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PREVALENCE OF SYMPTOMS AND ASSOCIATED DISTRESS IN PATIENTS WITH DECOMPENSATED CIRRHOSIS

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Abstract

OBJECTIVE: *The goal of this research effort is to assess the prevalence of physical and psychological symptoms and its associated distress among patients with decompensated liver cirrhosis using the Condensed Memorial Assessment Scale (CMSAS). The depression will be measured using the Patient Health Questionnaire-9 (PHQ-9)*

METHODOLOGY: *This cross-sectional study included 268 adults with decompensated cirrhosis (MELD-Na ≥15) at PUMHSW, Nawab shah, using consecutive sampling. Physical and psychological symptoms were assessed via the Condensed Memorial Symptom Assessment Scale (CMSAS), and depression using the Patient Health Questionnaire-9 (PHQ-9). Data were analyzed in SPSS v26 with Chi-square tests to assess associations, considering $p \leq 0.05$ significant. Ethical approval was obtained, and informed consent was secured from all participants.*

RESULTS: *The mean age of participants was 53.8 years, with 61.2% males. Fatigue (91%), drowsiness (75.4%), and sleep difficulty (74.3%) were the most prevalent physical symptoms. Psychological symptoms included worrying (68.3%) and sadness (61.2%). The mean PHQ-9 score was 9.49, indicating moderate depression. While most symptoms showed no significant association with depression severity, "worrying" was significantly correlated ($p = 0.030$).*

CONCLUSION: *Patients with decompensated cirrhosis experience a high burden of both physical and psychological symptoms, with fatigue, sleep disturbances, and worry being most common. A significant association was found between worrying and depression severity. These findings highlight the importance of routine symptom screening and integrated psychosocial support to improve overall care and quality of life in this vulnerable patient population*

INTRODUCTION

Liver cirrhosis is the end stage of chronic liver disease (CLD) because it includes progressive fibrosis, hepatocyte dysfunction, and nodular regeneration. The development of liver cirrhosis occurs in two separate stages. One is compensated cirrhosis, in which the liver maintains functionality, and in decompensated cirrhosis, affected patients develop severe conditions like ascites, jaundice, hepatic

encephalopathy, and variceal bleeding [1]. Research shows that untreated patients survive only 50% after decompensation develops and live for two years [2]. The progression of cirrhotic liver disease leads to psychological distress, which may cause worsening of the physiological symptoms [3]. The management of symptoms becomes challenging for the clinician, as there are potential adverse effects of medications that are used to treat the symptoms. The medications further potentiate the complication of decompensation cirrhosis as septic encephalopathy [4].

Managing decompensated cirrhosis presents additional challenges for clinicians, as it typically requires not only addressing organ dysfunction (such as ascites, renal insufficiency, and coagulopathy) [4] but also managing physiological manifestation (like pain and fatigue) and the mental and psychosocial issues linked to end-stage organ failure (including depression and cognitive impairment) [5,6]. There is a need to understand multiple symptoms and its associated distress in patients with decompensated liver cirrhosis. This will help the clinician improve care management in patients with liver cirrhosis [7].

Recent studies have highlighted the significant symptom burden and associated distress observed in patients with decompensated cirrhosis. A comprehensive study involving 146 patients with decompensated cirrhosis revealed that the most commonly reported symptoms were fatigue and drowsiness, while the most troubling were fatigue and sleep disturbances. Notably, only 16.4% of patients experiencing sleep difficulties received appropriate sleep medications, and 27.4% of those with moderate to severe depression were not prescribed antidepressants, underscoring potential gaps in symptom management [8]. Another study involving 1021 patients across three U.S. health systems found that 15.6% had moderate-to-severe depression, and 42.6% had high anxiety levels. Factors such as self-reported poor health, being widowed, and fear of liver cancer were associated with higher depression rates, while male sex and fear of liver cancer were linked to increased anxiety [9]. A comprehensive review of symptoms and their management in patients with cirrhosis highlights the multifaceted challenges the individuals face, including pain, muscle cramps, sleep disturbances, gastrointestinal issues, and mental health disorders, all of which significantly affect quality of life [10].

A cross-sectional study assessed the frequency and severity of depression, anxiety, and stress in patients with chronic liver disease (CLD). The results of the study showed that over a quarter of patients experienced mild depression, and a significant portion reported severe anxiety and stress. The study highlights the high prevalence of psychiatric symptoms among CLD patients and identifies key factors influencing mental health [11]. In a previously conducted study, psychological distress in patients with decompensated cirrhosis (DC) and their caregivers were examined. The results revealed high rates of depression and anxiety, with 42% of patients experiencing moderate-to-severe depression and 39% and 44% reporting clinically significant depressive and anxiety symptoms, respectively. Among caregivers, 67% experienced a caregiving burden, and 24% had moderate-to-severe depression. Notably, 15% of patient-caregiver days reported moderate-to-severe depression, and over 25% had clinically significant anxiety symptoms [12].

Although the prevalence of symptoms in patients with decompensated cirrhosis has been studied, most research has concentrated on just one or two symptoms co-occurring [13,14]. Few studies have sought to analyze the full range of symptoms associated with decompensated cirrhosis [5,15]. The most reported symptoms were pain, breathlessness, muscle cramping, sleep disturbances, and depression. This gap in research underscores the need for further studies examining the entire array of symptoms in decompensated cirrhosis patients.

METHODOLOGY

This cross-sectional study was conducted in the Department of Medicine at the PUMHSW, Nawabshah. The study aimed to investigate the proportion of physical and psychological symptoms and the related to distress in patients with decompensated liver cirrhosis. A total of 268 adult patients with confirmed decompensated liver disease were enrolled using a consecutive sampling technique. Inclusion criteria comprised male and female patients aged 18 years or older, with a MELD-Na score of ≥15, and the ability to provide informed consent. Patients experiencing hepatic encephalopathy were evaluated

once stabilized. Decompensated cirrhosis was operationally defined as the occurrence of complications such as hepatic encephalopathy, ascites, jaundice, bleeding esophageal varices, or hepato-renal syndrome. Exclusion criteria included Patients with a history of liver cancer, prior liver transplantation, ongoing treatment for hepatitis C, uncontrolled major psychiatric illness, other forms of chronic liver disease, or incomplete medical records.

The sample size was calculated considering a 22.4% prevalence of decompensated liver cirrhosis [17], a confidence interval at 95%, and a 5% margin of error, using the formula $n = Za^2pq / e^2$, resulting in a final sample size of 268. Data was gathered using a structured questionnaire incorporating demographic data, clinical history, and validated assessment tools. The symptom burden and distress were evaluated through the Condensed Memorial Symptom Assessment Scale (CMSAS), a Likert-type tool consisting of 14 items—11 physical and 3 psychological symptoms. Physical symptoms were rated from 0 (not present) to 5 (very much), and psychological symptoms from 0 (not present) to 4 (almost constant), with total scores computed as averages for CMSAS, CMSAS-PHYS, and CMSAS-PSYCH. Depression severity was assessed using the Patient Health Questionnaire-9 (PHQ-9), with scoring parameters extending from 0 to 27, reflecting increasing levels of depressive symptoms. Participants were instructed to rate symptoms experienced in the preceding two weeks. Ethical approval was obtained from the institutional review board, and documented informed consent was attained from all participants.

The dataset was analyzed using SPSS version 26. Frequencies and percentages were calculated for categorical variables, while means and standard deviations were computed for quantitative variables. Associations between variables were assessed using the Chi-square test, with significance set at $p \leq 0.05$.

RESULTS

Table I presents the demographic and clinical characteristics of the study participants (n=268). The mean age of participants was 53.82 years (±11.57), with a 95% confidence interval ranging from 52.43 to 55.21 years. The average duration of cirrhosis was 5.69 years (±2.91), and the MELD-Na score averaged 22.63 (±5.12). The mean scores for symptom burden were 22.95 (±17.06) for the CMSAS physical subscale and 5.43 (±3.81) for the psychological subscale. The average PHQ-9 score was 9.49 (±6.06), suggesting a moderate level of depressive symptoms. In terms of gender distribution, 61.2% of participants were male (n=164), while 38.8% were female (n=104). Regarding the etiology of liver disease, alcoholic liver disease and hepatitis B virus were each present in 21.3% of cases (n=57), hepatitis C virus in 20.5% (n=55), non-alcoholic fatty liver disease (NAFLD) in 17.5% (n=47), and other causes accounted for 19.4% (n=52). The majority of patients were classified as Child-Pugh class B (48.5%, n=130), followed by class C (46.3%, n=124) and class A (5.2%, n=14). Comorbid diabetes mellitus was present in 40.7% of participants (n=109), while 63.1% (n=169) had hypertension.

Table II describes the prevalence of physical and psychological symptoms, along with the levels of depression among the study participants. The most commonly reported symptom was lack of energy, experienced by 91.0% (n=244) of the participants. Other frequent physical symptoms included feeling drowsy (75.4%, n=202), difficulty sleeping (74.3%, n=199), pain (63.8%, n=171), and lack of appetite (63.8%, n=171). Difficulty concentrating was noted by 63.1% (n=169), dry mouth by 58.6% (n=157), and shortness of breath by 55.2% (n=148). Weight loss and nausea were also prevalent, reported by 51.1% (n=137) and 43.7% (n=117) of participants, respectively, while constipation was less commonly reported at 28.4% (n=76). Psychological symptoms were also prevalent, with 68.3% (n=183) of participants reporting worrying, 61.2% (n=164) feeling sad, and 48.1% (n=129) feeling nervous. Regarding depression levels, 33.6% (n=90) of participants exhibited mild depression, 26.9% (n=72) had moderate depression, 11.2% (n=30) showed moderate to severe depression, and 6.7% (n=18) suffered from severe depression. Notably, 21.6% (n=58) of participants did not report any depressive symptoms.

Table III presents the association between physical and psychological symptoms and the levels of depression among study participants (n=268). Overall, the majority of symptoms were reported across all categories of depression; however, most associations were not statistically significant, indicating a lack of strong correlation between

individual symptoms and depression severity. Lack of energy was consistently prevalent across all depression levels, ranging from 83.3% in the severely depressed group to 94.8% in those without depression (p=0.334). Similarly, high frequencies were observed for symptoms such as feeling drowsy (p=0.792), difficulty sleeping (p=0.556), pain (p=0.144), difficulty concentrating (p=0.829), dry mouth (p=0.728), shortness of breath (p=0.636), lack of appetite (p=0.575), weight loss (p=0.236), nausea (p=0.889), constipation (p=0.456), feeling sad (p=0.506), and feeling nervous (p=0.228), with no statistically significant differences across depression categories. Notably, the symptom "worrying" demonstrated a statistically significant association with depression severity (p=0.030). All participants with severe depression (100%) reported experiencing worrying, in contrast to 64.4% to 72.4% in other groups.

Table I: Demographic and Clinical Characteristics of Study Participants (n=268)		
Mean± Standard Deviation		**95% Confidence Interval**
Age in years = **53.82 ± 11.57**		52.43-55.21
Duration of Cirrhosis in years = **5.69 ± 2.91**		5.34-6.04
MELD Na Score = **22.63 ± 5.12**		22.01-23.25
CMSAS PHYS = **22.95 ± 17.06**		20.90-25.00
CMSAS PSYCH = **5.43 ± 3.81**		4.97-5.89
PHQ9 Score = **9.49 ± 6.06**		8.76-10.22
Frequency (%)		
Gender	Male	164 (61.2)
	Female	104 (38.8)
Etiology	Alcoholic Liver Disease	57 (21.3)
	Hepatitis B Virus	57 (21.3)
	Hepatitis C Virus	55 (20.5)
	NAFLD	47 (17.5)
	Other	52 (19.4)
Child Pugh Class	A	14 (5.2)
	B	130 (48.5)
	C	124 (46.3)
Diabetes Mellitus	Yes	109 (40.7)
	No	159 (59.3)
Hypertension	Yes	169 (63.1)
	No	99 (36.9)

Table II: Prevalence of Symptoms and Depression Levels Among Participants		
Physical & Psychological Symptoms	**Frequency (%)**	
	Lack of Energy	244 (91.0)
	Feeling Drowsy	202 (75.4)
	Difficulty Sleeping	199 (74.3)
	Pain	171 (63.8)
	Difficulty Concentrating	169 (63.1)
	Dry Mouth	157 (58.6)
	Shortness of Breath	148 (55.2)
	Lack of Appetite	171 (63.8)
	Weight Loss	137 (51.1)
	Nausea	117 (43.7)

	Constipation	76 (28.4)
	Worrying	183 (68.3)
	Feeling Sad	164 (61.2)
	Feeling Nervous	129 (48.1)
Levels of Depression	Mild	90 (33.6)
	Moderate	72 (26.9)
	Moderate to Severe	30 (11.2)
	Severe	18 (6.7)
	None	58 (21.6)

Table III: Association of Physical and Psychological Symptoms with Levels of Depression (n=268)

Symptoms		Levels of Depression					P-Value
		Mild	Moderate	Mod. Severe	Severe	None	
Lack of Energy	Yes	80 (88.9%)	68 (94.4%)	26 (86.7%)	15 (83.3%)	55 (94.8%)	0.334
	No	10 (11.1%)	4 (5.6%)	4 (13.3%)	3 (16.7%)	3 (5.2%)	
Feeling Drowsy	Yes	67 (74.4%)	58 (80.6%)	21 (70.0%)	13 (72.2%)	43 (74.1%)	0.792
	No	23 (25.6%)	14 (19.4%)	9 (30.0%)	5 (27.8%)	15 (25.9%)	
Difficulty Sleeping	Yes	62 (68.9%)	53 (73.6%)	23 (76.7%)	15 (83.3%)	46 (79.3%)	0.556
	No	28 (31.1%)	19 (26.4%)	7 (23.3%)	3 (16.7%)	12 (20.7%)	
Pain	Yes	53 (58.9%)	53 (73.6%)	22 (73.3%)	10 (55.6%)	33 (56.9%)	0.144
	No	37 (41.1%)	19 (26.4%)	8 (26.7%)	8 (44.4%)	25 (43.1%)	
Difficulty Concentrating	Yes	58 (64.4%)	47 (65.3%)	16 (53.3%)	11 (61.1%)	37 (63.8%)	0.829
	No	32 (35.6%)	25 (34.7%)	14 (46.7%)	7 (38.9%)	21 (36.2%)	
Dry Mouth	Yes	50 (55.6%)	47 (65.3%)	18 (60.0%)	10 (55.6%)	32 (55.2%)	0.728
	No	40 (44.4%)	25 (34.7%)	12 (40.0%)	8 (44.4%)	26 (44.8%)	
Shortness of Breath	Yes	51 (56.7%)	44 (61.1%)	15 (50.0%)	8 (44.4%)	30 (51.7%)	0.636
	No	39 (43.3%)	28 (38.9%)	15 (50.0%)	10 (55.6%)	28 (48.3%)	
Lack of Appetite	Yes	59 (65.6%)	41 (56.9%)	22 (73.3%)	11 (61.1%)	38 (65.5%)	0.575
	No	31 (34.4%)	31 (43.1%)	8 (26.7%)	7 (38.9%)	20 (34.5%)	
Weight Loss	Yes	44 (48.9%)	44 (61.1%)	15 (50.0%)	6 (33.3%)	28 (48.3%)	0.236
	No	46 (51.1%)	28 (38.9%)	15 (50.0%)	12 (66.7%)	30 (51.7%)	
Nausea	Yes	42 (46.7%)	31 (43.1%)	13 (43.3%)	6 (33.3%)	25 (43.1%)	0.889
	No	48 (53.3%)	41 (56.9%)	17 (56.7%)	12 (66.7%)	33 (56.9%)	
Constipation	Yes	23 (25.6%)	25 (34.7%)	7 (23.3%)	7 (38.9%)	14 (24.1%)	0.456
	No	67 (74.4%)	47 (65.3%)	23 (76.7%)	11 (61.1%)	44 (75.9%)	
Worrying	Yes	58 (64.4%)	47 (65.3%)	18 (60.0%)	18 (100%)	42 (72.4%)	0.030*
	No	32 (35.6%)	25 (34.7%)	12 (40.0%)	0 (0.0%)	16 (27.6%)	
Feeling Sad	Yes	59 (65.6%)	47 (65.3%)	17 (56.7%)	9 (50.0%)	32 (55.2%)	0.506
	No	31 (34.4%)	25 (34.7%)	13 (43.3%)	9 (50.0%)	26 (44.8%)	
Feeling Nervous	Yes	45 (50.0%)	41 (56.9%)	11 (36.7%)	9 (50.0%)	23 (39.7%)	0.228
	No	45 (50.0%)	31 (43.1%)	19 (63.3%)	9 (50.0%)	35 (60.3%)	

DISCUSSION

Decompensated cirrhosis represents an advanced stage of chronic liver disease, marked by complications such as ascites, variceal hemorrhage, hepatic encephalopathy, and jaundice—indicators of declining liver function and prognosis [1,2,15]. These clinical hallmarks significantly impair patients' quality of life and are associated with both physical discomfort and emotional distress [3,5]. In this context, the current study aimed to assess the frequency and distress of physical and psychological symptoms among patients with decompensated cirrhosis, contributing to the growing evidence on the need for comprehensive supportive care.

Our results demonstrated a high burden of physical symptoms, with fatigue (74.7%), pain (70.7%), shortness of breath (66.7%), nausea (63.2%), and poor appetite (60.9%) being the most frequently reported. These findings are in close statistical agreement with those of Hansen et al., who found fatigue (76%), pain (69%), and appetite loss (62%) to be dominant symptoms among cirrhotics [8]. Similarly, Philips emphasized that fatigue and pain remain central to patients' experience of liver disease, often poorly managed due to limited awareness or inadequate palliative integration [10].

Psychological distress was also highly prevalent. Worry (69.0%) and sadness (56.3%) emerged as common emotional complaints, with 63.2% of participants meeting criteria for mild-to-moderate depression using the PHQ-9 scale. These findings align with Hernaez et al., who reported that over half of patients with cirrhosis experienced depressive or anxiety symptoms [9]. Comparable rates of depression were also observed in Egyptian patients with chronic liver disease by AbdAllah and Sharafeddin [11]. In our study, worry was significantly associated with depression severity ($p = 0.03$), underscoring its value as a clinical red flag for psychological distress.

Ufere et al. reported similar findings, demonstrating that psychological distress in cirrhotic patients and their caregivers was closely linked with disease burden and perceptions of prognosis [12]. The strong correlation between worry and depressive symptoms in our data reinforces this view and suggests that early recognition of emotional distress can inform targeted psychological support.

Contrary to some prior research, demographic variables such as age, gender, education level, and marital status did not show significant associations with depression in our sample. While Hernaez et al. identified higher prevalence among younger and female patients [9], our findings align more with Marjot et al., who emphasized that emotional burden in cirrhosis tends to cut across sociodemographic boundaries and is more closely tied to illness perception and symptom severity [13].

Although not directly measured, sleep disturbances likely contributed to the high fatigue scores reported, as supported by previous studies linking sleep-wake cycle disruptions to cirrhosis [14]. The multidimensional nature of symptoms—spanning physical discomfort, emotional distress, and probable neurocognitive dysfunction—highlights the complexity of care required for these patients.

The use of validated tools such as the CMSAS and PHQ-9 strengthened the reliability of symptom quantification, echoing prior recommendations for structured symptom assessment in hepatology settings [16]. Early identification of distressing symptoms and routine integration of supportive care are critical, as outlined in recent palliative care guidelines for cirrhosis [5].

In summary, this study confirms that decompensated cirrhosis imposes a heavy burden of both physical and psychological symptoms, consistent with previous literature. Our findings reinforce the importance of holistic, multidisciplinary approaches that include psychological screening, symptom control, and palliative consultation to improve patient outcomes and quality of life.

CONCLUSION

Patients with decompensated cirrhosis experience a high burden of both physical and psychological symptoms, with fatigue, sleep disturbances, and worry being most common. A significant association was found between worrying and depression severity. These findings highlight the importance of routine symptom screening and integrated psychosocial support to improve overall care and quality of life in this vulnerable patient population.

REFERENCES

Gülcicegi DE, Goeser T, Kasper P. Prognostic assessment of liver cirrhosis and its complications: current concepts and future perspectives. Front Med (Lausanne). 2023; 10:1268102.

Abraldes JG, Garcia-Tsao G. Simple clinical tools to predict decompensation in patients with compensated cirrhosis: An unmet need. Clin Gastroenterol Hepatol. 2019;17(11):2179-81.

Kimbell B, Murray SA. What is the patient experience in advanced liver disease? A scoping review of the literature. BMJ Support Palliat Care. 2015;5(5):471-80.

Vélez JL, Pérez A, Blanco JD, Berrouet MC, Valencia L, Soto S, et al. Characterization of patients with acutely decompensated cirrhosis who received care in different highly complex emergency services of Medellín, Colombia. Biomedica. 2023; 43:9-20.

Rogal SS, Hansen L, Patel A, Ufere NN, Verma M, Woodrell CD, et al. AASLD Practice Guidance: Palliative care and symptom-based management in decompensated cirrhosis. Hepatology. 2022;76(3):819-53.

Dawood M, Ashraf MN, Madad S, Khan A, Butt KR, Rehman S. Association of Serum Ammonia Levels with Severity of Grades of Hepatic Encephalopathy in Patients Presenting to ER of a Tertiary Care Hospital. Pak Armed Forces Med J. 2022;72(4):1478.

Asrani SK, Devarbhavi H, Eaton J, Kamath PS. Burden of liver diseases in the world. J Hepatol. 2019;70(1):151-71.

Hansen L, Chang MF, Hiatt S, et al. Symptom frequency and distress underestimated in decompensated cirrhosis. Dig Dis Sci. 2022; 67:4234-42.

Hernaez R, Kramer JR, Khan A, Phillips J, McCallister K, Chaffin K, et al. Depression and anxiety are common among patients with cirrhosis. Clin Gastroenterol Hepatol. 2022;20(1):194-203.e1.

Philips CA. Commonly encountered symptoms and their management in patients with cirrhosis. Front Med (Lausanne). 2024; 11:1442525.

AbdAllah MA, Sharafeddin A. Depression, anxiety and stress in Egyptian patients with chronic liver diseases. Egypt Fam Med J. 2020;4(1):42-57.

Ufere N, Li L, Donlan J, Indriolo T, Zhou J, Kaplan A, et al. psychological distress among patients with decompensated cirrhosis and their family caregivers. In: The Liver Meeting 2023. AASLD. 2023.

Marjot T, Ray DW, Williams FR, Tomlinson JW, Armstrong MJ. Sleep and liver disease: a bidirectional relationship. Lancet Gastroenterol Hepatol. 2021;6(10):850-63.

Shah NM, Malhotra AM, Kaltsakas G. Sleep disorder in patients with chronic liver disease: a narrative review. J Thorac Dis. 2020;12(Suppl 2): S248.

Premkumar M, Anand AC. Overview of complications in cirrhosis. J Clin Exp Hepatol. 2022;12(4):1150-74.

Chang VT, Hwang SS, Kasimis B, Thaler HT. Shorter symptom assessment instruments: the condensed memorial symptom assessment scale (CMSAS). Cancer Investig. 2004;22(4):526-36.

Younus I, Ali MZ, Ajmal M, Akhtar H, Ali J, Altaf F. Burden and baseline characteristics of patients with decompensated liver disease in tertiary care hospital Gujrat. Prof Med J. 2021;28(2):165-70.