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The Effect of Self-Care Management Program on Dealing with Stressors Perceived by Geriatric Patients with Chronic Liver Diseases

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Abstract:
Background: *Chronic liver diseases are one of the most prevalent gastrointestinal disorders among geriatric patients that significantly threat lives of its sufferers. Because of the chronic and irreversible nature of liver diseases, the geriatric patients need to be involved in self-care programs to enhance their dealing with disease-related stressors consequently, promote the level of their independence and sense of well-being.*
Objective: *To determine the effect of self-care management program on dealing with stressors perceived by geriatric patients with chronic liver diseases.*
Design*: A pre-experimental design (one group pre-test post-test study).*
Setting: *The study was carried out in the Liver & Gallbladder Unit and the Tropical Medicine Unit; at the Main University Hospital, Alexandria, Egypt.*
Subjects: *109 geriatric patients diagnosed with different chronic liver diseases for at least six months.*
Tools: *three tools were used for data collection: 1) Socio-demographic Characteristics and Clinical Data of the Geriatric Patients with Chronic Liver Diseases Structured Interview Schedule, 2) Stressors Perceived by Geriatric Patients with Chronic Liver Diseases Questionnaire, 3) Self-Care Knowledge and Practices of Geriatric patients with Chronic Liver Diseases Structured Interview Schedule.*
Results: *Financial stressors were the main stressors perceived by 95.8% of the study subjects. high statistically significant improvements in both self-care knowledge and self-care practices immediately after the application of the program were found, which started to slightly return back 6 weeks later, they still better than before the program. A significant correlation was found between self- care knowledge and self-care practices before the program and 6 weeks post-program, whereas they weren't significantly correlated immediately after the program application.*
Conclusion: *The application of self-care management program has a positive and significant impact on self-care knowledge and self-care practices of the studied geriatric patients with chronic liver diseases.*
Recommendations: *Incorporating the assessment of chronic liver diseases-related stressors into the routine nursing practices is essential for preparing a comprehensive nursing care plan in order to educate the patients about dealing with and adjusting to these stressors.*
Key words: *Chronic liver diseases; Self-care interventions; Geriatric patients; stressors; Gerontological nurses' role*

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I. Introduction

Chronic liver disease (CLD) is a disease process of the liver which encompasses of progressive destruction and regeneration of the parenchyma of the liver. CLD is "refers to disease of the liver which lasts over a period of six months" [(1).] Elderly persons are more liable to develop a variety of chronic liver pathologies, which lead to a marked increase morbidity and mortality in this population. These pathologies include bilharzias, chronic viral hepatitis such as hepatitis B and hepatitis C, alcoholic liver disease, non-alcoholic fatty liver disease, prolonged biliary obstruction, chronic autoimmune hepatitis, idiopathic hemochromatosis, Alpha-1-antitrypsin deficiency, and hepatocellular carcinoma. The end result of these multiple chronic liver diseases (CLDs) is cirrhosis [(2, 3)]. Liver cirrhosis is a condition in which the liver progressively loses its function due to long-term damage. This damage is characterized by fibrosis and architectural distortion of the liver with formation of regenerative nodules. Typically, it develops slowly over months or years and can have various clinical manifestations and complications [(3, 4)]. Geriatric patients with liver cirrhosis are at prodigious risk for to be hospitalized and nearly one third of those patients readmitted within one month [(5)].

The rates of CLDs are progressively increasing over the years. In the UK, the National Statistics reported that CLDs have been ranked as the fifth most common cause of death [(6)]. In US, CLDs are predictable as the second leading cause of mortality among all gastrointestinal disorders [(7)]. In Egypt, the latest WHO data published in 2014, deaths from CLDs reached 8.92% of total deaths. The age adjusted death rate is 67.54 per 100,000 population ranks Egypt the second in the world [(8)] .The second leading cause of deaths in Egypt is CLDs this is after sever cardiac diseases especially that may lead to cardiac cirrhosis associated with ascites and hepatomegaly. CLDs account for almost 10% of overall mortality in the country [(9)].

The most common types of CLDs in aging population are chronic viral hepatitis especially Hepatitis C Virus (HCV) and Non-Alcoholic Fatty Liver Disease (NAFLD) [(10)]. HCV is a blood born disease and it is a chronic infection results in continuous inflammation of the liver, consequently, fibrosis cirrhosis, and possible hepatocellular carcinoma [(11)]. HCV is a major worldwide health problem; in 2015, it affects about 142 million persons aged more than 65 years [(12)]. In Egypt, epidemiological studies reported a high prevalence and incidence of HCV, particularly within geriatric patients residing rural areas endemic for schistosomiasis [(13)]. Schistosomiasis was traditionally the most significant public health problem and it is considered as the primary source of CLDs. Co-infections with schistosomiasis make the liver more diseased than infection with HCV alone this is due to schistosomiasis cause disturbances in the responses of HCV- specific T- cell resulting in increased viral load and rapid progression of complications in co-infected patients [(14).]

Non-Alcoholic Fatty Liver Disease (NAFLD) is a non-alcoholic hepatitis. It affects people with either little or no history of alcohol consumption [(15)]. In USA, NAFLD is recognized as the third most common cause of liver diseases NAFLD is more common among aging population especially older females, obese persons, and patients with diabetes mellitus and/or hypertension [(16)]. With the passage of time, symptoms typical of chronic hepatitis may develop. Consequently, inflammation of the liver, fibrosis, and liver cell death may be a result and 9% to 25% of affected persons may develop cirrhosis [(17)].

Although the most liver functions in advanced age seem to be well-conserved, some changes in liver morphology and physiology occur with aging [(18)]. These changes include gradual reduction in liver's volume and blood flow by 20–40%; this is due to decrease in blood flow in the liver which expected to be decreased by 35% [(19)]. Additionally, slight decrease in the concentration of serum albumin or maintained to the normal level, gradual increase in high-density lipoprotein cholesterol, and neutral fat levels, meanwhile, the metabolism of the low-density lipoprotein cholesterol decreases by 35%. The level of serum alkaline phosphatase is also elevated and the serum bilirubin is gradually reduced with aging [(18, 19)]. Moreover, drug metabolism, hepatobiliary function and the ability to respond to injury especially regenerate following injury are altered as persons get older [(20)]. These changes and alterations may result in many differences in clinical course and dealing with CLDs related-stressors in Geriatric patients [(18)].

In geriatric patients, CLD is associated with poor prognosis and places major physical, mental, psychological, social, spiritual, and economic stressors on patients' health. These stressors negatively affect their daily life, their families, and society overall [(21)]. Regarding physical stressors, patients may experience general fatigue which often associates with sleep disturbances, abdominal discomfort and pain, nausea and/or vomiting, loss of appetite. Furthermore swelling in the legs and ankles, itchy skin, yellow skin and eye, dark urine, pale or bloody stool, tendency to bruise easily, and anemia also perceived by those patients. These physical stressors have a massive impact on elderly patient's well-being and leads to a considerable and significant reduction in their functional status [(18, 21)].

As regard mental stressors perceived by geriatric patients with CLDs, cognitive symptoms such as memory, concentration, judgment, and communication problems are more observable in patients with advanced forms of CLDs. This is result from hepatic encephalopathy [(22)]. Psychological stressors can be as distressing as physical symptoms and including depressive symptoms anxiety, self- esteem reduction, and diminished sense of control over stressful situations. Additionally, despair, anger, and tenacious hopelessness. During treatment course, neuropsychiatric toxicity may be occurring and the preexisting symptoms may get worse or impair the activities of daily livings [(23)].

In relation to perceived social stressors, geriatric sufferers feel that they embarrassed about how they look in public, feel that some people avoid them, and feel that they flawed and incomplete. This make them act irritable toward others, isolate themselves from people around, lack of companionship. All these stressors may adversely affect patients' social roles, interactions, work, and the ability to dealing with day life events [(24)]. CLDs significantly affect sense of meaning in one's life, satisfaction, peacefulness, and strength in one's spiritual beliefs. Impaired spirituality and faith decrease survival rate of those patients [(23)]. CLDs may be associated with considerable economic stressors such as the cost of long-term hospitalization, medications and treatment regimen, liver transplantation, investigations and immunizations, and follow-up programs. This put unreasonable and excessive demands on patients, their families and friends, different health care settings, and even communities [(25)].

Numerous valuable underutilized treatment strategies are available to help in the management and control of perceived stressors facing geriatric patients with CLDs, all of which have three chief goals; first to prevent complications, second to prolong life, and third to cope with disease symptoms [(26)]. Hence, effective management, requires that patients be educated on why and how to participate in self-manage their symptoms and disease-related issues on a routine base [(27)]. In CLDs, Patient self-care is a key component of effective management of the disease symptoms and improved patient outcomes. Self-care goes beyond traditional knowledge-based patient education to include processes that develop patient problem-solving skills, build self-confidence to make decision, , and dealing with CLDs' stressors and application of knowledge in their real-life situations [(28)]. By lacking effective self-care strategies, dealing with the stressors of the disease's day to day circumstances become more difficult and may leave the patients feeling overwhelmed in general and can worsen symptoms related to the disease [(29)].

In this regard, the gerontological nurse plays a key role for both the client and his or her family members or primary caregiver. This role is directed toward certain educational interventions in order to improving compliance with therapeutic regimen, modifying lifestyle behaviors that are regularly not considered by treating physicians, and coping with CLDs related-stressors [(30)]. The gerontological nurse's goal is to help patients regain the ability to meet their own needs and to sustain independent living for as long as they can [(31)]. The most significant areas for educational interventions include follow healthy diet and demonstrate maintenance of body weight, exercise program, adherence to prescribed medications, skin care, edema care, methods of energy conservation and the necessity of adequate rest, adequate hydration, no secondary infections, and no further complications. Additionally, keeping follow-up appointments and necessary sanitation measures may help reduce the rate of re-hospitalization for CLDs geriatric patients [(32)].

In spite of the importance of CLDs as public health issue, the nurses don't focusing on learn CLDs' patient self-care strategies compared with other chronic illnesses, especially diabetes mellitus, heart failure, and chronic obstructive pulmonary diseases. Therefore, there is an urgent need to further studies to recognize the effectiveness of patient education in enhancing CLDs geriatric patients' dealing with perceived related-stressors through self-management program [(30)].

Aim of the study

The aim of this study is to: determine the effect of self-care management program on dealing with stressors perceived by geriatric patients with chronic liver diseases.

Research Hypothesis:

Geriatric patients with chronic liver diseases deal effectively with disease-related stressors after the implementation of the proposed self-care management program than before.

II. Materials And Method

2.1. MATERIALS

Design: The study followed a pre-experimental design (one group pre-test post-test study).

Setting: The study was conducted in two internal medicine units namely; Liver & Gallbladder unit and Tropical Medicine unit. These units affiliated to the Main University Hospital, Alexandria, Egypt.

Subjects: The study included a convenience sample of one hundred and nine (109) older adults diagnosed with different chronic liver diseases for at least six months, admitted to the previously mentioned units for receive the suitable treatment , available during the period of data collection, and fulfilling the following criteria:

- Aged 60 years and more.
- Have chronic liver diseases for at least 6 months [(1)].
- Able to communicate effectively.

The sample size was estimated using the EPI info 7.0 program based on these parameters; population size: 333 over three months, expected frequency: 50%, acceptable error: 10%, confidence coefficient: 95%, design effect: 1, the minimum sample size was 109.

- From Liver & Gallbladder unit, 66 geriatric patients (46 male and 20 female).
- From Tropical Medicine unit, 43 geriatric patients (23 male and 20 female).

2.2. Tools:

Tool I: Socio demographic Characteristics and Clinical Data of Geriatric Patients with Chronic Liver Diseases Structured Interview Schedule:

It was developed by the researcher based on review of the relevant literature to elicit the following information:-

1: Socio-demographic characteristics of the geriatric patients such as sex, age, education background, marital status, number of children, occupation before retirement, monthly income and its sources, place of residence, and persons with whom they live and their relation to the patients.
2: Health profile of the geriatric patients includes other medical disorders, medications consumed, and assisting devices used.
3: Data on chronic liver disease such as its onset and duration, the expected causes, regularly taking the liver medications, periodically following and checking up. Additionally, have the patients ever had a hepatic coma?, and does the disease hinder their ability to perform daily life activities?.

Tool II: Stressors Perceived By Geriatric Patients with Chronic Liver Diseases Questionnaire

This tool was developed by the researcher; it consists of a seventy five (75) self-reported question used to measure the different perceived stressors associated with chronic liver diseases among the study subjects during the last month. These questions cover 7 parts as follows:-

Part 1: 30 questions related to perceived physical stressors such as bodily pain, itchy skin, GIT upset, dizziness, edema, ascites, insomnia, and bleeding.

Part 2: 8 questions related to how much do the effects of chronic liver disease bothered the patient in each of the following areas: fluid and dietary restrictions, their ability to work inside and outside the home, and their sex life.

Part 3: 10 questions about perceived cognitive and mental stressors such as difficulty concentration and attention, confusion, difficulty reasoning and solving problems.

Part 4: 7 questions related to perceived psychological stressors as frustration, worry, and hopeless.

Part 5: 10 questions related to perceived social stressors such as isolation from others, avoid doing some things in public, and feeling flawed and incomplete.

Part 6: 5 questions related to perceived spiritual stressors as dissatisfaction and inability to practice their religious rituals.

Part 7: 5 questions related to perceived economic stressors such as the ability to buy drugs and commitment to periodic check-up.

Each participant was asked to respond to all questions using a four (4) point likert-type scale: 0 = never had this stressor, 1 = some time, 3 = often, 4 = always had this stressor. The total scores were calculated for each subject then transferred into percentage based on maximum allowed scores.

Tool III: Self-care Knowledge and Practices of Geriatric Patients with Chronic Liver Diseases Structured Interview Schedule

This tool was designed by the researcher. It is a twenty four (24) question that cover items concerning self-care knowledge and practices of geriatric patients with chronic liver diseases. Self-care knowledge comprised 7 questions related to liver function, age related changes in liver, the expected causes of chronic liver disease, complications and warning signs, and its treatment. Self-care practices consist of 17 questions related to how to manage one's functional activities, sleep problems, and physical, mental, psychological, social, spiritual, and economic stressors-related CLDs.

The correct response equal one (1) and incorrect answers or don't know equal zero (0). The total scores were calculated for each subject then transferred into percentage based on maximum allowed scores.

2.3. METHOD

- An official approval letter was issued from the Faculty of Nursing Alexandria University to the director of the Main University Hospital to obtain permission to conduct the study. Approval from the heads of Liver & Gallbladder unit and Tropical Medicine unit and each nursing supervisor was obtained in order to facilitate the process of data collection. Then, the purpose of the study and schedule of data collection were clarified.
- Tool I, tool II, and tool III were designed by the researcher based on review of related literature. The Arabic versions of these tools were validated by juries of (5) experts in the related field.
- A pilot study was carried out on 11 geriatric patients with chronic liver disease selected from the study setting. They were not included in the study sample. It was done in order to test the relevance, clarity, and feasibility of the tools, also to estimate the time required for the interview.
- The proposed self-care program was developed by the researcher based on reviewing the most recent related literature. It covered items related to the required knowledge and skills for self-care of geriatric patients with chronic liver diseases. Self-care knowledge comprised information about liver function, age related changes in liver, the expected causes of chronic liver disease, complications and warning signs, and its treatment. Self-care practices consists of skills for managing one's functional activities, physical exercises, chest pain and shortness of breath, GIT upset, ascites, edema, bleeding, dental problem, skin

problems, diet, prescribed medication. Also, protection from infection, adaptation with fluid and electrolytes imbalance, and sleep problems. Additionally, managing mental, psychological, social, spiritual, and economic problems.

- Geriatric patients who fulfilled the inclusion criteria were interviewed individually by the researcher in each selected unit in the presence or absence of family members using tools from I to III. Each interview took approximately 30-45 minutes, depending on the participants' level of understanding and cooperation. Collection of initial data covered a period of two months and half, from the mid of December 2016 till the end of February 2017.
- The telephone number of each participant was taken in order to arrange for program's sessions.
- After two weeks from participants' discharge, the proposed program conducted on group bases of 12 groups in total (11 groups with 9 geriatric patients in each group and 1 group 10 patients), 30-45 minutes/session, twice/week. The sessions were carried out in the waiting area of the outpatient clinics. At the end of each session, the researcher either leaved the session with unanswered question or asked the patients to apply certain activities that were discussed during the session. Also, the important points in the previous session were summarized.
- The total number of sessions was 168 sessions, 14 sessions per each group. This phase covered a period from the beginning of March 2017 till the end of April 2018.
- Teaching methods included interactive lectures, group discussion, role-playing, brainstorming, demonstration and re- demonstration, models, pictures, and problem solving.
- - Handout contains illustrative colored pictures and the main points of each session were designed by the researcher to clarify the desired knowledge and skills for the study subjects. Action plan calendar were prepared and given to each participant to identify obstacles hinder the achievement of needed goals.
- To evaluate the effectiveness of the proposed program, reassessment of each participant was done two times, the first immediately after the implementation of the program and the second after sixth weeks. The second assessment outcomes were determined during 3 months evaluation from the beginning of May 2018 to the end of July 2018. Then, the difference between pre- interventions and post-interventions scores was determined through using the proper statistical analysis.
- The total period of data collection, including the three phases covered a period of 19 months and a half, from the mid of December 2016 till the end of July 2018.

Ethical considerations:

Informed witness consent was obtained from each participant after clarification of the study purpose. Participants were assured that their responses will be kept anonymous. Also, confidentiality of the collected data was maintained. Each participant was informed that participation in the study is voluntary and he/she has the right to withdraw at any time.

Limitation of the study:

Nine (9) geriatric patients were died and four (4) patients were out of reach. Those were replaced by others fulfilling the study inclusion criteria in order to maintain the sample size.

Statistical analysis of the data

The collected data were coded and analyzed using PC with the Statistical Package for Social Sciences (SPSS version 20). Tabulated frequency and percentages were calculated. Descriptive statistics as frequency, distribution, mean, and standard deviation were used to describe different characteristics. The Chi-square test was used for testing relationship between categorical variables. Univariate analyses, including: the one-way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of two or more independent groups (F Test). The Friedman test as non-parametric test alternative to one-way ANOVA with repeated measures; it is used to test for differences between groups when the dependent variable being measured is ordinal. It used to test the significance of results of quantitative variables of abnormal distribution. Significant difference was considered if $p \leq 0.05$.

III. Results

Table (1) illustrates that the age of the study subjects ranged from 60 to 85 years with a mean of 66.3±6.3 years. Geriatric patients in the age group of 60 years to less than 70 years represented by more than two thirds (70.7%) of all studied CLDs geriatric patients. 63.3% of them were males, 60.5% were married. Illiteracy was prevailing among 75.2% of the study subjects, 45.1% were both manual and technical workers i.e. Farmer, carpenter, tailor, builder, or driver, followed by 35.3% were house wives, The majority of the study subjects (89.0%) reported that their monthly income was not enough, Pension was the major source of their

income (55.1%). 42.0% of the study subjects have more than 4 children, more than two thirds of the study subjects were living in Urban (67.0%), 40.4% lived with their family members or relatives.

Table (2) shows that the duration of being diagnosed with CLDs ranges from less than 5 years to 20 years with a mean duration of 5.5±3.9 years. More than one half of the study subjects (56.0%) were diagnosed with CLDs for less than 5 years. As for the expected causes of CLDs, Hepatitis C virus is the main cause among 62.4% of the study subjects followed by prolonged biliary obstruction (34.9%) and bilharzias (33.9%).

More than two fifth of the study subjects (46.8%) didn't take medications for CLDs regularly because they didn't aware of having the diseases (39.2%), high cost of medications 39.2%), the side effects of medications (15.4%), and presence of multiple medical disorders (15.4%). 62.4% of the study subjects did follow and checkups for CLDs periodically and the rest didn't (37.7%); this due to the high cost of laboratory investigations requested and high cost of transportations (100.0%).

This table also reflects that around two fifths (39.4%) of the study subjects had hepatic coma since being diagnosed with CLDs with a mean of 3.8 ±2.8 times and 1.7 ±1.0 times since last four weeks. Additionally, since the study subjects were being diagnosed with CLDs, 36.7% of them were partially dependent in their activity of daily life and 45.0% of them were totally unable to perform instrumental activities of daily living.

Concerning the presence of co-morbidities other than CLDs that the study subjects have, 85.7% of them have hypertension, coronary artery diseases, and heart failure. This followed by diabetes mellitus 50.6%, renal disorders 27.3%, while, 23.4% and 22.1% of them suffered from either musculoskeletal disorders such as osteoporosis and osteoarthritis or respiratory disorders as COPD and bronchial asthma respectively. Cancers were reported by 19.5% of the study subjects

Figure (1) clarifies that the financial stressors were the main CLDs-related stressors perceived by 95.8% the study subjects; this is followed by psychological stressors 80.7%, spiritual stressors 70.6%, and social stressors 70.1%. The study subjects who have daily life stressors as fluid and dietary restrictions, inability to work inside and outside the home, and difficulty in their sex life were constituted 61.6%. This figure also indicates that more than one half of the study subjects (57.1%) have physical stressors such as bodily pain, itchy skin, GIT upset, dizziness, edema, ascites, and bleeding, while, 53.3% and 42.0% of them reported that they have sleep-related stressors and mental stressors respectively.

Table (3) denotes that the highest mean score of social stressors (72.5±18.1) was obtained by the study subjects in age group of 60 years to less than 70 years and the difference was statistically significant (F= 3.296, P=.041*. Regarding the level of education of the study subjects, the highest mean score of mental stressors (83.3±33.3) was obtained by those who have higher education and the variance was statistically significant (F= 2.584, P= 041*).

It also observed from this table that the married study subjects were reported the highest mean score of stressors in their daily life (66.0±18.8) and the relation was statistically significant (F= 3.895, P= 011*0), while, those who have one to two children were reported the highest mental stressors (51.3±34.3) and the difference was statistically significant . Additionally, those who haven't children were reported the highest mean score of psychological stressors (97.8±22.4) and the relation was statistically significant F= 5.141, P= .002*.

As regards the occupation before retirement, the study subjects who were manual workers reported the highest physical stressors (60.3±13.6) and psychological stressors (93.0±19.1) with statistical significant differences (F= 2.691, P= .035*) and (F= 3.414, P= .012*) respectively. Moreover, the highest mental stressors was prevailing among those who didn't work and the variance was statistically significant (F=3.410, P= .012*. The study subjects with not enough monthly income reported the highest financial, psychological, and physical stressors (97.1±9.1, 82.6±19.1, and 58.0±12.8) and the relations were highly statistically significant (F=9.079, P= <0.001*, F= 4.796, P=.010*, and F= 3.003, P= .054* respectively. This table also illustrates that those who living with Husband/Wife reported the highest stressors in their daily life (66.2±21.7) and the difference is statistically significant (F= 2.728, P= .048*.

Table (4) indicates that the presence of co-morbidities other than CLDs among the study subjects was significantly correlated to physical stressors (F= 8.137, P= .005*). The study subject who being diagnosed with CLD from 5 to less than 10 years were obtained the highest levels of spiritual and daily life stressors (77.8±17.6 and 66.1±17.9) respectively and the variance is statistically significant (F= 3.280, P= .024* and F= 3.663, P= .015*) respectively. Moreover, the study subjects who didn't take medications for CLDs regularly were reported high levels of psychological, spiritual, and daily life stressors (86.4±19.3, 75.9±19.5, and 66.0±18.6) respectively and the relations was statistically significant (F=8.447, P= .004*, 4.910, P= .029*, and F= 5.565, P= .020*) respectively.

This table also reflects that the incidence of hepatic coma among the study subjects was highly significantly correlated to mental, social, and physical stressors-related CLDs (F= 15.343, P= <0.001*, F= 9.449, P= .003*, and F= 8.421, P= .005*.

Going back to this table, it found that there was highly significant relation between the effect of CLDs on the study subjects' ability to perform their activity of daily livings and psychological, spiritual, social, physical, daily life, and financial stressors (F= 11.641, P= <0.001*, F= 23.249, P= <0.001*, F= 8.822, P= <0.001*, F= 11.102, P= <0.001*, F= 3.281, P= 041*, and F= 2.934, P= .058*) respectively. The same was observed for the study subjects' ability to perform the instrumental activities of daily livings (F= 6.528, P= <0.001* for psychological stressors, F= 11.023, P= <0.001* for spiritual stressors, F= 6.102, P= <0.001* for physical stressors, F=5.016, P= .003* for daily life stressors, and F= 3.769, P= .013* for social stressors.

Table (5) shows that there was significant improvement in self-care knowledge of the study subjects immediately after the implementation of self-care management program (97.5±4.8) in comparison to its level before the program (9.8±14.9) and the difference was highly significant P= ≤0.001*.

After six weeks from the last session of the self-care management program, the self-care knowledge of the study subjects was still significantly improved (59.7±12.1) in comparison to its level prior the implementation of the program (9.8±14.9) and the variance was statistically significant P= ≤0.001*. Furthermore, the mean percent score of self-care knowledge was started to slightly decrease after six weeks (59.7±12.1) if compared to its level immediately after the implementation of the program (97.5±4.8).

Table (6) reflects that immediately after the implementation of the program, the mean percent score of the study subjects' self-care practices related to dealing with CLDs-related stressors was significantly improved (92.1±5.9) in comparison to its level prior the implementation of the program (9.0±12.8) with statistically significant difference P= ≤0.001*.

Additionally, after six weeks from the end of the program, the mean percent score of self-care practices was still significantly improved (53.2±13.8) in comparison to its level pre-program (9.0±12.8) and the difference was statistically significant P= ≤0.001*. After six weeks, the mean percent score of self-care practices of the study subjects was slightly returned back (53.2±13.8) in comparison to its level immediately after the application of the program (92.1±5.9).

Table (7) illustrates that self-care knowledge of the study subjects was significantly correlated with their self-care practices prior the application of self-care management program and six weeks post-program (F= 10.490, P= <0.001* and F= 1.802, P= 0.058*) respectively. While, there wasn't a significant correlation between self-care knowledge and self-care practices immediately after the application of the program (F= .222, P= .881).

IV. Discussion

Indeed geriatric patients with CLDs have multiple comorbid medical conditions, several disabling symptoms, complex therapeutic regimen, and limited self-care management skills. In this context, dealing with and management of CLDs-related stressors refer to the CLDs sufferers are living with the disease rather than dying from it [21, 33]. This can be accomplished through an integrated approach to patient care, in which a cooperative multidisciplinary health team of physician, nurse, nutritionist, and socialist must be established [34].

Nursing literature indicates that patient teaching about strategies of self-care management in chronic illnesses is crucial part of nursing practices [35]. The proposed self-care management program focused on measuring the effect of patients' teaching on their level of knowledge and practices in management of their condition. Relatively little published studies concerning the effectiveness of such programs on health condition of geriatric patients with CLDs by reflection of patients gained knowledge and practice on their dealing with and managing of disease-related stressors [36]; the current study sought to confirm this hypothesis.

Results of the present study revealed that more than two thirds of the geriatric patients with CLDs were in the age group 60 years to less than 70 years; this may be due to the fact that liver has the ability to compensate until more than 10% of total liver functions are altered, so, symptoms tend to exacerbate in the later stages resulting in an increase in the mortality rate among aged patients. This is supported by literature that the advanced age is associated with gradual alteration of hepatic structure and function as well as several changes in liver cells which increase the liability to develop various complicated and fatal liver diseases [18]. CLDs are reported by more males than females. This is in agreement with Sagnelli et al. [37] who indicated that gender plays a significant role in CLDs progression; male sex has been identified as an independent predictor of a more severe form.

With reference to health status of the study subjects, it was found that hepatitis C virus is the main expected cause of CLDs among them. This can be justified by the fact of high prevalence of hepatitis C virus in Egypt as reported by national literature [9]; this result agrees with Wolf et al. [38] who reported that the most common causes of CLDs in United States is hepatitis C (26%), alcoholic liver disease (21%), and hepatitis C plus alcoholic liver disease (15%). While according to previous study done in USA by Scaglione et al. [39] who indicated that the main cause of CLDs was chronic alcoholism. Additionally, prolonged biliary obstruction and bilharzias were the second leading causes of CLDs among the present study subjects this is because one third of

them residing in rural areas and reported that they were used to swim, wash their pots and clothes, and fishing in the canal.

CLDs cause generous health and economic stressors. In this context, financial issues were the main CLDs-related stressors perceived by the vast majority of the study subjects; they grumbled that their monthly income wasn't sufficient to meet the disease's requirements such as buy medications and healthy diet, perform the medical tests needed to track the progression of the disease and periodic check-ups, in addition to the need to frequent hospitalization. The findings of the current study also indicated that there were highly significant relations between activities of daily living, monthly income and financial stressors perceived by CLDs sufferers (table 3 and 4). Similar supporting study finding showed that the annual health expenditures, costs for prescription medications and utilization of health care services were over 4 times greater in CLDs patients than those with no CLDs [(40, 41)].

CLDs have a profound adverse impact on physical, mental, psycho-social, and spiritual well-being (21). The results of the present study revealed that more than three quarters of the study subjects suffer from psychological stressors; this is may be due to the chronic nature of the condition which associated with negative emotional feelings such as frustration, worries, and hopelessness. In this study, CLDs patients who haven't children and unable to perform their activities of daily living independently obtained the greatest mean scores of psychological stressors with significant relations between these variables (table 3 and 4). This result is similar to one study done in France by Castera et al. [(42)] who found that a substantial psychological burden was found among CLDs sufferers.

In relation to social stressors perceived by more than two thirds of the study subjects, they reported that they preferred to stay at their homes and try to isolate themselves from others. The cause for this result may be that they are always tired and because they are repulsed with their appearance in which itchy body, ascites, and edema. Hence, they feel that they are defective or deficient. In addition to, multiple social losses associated with the aging process such as widowhood, retirement, income reduction (table 1) subsequently, they are lacked companionship and couldn't resort to anyone. The same result was reflected by Orr et al. [(43)]. The findings of the current study also revealed that there were significant relations between age, the ability to perform activities of daily living and social stressors perceived by CLDs sufferers (table 3 and 4).

These social stressors are linked to the negative spiritual life of the CLDs patients in which more than two thirds of them reported that since being diagnosed with CLDs, they couldn't longer accept the disease and they couldn't make a commitment to perform religious rituals. Moreover, they no longer feel satisfied with their life and they no longer believe in their condition. This goes hand to hand with the finding of the present study which indicates that there was a significant relation between long duration of the disease, not taking medication regularly, dependency level, and spiritual stressors perceived by the study subjects (table 4). This result was supported by the results of one study conducted in Dakahlia, Egypt by El-Gilany et al. [(44)] who indicated that spiritual domain of the quality of life (QOL) of CLDs geriatric patients is altered because of their condition as well as the other QOL's domains. This is in contrary with Tannous (2012) [(45)] who stated that as a result of HCV, the majority of geriatric patients are increased their religious rituals.

Concerning physical stressors perceived by the study subjects, more than one half of them complained of GIT problems as nausea, vomiting, anorexia, diarrhea or constipation, and weight loss. This occurs as a result of the alteration of metabolism, malabsorption, indigestion, and bacterial overgrowth associated with CLDs. Furthermore, they reported dyspnea, orthopnea, and hemoptysis; which lead to fatigue and impaired their functional ability. This is due to compression of the lungs by ascites and hepatomegaly. Additionally, the study subjects suffered from edema, bleeding from nose and gum, and esophageal variceal bleeding, all of that is because of decreased coagulation factors production and increased portal hypertension that the CLDs patients have. They also reported itchy skin, dry mouth, and jaundice; this is may be due to increase bilirubin level, hormonal metabolism, and the disturbance in fluid and electrolyte balance. Moreover, they reported that they have frequent episodes of influenza and chest infection; this is because the possible decrease in their immunity function that accompanied with CLDs. All of these findings are congruent with a plethora of studies [(46-49)]. In this study, Physical stressors perceived by the study subjects were significantly related with the type of their work, their monthly income, the presence of comorbidities, and activities of their daily living (table 3 and 4).

In respect to CLDs' mental stressors, the cognitive or mental symptoms may be developed even in patients with early-stage CLDs [(22)]. This is supported by the result of the current study in which more than two fifths of the study subjects reported memory and concentration problems; also they had problems in keeping their attention in any work they've been doing for a long time. In addition to, slow reactions, they had difficulty reasoning and had trouble in problem solving. This result can be rationalized by two reasons; first, the common sleep abnormalities among the study subjects which exacerbate the mental symptoms; more than one half of them reported that they had a problem in staying awake during the day or didn't take a nap during the day, and didn't get the amount of sleep that they need. This may because of bodily pain, physical inactivity, and respiratory problems that the CLDs patients have. This finding was in agreement with Newton et al. [(21)].

The second cause for cognitive problems in those patients may be related to the minimal hepatic encephalopathy associated with CLDs. that may occur as a result from accumulation of ammonia in blood circulation; this occurs when the liver fails to break down toxins properly; the current study also reflected that 39.4% of CLDs patients had hepatic coma since being diagnosed with this condition. This may explained by that; more than two fifth of the study subjects reported that they had different CLDs for five years to 20 years, this resulting in liver cirrhosis; in which hepatic encephalopathy is a common consequence and one of the most disturbing manifestations of CLDs. This finding was in the line with the findings of a study done by Vilstrup et al. [(50)] and consistent with Adekanle [(51)] who stated that patients with liver cirrhosis with minimal hepatic encephalopathy exhibited poor psychomotor function, attention and concentration impairment, memory impairment, and language abnormalities when compared with normal control subjects.

It is crucial to progress knowledge and practices of elderly patients with CLDs in dealing with and managing of disease-related stressors. This is through educating those patients about their state of health, the significance of care, various alternative forms of coping, and its effects. The effective patient education should be developed in a more patient-oriented direction. This can be accomplished through self-care management programs [(52)]. The basic feature of self-care management of long-term illnesses is that individuals contribute efficiently in dealing with their own health care on a continuing base. In this respect, The Self Care Forum's describe self-Care as "The ways that person's behalf for themselves in order to protect, keep and improve their health condition and well-being" [(53, 54)]. In the present study, it was not intended to reduce the severity of CLDs' symptoms after the implementation of the proposed self-care management interventions. However, the positive change occurred in the ways of patients' managing disease-related stressors.

In this respect, prominent finding in this study was that the studied patients reported low a mean percent score of knowledge about dealing and coping with CLDs-related stressors ((9.8±14.9) at the initial evaluation. The reason suggested by the researcher is that more than three quarters of the studied patients were illiterate and more than two fifths of them were both manual and technical workers i.e. Farmers, carpenter, tailors, builders, or drivers. Those illiterate or with low educational level have no or little awareness about measures to protect themselves from different liver viral infections such as hepatitis A, B, and C viruses and required immunizations, also, the presence of bad habits among those patients as poor hygienic care, ignorance therapeutic regimen, and lack of concern about seeking medical help. Additionally, the researcher observe that the patients were received inadequate information about their condition during hospitalization period, this is may be due to the shortage of nursing staff and their work-related stressors or increased number of geriatric inpatients. This finding is in the same line with the study done by Fedeli et al. [(55)]; they have reported that gastrointestinal diseases especially liver disorders were shown to be higher among patients with low educational level and manual workers than those with high education and employees.

Fortunately, a significant progress in patients' knowledge was observed among the studied patients ((97.5±4.8) directly after the implementation of the proposed self-care management strategies. This improvement may be due to the researcher has used a developed, organized, and structured teaching program which comprised inclusive and illustrated printed material with clear identified goals. These goals divided on 14 sessions; each session has a set of specific objectives and illustrated colored pictures to cover the important instructional points related to liver function, age related changes in liver, the expected causes of CLDs and its related clinical manifestations, complications, warning signs and its treatment. In addition to, the importance of eating healthy diet and performing physical exercises, managing one's medications, and improving sleeping pattern. This is helping the patients to understand and master their condition. The another possible cause for improvement of CLDs patients' knowledge, may be the commitment of the study subjects to the proposed self-care management sessions that guided, motivated, and admired by the researcher; this may result from to what extent those patients are ascertain of that the proposed self-care management strategies can produce positive changes in their health status. This was in congruence with Gallaghs et al. [(53)] and Mazor et al. [(56)] who emphasized the same results.

Another notable finding in the present study was that the studied patients obtained low a mean percent score of self-care practices ((9.0±12.8) prior to the introduction of the proposed self-care management program. This may be because of some diseased seniors with such chronic illnesses had poorer self-care practices that associated with reduced motivation to learn, practice, and maintain self-care. This didn't contradict literatures that indicated that older adults may be unwilling to modify their behaviors if not perceive a motive to change their traditional beliefs, and self-care approaches [(57)]. Another explanation for decreased self-care practices among the studied subjects is that more than two thirds of them had multiple comorbidities as hypertension, coronary artery diseases, and heart failure, diabetes mellitus, and renal disorders. These pathological processes result in serious disruption in self-care for those patients and this is congruent with result of previous study done in 2009 [(12, 58)]

Chronic comorbidities eventually interfere with the studied patients' ability to conduct daily activities and thus become increasingly dependent upon others in performing their activity of daily life such as feeding,

bathing, toileting mobility and exercise, dressing, and grooming. In addition to, house hold activities, doing laundry, taking medications, shopping, and using transportation to visit hospital and doctor for follow up their health condition. This is supported by finding of the present study which indicates that more than one half of CLDs geriatric patients facing daily life stressors as fluid and dietary restrictions, inability to work inside and outside the home, difficulty in travelling from place to another, and difficulty in their sex life. Moreover, the most of them have CLDs-related psychological stressors which in turn affect their psycho-social status that impairs their self-care practices. This finding supports one study conducted in Baghdad by Majeed et al. [(59)].

Auspiciously, the result of this study revealed that there was an observed and a significant improvement in patients' self-care practices (92.1±5.9) immediately after the implementation of the proposed self-care management strategies. This improvement can be explained by the fact of practicing self-care measures can enable the person to realizes and appreciate the illness process subsequently, enhance their own confidence to manages their problems [(54)]. Furthermore, the skills learnt through the proposed self-care management program covers all forms of stressors perceived by CLDs sufferers and its related self-care interventions and various alternative coping strategies. In addition to, the provision hand out to the patients to be a permanent simple source of their information. This is beside the written action plan prepared by the researcher to evaluate the degree of achievement of program's objectives. The study of Kadokaw et al. [(60)] proved this result and concluded that patients' education through self-care program can be effective for improving the knowledge and practices of patients and their families.

With respect to Patients' self-care knowledge and practices after six weeks from ending the program, it can be observed that self-care knowledge and practices were slightly decreased if compared to its level immediately after it but, still higher than that prior to the implementation of the program and the difference was statistically significant. This may be due to the progressive nature of CLDs in addition to, the fact of the acquired knowledge, behaviors, and skills declined with the passage of time especially in the absence or reduced follow up and supervision. This result was congruent with the finding by Chodosg et al. [(61)] who indicated that higher improvement rates continued for self-management programs relative to no rehabilitation at two and six months follow-up, however the difference between those rates had dropped, which likely indicates continued decline over time.

Finally, the current study's findings ensure the significance of self-care knowledge in enhancing interventions to promote CLDs self-management. In this context, the results illustrated that there was a positive significant correlation between self-care knowledge of the study subjects and their self-care practices prior the application of self-care management program and six weeks post-program but, it wasn't reach to a significant level immediately after it. This is mean that the improvement in patients' knowledge was reflected on patients' practices in which those who more knowledgeable about their condition, they have more confidence in their abilities to deal with their own chronic illness and its related stressors. This finding supports other study done by Stromberg et ale. [(62)] stated that individuals with stronger knowledge intensify their energies to meet obstacles, rather being diminished. Moreover, he stated that as self-care knowledge is the only predictor known to be amenable to intervention, self-care knowledge enhancing support should be encouraged. Additionally, Haynes et al. [(63)] indicated that the direct patient education was effective for improving patient's self-care.

V. Conclusion

The results confirmed the hypotheses of this study; the implementation of self-care management program proved to be effective in enhancing self-care knowledge and self-care practices of the geriatric patients with chronic liver diseases which is positively reflected on their dealing with disease-related stressors.

VI. Recommendations

The followings are the main recommendations yielded by this study:

- The Egyptian Ministry of Health should prepare plans for provision of adequate financial support in order to help the geriatric patients with chronic liver diseases in facing the economic burdens related to their disease. This through the cooperation with the specialized governmental and non-governmental organizations additionally, the contributions of business men.
- Assessment of chronic liver diseases-related stressors should be integrated and incorporated into the routine nursing practices while developing a comprehensive care plan in order to educate the patients about dealing with and adjusting to these stressors.
- Continuing in-service training programs should be planed and provided to nursing staff in inpatient units and outpatient clinics. These programs should include knowledge and skills required for self-care management of geriatric patients with chronic liver diseases.

Recommendations for future researches:

- The effect of self-care strategies on the quality of life and self-efficacy of geriatric patients with chronic liver diseases

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Table (1): Distribution of studied subjects according to their socio-demographic characteristics

Socio-demographic characteristics	The study subjects (no. = 109)	
	no.	%
Age (in years):		
60 -	77	70.7
70-	25	22.9
≥80	7	6.4
Mean ± SD= 66.3 ±6.3 years		
Min-Max= 60-85 years		
Sex:		
Male	69	63.3
Female	40	36.7
Marital status:		
Married	66	60.5
Widow	32	29.4
Divorced	3	2.8
Single	8	7.3
Level of education:		
Illiterate	82	75.2
Basic education	11	10.1
Secondary education	12	11.0
University education	4	3.7
Occupation before retirement:		
Yes	**102**	**93.6**
House wife	36	35.3
Employee	20	19.6
Manual Worker	31	30.4
Technical worker	15	14.7
No	**7**	**6.4**
Income:		
Not enough	97	89.0
Enough	12	11.0
Source of income:-		
Pension	60	55.1
Family/ friends	35	32.1
Social affairs	14	12.8
Having children:-		
Yes	**100**	**91.7**
1-2	23	23.0
3-4	35	35.0
>4	42	42.0
No	**9**	**8.3**
Living arrangements:-		
-Place of residence		
Urban	73	67.0
Rural	36	33.0
-Living with		
Family/ relatives	44	40.4
Husband/ wife	43	39.4
Alone	22	20.2

Table (2): Distribution of studied subjects according to their health status

Health status	The study subjects (no. = 109)	
	no.	%
Duration of being diagnosed with CLDs (Years):		
< 5 years	61	56.0
5-	25	22.9
10-	21	19.3
15-20	2	1.8
Mean ± SD= 5.5 ±3.9 years		
The expected causes of diagnosed CLDs #:		
• Hepatitis C virus (HCV)	68	62.4
• prolonged biliary obstruction	38	34,9
• Bilharzias	37	33.9
• Non-alcoholic fatty liver	15	13.8
• Hepatotoxic drugs	10	9.2
• Hepatocellular carcinoma	10	9.2
- Chronic autoimmune hepatitis	4	3.7
- Alcoholic liver	2	1.8

Regular taking of medication for CLDs #:		
Yes	**58**	**53.2**
No	**51**	**46.8**
Causes of not taking of medication for CLDs regularly#:		
• U aware of having the disease	20	39.2
• High cost of medication	20	39.2
• Its side effects	8	15.7
• Presence of multiple medical disorders	8	15.7
Periodically following & checking up for CLDs:		
Yes		
No	**68**	**62.4**
Causes of not following & checking up for CLDs regularly:	**41**	**37.6**
• High cost of laboratory investigations and transportations	41	100.0
Have the patients ever had a hepatic coma?		
No	**66**	**60.6**
Yes	**43**	**39.4**
Mean ± SD of all hepatic coma=	3.8 ±2.8 times	
Mean ± SD of recent hepatic coma (last 4 weeks) =	1.7 ±1.0 times	
Does the disease hinder their ability to perform daily life activities?		
• Totally independent	35	32.1
• Partially dependent	40	36.7
• Totally dependent	34	31.2
Does the disease hinder their ability to perform instrumental activities of daily living?		
• Able with no assistance	12	11.0
• Need some assistance	22	20.2
- Need more assistance	26	23.8
- Totally unable	49	45.0
The presence of co-morbidities other than CLDs #:		
Yes	**77**	**70.6**
• Cardiovascular disorders (HTN, CAD,&HF)	66	85.7
• Endocrine disorders (DM)	39	50.6
• Renal disorders	21	27.3
• Musculoskeletal disorders (osteoporosis & osteoarthritis)	18	23.4
• Respiratory disorders **(**COPD &bronchial asthma)	17	22.1
• Cancers	15	19.5
No	**32**	**29.4**

Multiple response CLDs: Chronic Liver Diseases

Table (3): The relation between the socio-demographic characteristics and the mean chronic liver diseases-related stressors of the studied subjects

Socio-demographic characteristics		**Chronic liver diseases-related stressors**						
		Physical stressors	**Daily life stressors**	**Mental stressors**	**Psychological stressors**	**Social stressors**	**Spiritual stressors**	**Financial stressors**
Sex								
Male	Mean ±SD	55.6±14.1	61.1±19.1	38.7±29.8	80.4±19.9	69.8±18.2	72.6±19.7	97.1±9.8
Female	Mean ±SD	11.2±59.9	17.8±62.5	25.6±47.8	20.1±81.3	20.1±70.6	18.3±70.0	15.0±93.6
Significance	F	2.739	140.	2.594	052.	052.	4.	2.0
	P	101.	709.	110.	820.	820.	488.	152.
Age)Years(								
60-	Mean ±SD	57.3±12.8	64.1±19.4	43.4±29.1	81.0±18.6	72.5±18.1	72.1±1 9.1	97.2±10.5
-70	Mean ±SD	15.7±56.8	14.6±55.5	29.2±39.0	24.2±81.5	20.1±66.5	20.9±71.7	14.1±92.5
80≤	Mean ±SD	10.1±56.5	17.8±55.9	21.4±38.0	19.0±74.1	15.2±55.7	13.8±66.6	17.3±92.3
Significance	F	025.	2.437	287.	408.	3.296	256.	1.773
	P	976.	092.	751.	666.	*041.	775.	175.
Level of education								
illiterate	Mean ±SD	58.3±13.2	61.8±18.4	39.5±27.4	82.2±19.2	70.1±18.6	71.4±18.3	96.5±10.2
Basic education	Mean ±SD	16.4±51.2	14.4±57.5	28.0±45.1	21.6±80.5	22.8±69.3	20.6±80.0	16.0±95.1
Secondary education	Mean ±SD	8.9±57.2	18.0±56.9	18.9±38.5	18.3±78.3	15.3±70.7	18.8±66.6	4.7±97.7
University education	Mean ±SD	14.0±54.7	30.8±73.9	33.3±83.3	30.4±64.2	24.0±79.1	36.6±68.3	33.3±83.3
Significance	F	872.	798.	2.584	1.055	549.	748.	1.505
	P	484.	529.	*041.	383.	700.	561.	206.
Marital status								
Married	Mean ±SD	56.9±14.9	66.0±18.8	42.7±30.4	79.0±19.5	72.7±18.5	73.5±18.6	96.7±11.5
Widow	Mean ±SD	11.1±57.9	15.0±52.9	25.6±41.6	18.8±80.5	20.1±67.1	19.6±72.5	11.5±95.2
Divorce	Mean ±SD	0.6±54.8	19.6±61.1	31.6±32.2	40.4±106.3	1.9±52.2	16.7±57.7	7.6±95.5
Single	Mean ±SD	9.5±57.3	20.0±59.3	28.0±42.0	14.8±85.7	14.8±66.6	20.3±68.9	18.4±90.8
Significance	F	074.	3.895	129.	025 .2	1.720	949.	616.
	P	974.	*011.	943.	115.	167.	420.	606.

Presence of children								
No	Mean ±SD	57.1±8.9	61.1±17.6	41.4±26.3	97.8±22.4	69.2±18.7	76.2±18.8	94.0±15.4
2-1	Mean ±SD	15.3±57.7	17.4±62.6	34.3±51.3	20.6±74.5	23.6±68.5	21.0±68.9	16.4±92.7
4-3	Mean ±SD	13.2±58.4	14.6±63.0	29.1±47.4	16.0±86.1	18.2±74.7	19.4±77.1	6.8±97.5
>4	Mean ±SD	13.1±55.8	22.4±59.9	22.8±32.6	19.3±75.9	16.1±67.3	17.2±67.6	11.8±96.5
Significance	F	256.	212.	2.851	5.141	1.082	1.948	837.
	P	857.	888.	*041.	*002.	360.	126.	476.
Occupation before retirement								
No	Mean ±SD	56.3±15.5	64.2±7.9	64.2±31.7	76.1±23.3	75.7±17.1	69.5±26.3	99.0±2.5
Housewife	Mean ±SD	10.7±60.9	17.6±63.1	25.4±49.3	17.9±83.3	19.9±72.3	17.5±70.5	10.8±96.1
Employee	Mean ±SD	14.4±49.7	28.0±60.0	33.4±36.3	20.5±70.0	18.8±65.5	20.0±65.6	18.6±91.3
Manual worker	Mean ±SD	60.3±13.6	53.6±17.2	45.5±26.2	93.0±19.1	72.6±19.2	80.4±23.4	93.3±14.4
Technical worker	Mean ±SD	13.2±56.2	13.8±64.1	24.8±30.6	18.4±79.7	17.9±68.0	15.7±73.1	5.9±98.9
Significance	F	2.691	971.	3.410	3.414	730.	1.390	1.533
	P	*035.	427.	*012.	*012.	574.	242.	198.
Income								
Not Enough	Mean ±SD	58.0±12.8	60.7±16.3	43.4±27.4	82.6±19.1	71.5±18.3	71.9±18.9	97.1±9.1
Enough	Mean ±SD	15.5±54.0	30.8±69.7	37.4±35.0	20.2±71.4	20.8±62.7	21.2±72.2	17.4±90.0
Significance	F	3.003	1.434	1.173	4.796	2.577	621.	9.079
	P	*054.	243.	313.	*010.	081.	539.	*0.001<
Living arrangements:								
Alone	Mean ±SD	55.6±9.5	52.8±14.9	42.1±26.1	80.0±23.6	63.4±19.4	63.3±20.0	91.8±14.3
Husband/Wife	Mean ±SD	16.3±57.8	21.7±66.2	30.9±43.2	21.5±79.4	18.8±73.0	20.0±72.8	14.0±95.3
Family\ Relatives	Mean ±SD	13.4±59.8	17.5±63.4	36.8±38.2	16.8±77.2	18.8±69.7	15.7±76.9	1.8±99.4
Significance	F	356.	2.728	101.	560.	1.281	1.938	1.554
	P	785.	*048.	959.	643.	285.	128.	205.
Place of residence								
Urban	Mean ±SD	56.5±12.8	62.5±20.0	40.5±26.8	80.2±20.9	67.8±17.8	70.9±19.5	95.4±13.4
Rural	Mean ±SD	14.3±58.5	15.3±59.7	32.0±45.2	17.9±81.7	20.2±74.6	18.6±73.1	8.6±96.6
Significance	F	579.	557.	670.	137.	3.134	312.	252.
	P	448.	457.	415.	712.	080.	578.	617.

***Significance at P 0.05≥ P: P value of ANOVA test F= ANOVA test**

Table (4): Relation between health status and the mean chronic liver diseases-related stressors of the studied subjects

Health status		**Chronic liver diseases-related stressors**						
Presence of co-morbidities other than CLDs		**Physical stress**	**Daily life stressors**	**Mental stress**	**Psychological stress**	**Social stress**	**Spiritual stress**	**Financial stress**
Yes	Mean ±SD	59.4±13.0	63.2±19.8	44.0±28.2	82.4±17.6	72.2±18.8	73.1±19.3	96.6±9.4
No	Mean ±SD	12.5±51.7	14.6±57.8	29.2±37.2	24.4±76.4	18.1±64.8	18.5±68.1	16.7±93.9
Significance	F	8.137	1.913	1.272	2.073	3.565	1.565	1.111
	P	*005.	169.	262.	153.	062.	214.	294.
Duration of being diagnosed with CLDs)Years:(								
< 5 years	Mean ±SD							
-5								
-10	Mean ±SD	55.0±14.0	60.9±19.3	37.7±25.9	78.0±21.1	67.0±18.1	68.7±18.2	95.0±14.1
20-15	Mean ±SD	11.2±60.7	17.9±66.1	32.5±51.7	17.6±83.8	17.2±75.4	17.6±77.8	7.2±97.3
	Mean ±SD	13.2±59.1	13.7±61.9	30.4±44.2	18.8±85.9	21.3±74.4	21.1±75.5	9.0±97.1
	Mean ±SD	6.2±57.7	2.9±22.9	4.7±30.0	3.3±69.0	2.3±51.6	4.7±43.3	18.8±86.6
Significance	F	1.249	3.663	1.599	1.278	2.297	3.280	673.
	P	296.	*015.	194.	286.	082.	*024.	571.
Regular taking of medication for CLDs								
No	Mean ±SD							
Yes	Mean ±SD	58.5±12.0	66.0±18.6	46.7±28.2	86.4±19.3	71.7±20.0	75.9±19.5	95.6±12.4
	Mean ±SD	14.3±55.9	17.8±57.7	28.5±37.9	19.2±75.6	17.7±68.6	±67.918.2	11.7±95.9
Significance	F	1.043	5.565	2.572	8.447	726.	4.910	016.
	P	310.	*020.	112.	*004.	396.	*029.	900.
Periodically following & checking up for CLDs								

No	Mean ±SD	58.1±12.2	65.4±21.1	46.2±27.9	85.1±20.6	69.9±19.9	75.4±20.2	95.4±13.5
Yes	Mean ±SD	13.9±56.6	16.6±59.3	28.8±39.5	19.1±78.0	18.2±70.2	18.2±69.4	11.1±96.0
Significance	F	360.	2.826	1.409	3.265	008.	2.568	070.
	P	550.	096.	238.	074.	931.	112.	792.
Have the patients ever had a hepatic coma?								
No	Mean ±SD	54.3±13.2	60.8±18.8	33.9±26.0	78.7±20.8	65.8±18.0	70.1±18.1	94.1±14.7
Yes	Mean ±SD	12.1±61.6	18.4±62.7	28.1±54.5	18.2±83.8	18.2±76.7	20.6±74.1	4.7±98.4
Significance	F	8.421	279.	15.343	1.724	9.449	1.138	3.415
	P	*005.	599.	*0.001<	192.	*003.	289.	067.
Does the disease hinder their ability to perform daily life activities?								
Totally independent	Mean ±SD	52.1±12.1	55.1±23.8	35.7±27.6	68.5±23.2	60.0±17.2	56.3±16.2	92.1±16.3
Partially dependent	Mean ±SD	13.8±54.7	15.4±64.5	33.4±40.7	17.0±85.3	19.5±73.4	15.9±78.1	11.5±96.3
Totally dependent	Mean ±SD	10.0±65.2	14.0±64.8	21.3±50.1	12.8±87.8	15.4±76.6	16.2±79.8	3.7±99.0
Significance	F	11.102	3.281	2.334	11.641	8.822	23.249	2.934
	P	*0.001<	*041.	102.	*0.001<	*0.001<	*0.001<	*058.
Does the disease hinder their ability to perform instrumental activities of daily living?								
Able with no assistance	Mean ±SD	51.4±12.0	45.8±12.9	38.8±17.5	67.4±32.2	58.8±16.3	53.8±14.6	92.7±19.1
Need some assistance	Mean ±SD	11.2±55.3	25.1±69.5	33.1±40.0	20.2±75.1	22.1±68.6	18.4±63.9	16.7±93.3
Need more assistance	Mean ±SD	15.8±51.1	18.4±58.9	33.5±34.7	19.2±76.0	20.0±65.6	19.4±68.9	12.9±93.3
Totally unable	Mean ±SD	10.9±62.6	13.7±63.3	25.2±47.6	11.9±89.0	15.3±75.9	15.3±80.9	3.6±99.0
Significance	F	6.102	5.016	1.296	6.528	3.769	11.023	2.185
	P	*0.001<	*003.	280.	*0.001<	*013.	*0.001<	094.

***Significance at P 0.05≥P: P value of ANOVA test F= ANOVA test**

Table (5): The effect self-care management program on self-care knowledge of geriatric patient with chronic liver diseases

self-care knowledge	**Geriatric patients' Mean percent Scores**	**Test of significance**	
		Friedman test	
		P1	**P2**
Pre-program	**9.8±14.9**		
Immediate Post-program	**97.5±4.8**		
6 weeks Post-program	**59.7±12.1**	**P:≤0.001***	**P:≤0.001***

p :**1**Stands for p-value for Friedman test for comparison between pre-program with immediate post-program guideline application

p2: Stands for p-value for Friedman test for comparison between pre-program with 6 weeks post-program (follow up)

* Statistically significant at $p \leq 0.05$

Table (6): The effect self-care management program on self-care Practices of geriatric patient with chronic liver diseases

p1: Stands for p-value for Friedman test for comparison between pre-program with immediate post-program guideline application

p2: Stands for p-value for Friedman test for comparison between pre-program with 6 weeks post-program (follow up)

* Statistically significant at $p \leq 0.05$

Table (7): The correlation between self-care knowledge and self-care practices of geriatric patients with chronic liver diseases pre-program, immediately post, and six weeks after the application of the program

Self-care knowledge	Self-care practices	
	F	**P**
P1	10.490	<0.001*
P2	.222	.881
P3	1.802	0.058*

F: ANOVA test P:p value of ANOVA test *Significance at p≤0.05

p_1: Stands for p-value for ANOVA test for comparison between self-care knowledge pre-program with self-care practices pre-program

p_2: Stands for p-value for ANOVA test for comparison between self-care knowledge immediately after program with self-care practices immediately after program

p_3: Stands for p-value for ANOVA test for comparison between self-care knowledge six weeks post-program with self-care practices six weeks post-program

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