quality of life. **Conclusion:** there was highly significant positive correlation between total knowledge scores and total quality of life scores regarding liver cirrhosis among the studied sample.

Recommendation: continuous implementing educational program for patients about liver cirrhosis management.

Key words: *Quality of Life, Elderly Patients, Liver Cirrhosis*

I -INTRODUCTION

Ageing is a continuous and gradual process. It is characterized by great changes in body organs. These changes occur depends on environmental, cultural and genetic characteristics as well as the presence or absence of pathological conditions. The goals of healthy aging are maintaining physical and mental health, avoiding disorders, and remaining active and independent. For most people, maintaining general good health requires more efforts. Elderly has been defined as a chronological age of 65 years old or older, while those from 60 through 74 years old are referred to as “early elderly” and those over 75 years old as “late elderly.” [1].

The proportion of people aged over 60years is growing faster than any other age group, as a result of both longer life expectancy and declining fertility rates. The number of older people in Egypt in 2015 reached 6 461 078 persons which represent 7.8% of the total population [2]. People aged 60years worldwide was (617 million) which represent 8.5% of total population. By 2050, this number of people is expected to more than triple to 2 billion, and the global life expectancy is expected to increase by almost 8 years (climbing from 68.6 to 76.2 years) [3].

The body cell changes occur in function and in appearance. Older cells function less well. Also, in some organs, cells die and are not replaced, so the number of cells decreases. The number of cells in the testes, ovaries, liver, and kidneys decreases markedly as the body ages. When the number of cells becomes too low, an organ cannot function normally. However, not all organs lose a large number of cells. The brain is one example. Healthy older people do not lose many brain cells. Substantial losses occur mainly in people who have had a stroke or who have a disorder that causes the progressive loss of nerve cells (neurodegenerative disorders), such as Alzheimer disease [4].

Liver cirrhosis is defined as the histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury, which leads to portal hypertension and end-stage liver disease. Cirrhosis is an increasing cause of morbidity and mortality in more developed countries, being the 14th most common cause of death worldwide but fourth in central Europe. It is characterized by tissue fibrosis and the conversion of normal liver architecture into structurally abnormal nodules [5].

Portal hypertension is the earliest and most important consequence of cirrhosis and underlies most of the clinical complications of the disease. Portal hypertension results from an increased intrahepatic resistance combined with increased portal (and hepatic arterial) blood flow. The fibrotic modifications of liver tissue leading to increased intrahepatic resistance and the degree of portal hypertension seem to be highly correlated until Hepatic venous pressure gradient values (HVPGV) of 10–12 mm Hg are reached. At this stage, this broadly represents the turning point between ‘compensated’ and ‘decompensated’ cirrhosis [6].

In compensated cirrhosis, the liver is still able to perform vital functions, and thus few or no clinical symptoms are noticeable by the patient. While In decompensated cirrhosis, there is sufficient organ damage such that the liver is unable to perform vital functions effectively, and functional decline progresses rapidly. Transition from compensated to decompensate cirrhosis is marked by the development of complications, including ascites, jaundice, and esophageal varices[7].

Quality of life (QoL) has been defined as “an overall general well-being that comprises objective descriptors and subjective evaluations of physical, mental, social, and emotional well-being together with the extent of personal development and purposeful activity, all weighted by a personal set of values” [8].

The term health-related quality of life (HRQoL) reflects the impact of the disease upon a person's quality of life. It is a subjective, multidimensional concept addressing various aspects of the individuals' life such as age, gender, socioeconomic status, and type of illness, and treatment, that should be considered during patient evaluation [9].

Liver cirrhosis has a negative impact on HRQoL since patients often present asthenia, indisposition, abdominal, muscle, and/or joint pain or discomfort, lack of appetite, insomnia, and complications related to liver cirrhosis, such as ascites, varicella bleeding in the stomach and esophagus, and hepatic encephalopathy. Moreover, Liver cirrhosis is linked to job loss, impaired functioning, mood swings, anxiety, low self-esteem, depression, and other emotional problems that severely affect QoL and well-being [10].

Gerontological nursing role in patient with liver cirrhosis is important to maintain hepatic function as well as improved activities of daily living and quality of life (QoL) of

patients. It is important to understand the changing characteristics of diseases in the elderly, as well as continuously increasing healthy lifestyle and prevent non-alcoholic steatohepatitis that leads to liver cirrhosis and liver cancer, in order to fully understand the disease concept and select the appropriate treatment methods. Furthermore, various complications of liver cirrhosis, such as liver cancer and gastrointestinal tract bleeding, which affects QoL in the elderly can be prevented^[11].

1.1 Significance of the study

In 2013, Egypt had the highest percentage of aged liver cirrhosis mortality rates, 72.7 and 71.2 deaths per 100,000, respectively ^[12]. **In Egypt** the commonest cause of liver cirrhosis was Hepatitis C Virus(HCV). Egypt is the country with the highest HCV prevalence in the world at that time; up to 20% of the general population is infected. In 1999, the prevalence rate of HCV positivity to be 25–30% of the population. In 2008, the prevalence of HCV antibodies among the 60 year age group, was 34.7%, with an estimated 6 million Egyptians had chronic HCV infection. Then, in 2015, the prevalence of HCV infection in Egypt was 40% of Egyptians of age 60 years, while 7% are chronic active hepatitis C patients ^[13].

Prevalence of Hepatitis B Virus(HBV) among Egyptians aged 60 years, it reported prevalence rate of 1.4% with low rates of HBV-HCV co-infection (0.06%) despite exceptionally high prevalence of HCV nationwide . that lead final to fibrosis and/or inflammation in liver. Co-infection of Schistosomiasis with viral hepatitis, either HBV or HCV is very common since the regions with a high prevalence of schistosomiasis usually have a high endemicity of chronic viral hepatitis. As a result of extensive schistosomiasis control programs with intravenous tartar emetic 20–50 years ago, that was unfortunately leading to spread of hepatitis B and C through re-use of needles ^[14]

The quality of life of liver cirrhosis patients could be improved by providing them with adequate nursing counselling and intensive education. Educational interventions are applied as a regular portion of the nursing work; it can be delivered in the form of designed activities, including symptoms management, lifestyle instructions, and behavioural modification. However, before drafting instructions, nurses must understand the educational needs of patients and the factors affecting those needs^[15]. Therefore, this study was conducted to assess the quality of life of elderly Patients with liver cirrhosis in the outpatient clinics.

1.2 Aim of the study:

The aim of the study is to assess the quality of life of elderly patients with liver cirrhosis in the outpatient clinics through the following objectives:

- Assessing the knowledge of elderly patients with liver cirrhosis about liver cirrhosis.
- Assessing quality of life among elderly patients with liver cirrhosis

1.3 Research questions:

1. What is the knowledge of elderly patients about liver cirrhosis?
2. What is the quality of life for elderly patients with liver cirrhosis?

II- SUBJECTS AND METHODS

2.1 Study design:

A descriptive research design was applied to achieve the aim of this study.

2.2 Study setting:

The study has been carried out in medicine outpatient clinic at El-matareya Teaching Hospital (Cairo, Egypt).

2.3 Subjects:

A Purposive sample was used to achieve the aim of the study. The study sample consists of 72 elderly people they represent about 10% from the total attending the outpatient clinic during 6month through the period of the beginning of feberaly 2019 until the end of July 2019. The elderly patients have been selected according to the following criteria:

- Age 60 year and above
- Diagnosed with liver cirrhosis
- Able to communicate
- Accept to participate in the study.

2.4 Tools for data collection:

Two tools of data collection were used to carry the current study namely, A Structural interviewing questionnaire and quality of life scale.

Tool I: A Structural interviewing questionnaire:

This tool was developed by investigator after reviewing the national and international related literature. It will consist of four parts:

First part: Demographic characteristics: This part include data about age, sex, marital status, level of education, occupation, residence, monthly income and residents at home.

Second part: Patients knowledge about liver cirrhosis. Which include assess knowledge about meaning of liver cirrhosis, signs & symptoms, causes, types, stages, methods of diagnosis, methods of prevention, complications and methods of treatment of liver cirrhosis.

Scoring system:

For knowledge items, a correct answer was scored (two point), while the incorrect answer was given (Zero), according to elderly patient with liver cirrhosis answers. Total scores were 18 grades for 9 items, their knowledge was categorized into:

Satisfactory knowledge $\geq 50\%$ (≥ 9 grade)

Unsatisfactory knowledge $< 50\%$ (< 9 grades)

Tool II: Quality of life scale

Adapting from [16] Elderly People's Quality of Life rating scale used to determine the level of quality of life for patient with liver cirrhosis. The scale was formed of 11 items contains 34question, the Life overall (4questions), health (4questions), Social relationships/leisure (4questions), social activities (3questions), Independence (2questions), control over life (2questions), freedom (1question), home and neighborhood (4questions), Psychological and emotional well-being (4questions), financial circumstances (4questions), religion and culture (2questions).

Scoring system:

For quality of life items, scores ranged from one to five as the following: Strongly agree (5), Agree (4), Neutral (3), Disagree (2), strongly disagree (1), then scores were converted to percentage to indicate quality of life for the studied elderly patients. Total scores were 170 grades for 34 questions and categorized into:

Good quality of life $\geq 60\%$

Poor quality of life $< 60\%$

2.5 Validity:

The developed tool will be formulated and submitted to five experts from Community Health Nursing and Gerontological nursing in Faculty of nursing in Helwan & Assiut University to review relevance of the tools for comprehensiveness, understanding and applicability.

2.6 Reliability:

Reliability of the tools was tested to determine the extent to which the questionnaire items related to each other. Cronbach's Alpha in this study found to be (0.89) for knowledge and (0.92) for quality of life.

2.6 Pilot study:

Pilot study has been conducted to test the clarity, applicability and understand ability of the tool. It has been conducted on 10% (8) of patients. The results of the pilot helped in refining the interview questionnaire and to schedule the time framework. The participants of the pilot were included in the main study sample.

2.7 Field work:

Data collection of the study was started at the beginning of feberaly 2019 until the end of July 2019. The investigator introduced herself to elderly patients, explained the aim of the study and its implications and how to fill in the knowledge questionnaire, and ensure their cooperation. Informed consent was obtained from the participants.

Interviewing the patients was carried out in specialized room in outpatient clinic at El-matareya Teaching Hospital (Cairo, Egypt). The questionnaire sheet takes about 15-20 minutes to complete. Data will be collected at 2 days (Sunday & Thursday from 9am to 2pm) every week within 6 months. The interviewing questionnaire sheet was completed by the investigator from each elderly patients.

2.8 Ethical consideration:

An official permission to conduct the proposed study was be obtained from the Scientific Research Ethics Committee at faculty of nursing Helwan university. Participation in the study is voluntary and subjects was be given complete full information about the study and their role before signing the informed consent. The ethical considerations was include explaining the purpose and nature of the study,

stating the possibility to withdraw at any time, confidentiality of the information were be guaranteed. Ethics, values, culture and beliefs were be respected.

2.9 Statistical analysis:

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC). Computerized data entry and Statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 24. Data were presented using descriptive statistics in the form of frequencies, percentages and Mean \pm SD. Chi-square test (X²) was used for comparisons between qualitative variables. Spearman correlation measures the strength and direction of association between two ranked variables.

Significant of the results:

Highly significant at p-value < 0.001

Statistically significant was considered at p-value < 0.05

Non- significant at p-value > 0.05

III- RESULTS

Table (1): show demographic characteristics of the study sample, 63.9% of the study sample were aged from 60 < 65 years with the mean age 62.83 \pm 7.34, 90.3% were males and 81.9% of them were married. 51.4% were don't read and write. Concerning the occupation 86.1% of them unemployed, 83.3% of them live in urban area, 100% of them monthly income not enough to cover expenses treatment, 76.4% of them live with his wife.

Figure (1): Illustrates that 80.0% of study sample had unsatisfactory knowledge about liver cirrhosis while 20.0% of them had satisfactory knowledge about liver cirrhosis.

Figure (2): Illustrate that 71.8% of the study sample had poor quality of life while 28.2% of them had good quality of life regarding liver cirrhosis.

Table (2): show that, there were highly statistically significant relation between total scores of Qol of studied sample and their age, place of residence, marital status, level of education and monthly income at (p = < 0.001).

Table (3): shows that, there were highly statistically significant relation between total scores of knowledge of studied sample and their age, level of education and monthly incomeat(p= <0.001).

Table (4): show that, there was highly significant positive correlation between total knowledge scores and total QOL scores regarding liver cirrhosis among the studied sampleat(p= <0.001)&(R=0,38).

Table (1): Demographic characteristics of the study sample (n=72).

Characteristics	No.	%
Age		
60<65	46	63.9
65<70	23	31.9
70<75	3	4.2
≥75	0	0.0
Mean ± SD62.83± 7.34		
Sex		
Male	65	90.3
Female	7	9.7
Marital status		
-Single	2	2.8
- Married	59	81.9
-Widow	9	12.5
-Divorced	2	2.8
Level of education		
-Don't read &write	37	51.4
- Read and write	10	13.9
- Basic education	10	13.9
- Secondary education	10	13.9
-University and more	5	6.9
Occupation		
-Employed	10	13.9
- Unemployed	62	86.1
Residence		
- Urban	60	83.3
-Rural	12	16.7
Monthly income		
-Enough to cover the expense treatment	0	0.0
-Not enough to cover the expense treatment	72	100.0
Residents at home		
-Live alone	15	20.9
-With wife	55	76.4
-With sons	2	2.7
-With Grandsons	0	0.0

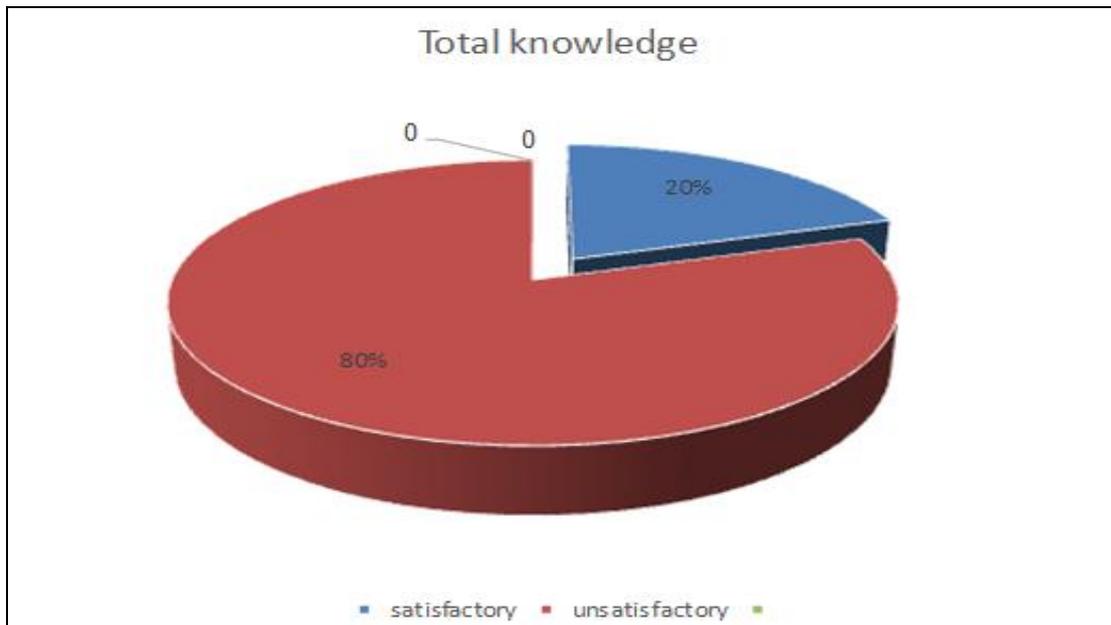


Figure (1): Total knowledge score of study sample about liver cirrhosis (n=72)

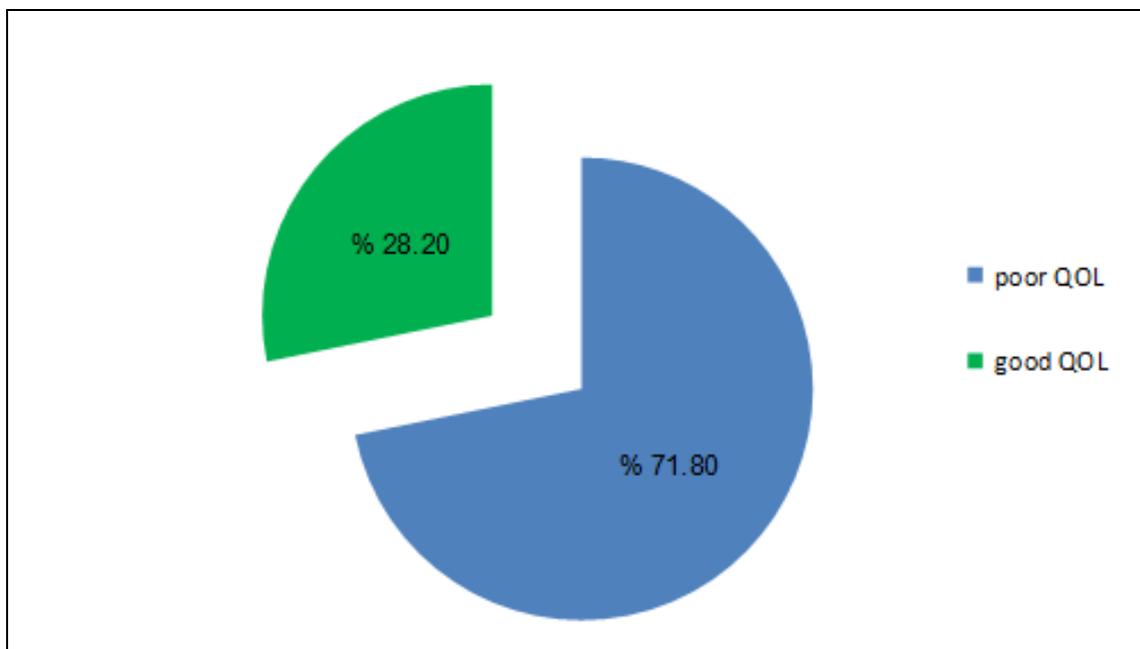


Figure (2): Total Quality of Life score for the study sample regarding liver cirrhosis (n=72)

Table (2): Relation between demographic characteristics of the study sample and QOL scores regarding liver cirrhosis (n=72)

demographic characteristics	Total QOL				χ^2	P
	Poor (n=52)		Good (n=20)			
	No.	%	No.	%		
Age					19.47	<0.001**
60<65	35	67.4	11	55.0		
65<70	15	28.8	8	40.0		
70<75	2	3.8	1	5.0		
≥75	0	0.0	0	0.0		
Sex:					1.003	0.32 NS
Male	47	90.4	18	90.0		
Female	5	9.6	2	10.0		
Residence:					15.97	<0.001**
Urban	45	86.6	15	75.0		
Rural	7	13.4	5	25.0		
Marital status:					17.42	<0.001**
Single	2	3.8	0.0	0.0		
Married	43	82.8	16	80.0		
Divorced	5	9.6	4	20.0		
Widow	2	3.8	0.0	0.0		
Level of education:					19.21	<0.001**
Don't read & don't write	34	65.3	3	15.0		
Read and write	9	17.2	1	5.0		
Basic education	5	9.7	5	25.0		
Secondary education	3	5.8	7	35.0		
University or more	1	2.0	4	20.0		
Monthly income					17.0	<0.001**
Enough to cover the expense treatment	0.0	0.0	0.0	0.0		
Not enough to cover the expense treatment	52	100.0	20	100.0	2	

() High statistically significant at $p < 0.01$**

(*) statistically significant at

$p \leq 0.05$

Table (3): Relation between demographic characteristics of the study sample and total knowledge scores regarding liver cirrhosis (n=72)

demographic characteristics	Total knowledge score				χ^2	P
	Satisfactory (n=15)		Unsatisfactory (n=57)			
	No.	%	No.	%		
Age					19.47	<0.001**
60<65	7	46.7	39	68.43		
65<70	5	33.3	18	31.57		
70<75	3	20.0	0	0.0		
≥75	0	0.0	0	0.0		
Sex:					1.003	0.32 NS
Male	10	66.7	55	96.4		
Female	5	33.3	2	3.6		
Residence:					3.418	0.64 NS
Urban	8	53.3	52	91.3		
Rural	7	46.7	5	8.7		
Marital status:					0.84	0.773 NS
Single	2	13.3	0.0	0.0		
Married	6	40.0	53	92.9		
Divorced	5	33.3	4	7.1		
Widow	2	13.3	0.0	0.0		
Level of education:					19.21	<0.001**
Don't read & don't write	3	20.0	34	59.8		
Read and write	3	20.0	7	12.3		
Basic education	4	26.7	6	10.2		
Secondary education	3	20.0	7	12.3		
University or more	2	13.3	3	5.4		
Monthly income					17.02	<0.001**
Enough to cover the expense treatment	0.0	0.0	0.0	0.0		
Not enough to cover the expense treatment	15	100.0	57	100.0		

(**) High statistically significant at p<0.01

(*) statistically significant at

p≤0.05

Table (4): Correlation between total knowledge scores and total QOL scores regarding liver cirrhosis among the studied sample (n=72).

Total QOL scores	Total knowledge scores				X ²	P
	Satisfactory (n=57)		Unsatisfactory (n=15)			
	No	%	No	%		
Poor (n= 52)	39	68.5	12	80	18.26	<0.001**
Good (n=20)	18	31.5	3	20		
R	0.38					

IV-DISCUSSION

Liver cirrhosis is a chronic disease that is characterized by the presence of fibrosis and regeneration of nodules in the liver whose consequences are the development of portal hypertension and liver failure. Cirrhosis arises from a wide variety of chronic diseases, which progresses slowly after years or decades. It may arise as a consequence of an exogenous toxic, infectious, autoimmune, vascular process, by deposition or an error of innate metabolism. Patients are primarily diagnosed when they are identified with alterations of the anatomy and liver function through clinical examination, biochemical tests, imaging and/or histological findings^[17].

Liver cirrhosis is a complication of many liver diseases. It is characterized by fibrosis and the conversion of normal liver architecture into structurally abnormal nodules. Intervention in liver cirrhosis includes avoiding further damage to the liver, treating the complications of liver cirrhosis, preventing liver cancer and/or detecting liver cancer early, and, in the later stages of the disease, liver transplantation^[18].

Liver cirrhosis is a major global cause of morbidity and mortality. The leading causes of liver cirrhosis are viral hepatitis B and C (HCV), harmful alcohol consumption and metabolic fatty liver disease associated with obesity and type2 diabetes. Individuals with cirrhosis are at risk of developing complications including ascites, hepatic encephalopathy, variceal hemorrhage and liver cancer. Liver cirrhosis is the fifth greatest cause of death in the United Kingdom, where the average age of death from liver disease is 60years, with large impacts on loss of

quality adjusted life years^[19].Therefore; this study was conducted to assess the quality of life of elderly patients with liver cirrhosis in the outpatient clinics.

Regarding to demographic characteristics of the studied sample, less than two thirds of study sample their age was 60<65with the mean of age was 62.83 ± 7.34 year. This result was in the same line with the result of study performed by **Kanwal et al.** ^[20] whose conducted a published study in Texas (USA) entitled as "Early outpatient follow-up and 30-day outcomes in patients hospitalized with cirrhosis" who stated that, nearly two thirds of study sample their age was 60<65with median age at diagnosis was 62.0 ± 8.9 year. From the investigator point of view, this result might be due to this age group considered high risk for liver cirrhosis.

Regarding to sex of the studied sample, the finding of the current study revealed that, most of the studied sample were male. These results were accordance with **Janani et al.** ^[21] whose conducted study in Indian with (study sample equal 149) and entitled as "Health-related quality of life in liver cirrhosis patients using SF-36 and CLDQ questionnaires" who found that, most of the studied sample were male. From the investigator point of view, these results might be due to bad habits as smoking and alcoholism in male more than females.

In relation to marital status, the finding of the current study revealed that, more than three quarters of the studied samples were married. These results were accordance with **Huang et al.** ^[22] whose conducted study in Taiwan entitled as "Health-promoting behaviors benefit the mental health of cirrhotic outpatients" and revealed that nearly three quarters of studied sample were married.

In relation to educational level of the studied sample, the finding of the current study revealed that, the minority of the studied samples were had university and more than half of them don't read &write. These results were accordance with **Zhu et al.** ^[23] whose conducted study in china with (study sample equal 114) and entitled as "Depression in patients with chronic hepatitis B and cirrhosis is closely associated with the severity of liver cirrhosis" who stated that, the minority of the studied samples were had university education. Also, these results agree with **ROSSI et al.** ^[24] whose conducted study in Brazil with (study sample equal 106) and entitled as "Psychometric property of fatigue severity scale and correlation with depression and quality of life in cirrhotic" who stated that, nearly half of the studied samples were don't read &write. From the investigator point of view, these results might be due to decrease awareness about the importance of education and custom of community.

Regarding to occupational status, the finding of the current study revealed that, most of the studied sample was unemployed. These result approved with the study performed by **Fagerström & Frisman**.^[25] Whose conducted study in south Sweden and entitled as "Living with liver cirrhosis: a vulnerable life" who found that, more than three quarters of the studied sample were unemployed. From the investigator view, these results related to altered of health of studied sample related to liver cirrhosis complications.

In relation to residence, the finding of the current study revealed that, more than three quarters of the studied sample were residences in urban. These finding are similar with the results of study performed by **Fagerström & Frisman**.^[25] Whose conducted study in south Sweden who found that, nearly three quarters of the studied sample were residences in urban.

Regarding to monthly income, the finding of the current study revealed that, all of the studied sample her monthly income not enough to cover the expenses of treatment. These result approved with the study performed by **Ahmed et al**.^[26] whose conducted a published study in tropical medicine and gastroenterology units at Zagazig University Hospitals in Egypt entitled as "Nutritional Status and Informational Needs for Patients with Liver Cirrhosis" whose stated that majority of the studied sample their monthly income not enough to cover the expenses of treatment. From the investigator point of view, these results might be due to high price of treatment and health insurance didn't cover expenses of treatment.

In relation to residents at home, the finding of the current study revealed that, more than three quarters of the studied sample were live accompanied with his wife. Also slightly more than one fifth of them were live alone. These finding are similar with the results of study performed by **Gaspar et al**.^[27] whose conducted study in Portugal with (study sample equal 177 patients) and entitled as "Predictive models of mortality and hospital readmission of patients with decompensate liver cirrhosis" who found that, nearly three quarter of the studied sample were live accompanied with wife. Also slightly more than one fifth of them were live alone. From the investigator point of view, these results might be due to majority patients with liver cirrhosis were inability to care themselves.

Concerning to total knowledge score of study sample about liver cirrhosis, the finding of the current study revealed that, more than three quarters of the studied sample were had unsatisfactory knowledge about liver cirrhosis. These result approved

with the study performed by **El-Shafiey**.^[28] whose conducted study in liver transplantation unit and out- patient's (clinic) in Gastro Enterology Center at Mansoura University in Egypt entitled as "Effect of Instructional Scheme for Patients undergoing liver transplantation Surgery on Their Performance" who found that, more than three quarters of the studied sample were had unsatisfactory knowledge about liver cirrhosis. From the investigator point of view, these results explain that most of study sample don't had essential knowledge about liver cirrhosis.

Concerning to total quality of life scores, the finding of the current study revealed that, nearly three quarters of the studied sample had poor quality of life. These results were accordance with the study performed by **Popović et al.**^[29] whose conducted study in Belgrade study entitled as "Quality of life in patients with chronic liver disease" whose mentioned that, three quarters of the studied sample had poor quality of life. From the investigator point of view, the majority of the studied sample can't manage the disease due to lack of knowledge regarding to the disease.

Regarding to the relation between demographic characteristics of the studied sample and their total quality of life regarding liver cirrhosis, the present study revealed that, there were highly statistical significant relation between quality of life of the studied sample and their age, level of education and monthly income. These finding agree with **Souza et al.** ^[30] conducted in Brazil study entitled as "Assessment of health-related quality of life and related factors in patients with chronic liver disease" whose mentioned that, there were highly statistical significant relation between quality of life of the studied sample and age, level of education and monthly income. From the investigator point of view, this could explain as quality of life was negative among elderly patient. Also quality of life was negative among studied sample who had low educational level and who had insufficient monthly income.

Regarding to the relation between demographic characteristics of the study sample and total knowledge scores regarding liver cirrhosis, the present study revealed that, there were highly statistically significant relation between total knowledge of the studied sample and their age, level of education and monthly income. On the other hand, there were no statistical significant relation with their sex, residence and marital status. This could be explained as, total knowledge score were lower among age group between 70<75. Also total knowledge score were lower among who had low educational level.

Moreover total knowledge score was lower among who had insufficient monthly income. These finding disagree with the study performed by **Ahmed et al.**^[25] Conducted in Egypt whose mentioned that, there were highly statistical significant relation between total knowledge of the studied sample and their age. Also, there were statistical significant relation between total knowledge of the studied sample and their marital status. On the other hand, there were no statistical significant relation with their sex, residence, educational level and monthly income. From the investigator point of view, these result may be due to study sample who old age had unsatisfactory knowledge about liver cirrhosis.

Regarding to the relation between total quality of life scores of the studied sample and their total knowledge scores regarding liver cirrhosis, the present study revealed that, there were highly statistical significant positive correlation between quality of life of the studied sample and total knowledge scores regarding liver cirrhosis. These results were accordance with **Alavinejad et al.**^[31] whose conducted study in hepatology outpatient clinic of Ahvaz Imam Hospital in Egypt entitled as "Efficacy of education, continuous monitoring and nutritional care on quality of life of cirrhotic patients and reducing of liver cirrhosis complications "They mentioned that, there were highly statistical significant positive correlation between quality of life of the studied sample and total knowledge scores regarding liver cirrhosis. From the investigator point of view, this result may be due to that satisfactory knowledge of patient with liver cirrhosis makes patients able to manage disease and improve quality of life.

V-CONCLUSION

On the light of results of the current study and answers of the research questions, it could be concluded that, there was 80.0% of study sample had unsatisfactory knowledge and 20.0% of them had satisfactory knowledge about liver cirrhosis. As regarded to study sample quality of life findings represent that, 71.8% of the study sample had poor quality of life. While 28.2% of them had good quality of life. Moreover, there were highly statistically significant relation between total scores of Qol of studied sample and their age, place of residence, marital status, level of education and monthly income. Also, there were highly statistically significant relation between total scores of knowledge of studied sample and their age, level of education and monthly income.

While there was highly significant positive correlation between total knowledge scores and total QOL scores regarding liver cirrhosis among the studied sample.

VI-RECOMMENDATION

On the light of results of the current study findings the following recommendations are suggested:

- ❖ Implementing educational program for elderly patients with liver cirrhosis about liver cirrhosis management.
- ❖ Disseminating health education booklets to increase elderly patients awareness about liver cirrhosis at outpatient clinics.
- ❖ Improve quality of life to patients with liver cirrhosis by encourage social activities.
- ❖ Further research on a large sample and other setting is needed.

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