



Assessment of Knowledge, Belief, and Practices Regarding Cirrhosis among the Students of the University of Lahore

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ABSTRACT: Cirrhosis is a liver injury, which leads to portal hypertension, hepatic encephalopathy, ascites, and end-stage liver disease. The study aimed to explore how much students know about liver cirrhosis and its complexity. The cross-sectional study was conducted on university students in the year 2020. A self-structured questionnaire was used in this study. It was divided into three portions, i.e., knowledge-related questions, belief-related questions and practice-related questions. Fifty-eight students participated in this study. 34.3% of students knew about the term cirrhosis, 55.2% knew about the causes of cirrhosis, 7.1% were not aware of its complications, 62.1% of students knew that dysphagia is the leading cause of malnutrition in cirrhosis, and 44.8% knew that hepatic encephalopathy leads to coma. Additionally, 46.6% believed that end-stage liver disease and cirrhosis are the same, and 77.6% believed that jaundice leads to liver disease. Furthermore, 36.2% had previously participated in a nutrition education program related to hepatic diseases, and 24.1% recommended Child-Pugh score to cirrhotic patients to assess liver function. Conclusively, some students had necessary information on liver cirrhosis, whereas some did not know about it. Moreover, the practices of the students were not according to the knowledge they had. As a health professional, the students who do not know cirrhosis well will inefficiently deal with the patients suffering from cirrhosis.

Keywords: Cirrhosis, knowledge, belief, practices, assessment

INTRODUCTION

Liver is the human body's largest gland which plays a vital role in the metabolism of basic nutrients such as protein, carbohydrates and fat (Nishikawa et al., 2015). While, cirrhosis is a liver disease in which normal tissues are replaced by scar tissues and damage to liver is not recoverable (Ge et al., 2016). Cirrhosis reduced the metabolism of the nutrients and effects the normal working of the body.

Now a days it is primary goal to treat cirrhotic patients with diet and adequate nutrients. It is reported that diet serves as long-term nutrition support for cirrhotic patients as it provides enough energy and protein naturally. A study regarding this disease supported that eating 4 to 7 small meals compared to 3 big meals with the addition of 1 late evening carbohydrate snack is considered useful in improving nitrogen economy in cirrhotic patients (Sidiq and Khan, 2015).

According to Global burden on disease, cirrhosis results in more than 1.32 million deaths globally in 2017 representing that 11.4% increase since 2012 (Paik et al., 2020). It includes 440 000 deaths in females and 883 000 deaths in males as compared to death

rate of 1990 when there is only 899 000 deaths for both sexes. The prevalence of decompensated cirrhosis is 10.6 million in 2017, of which 6.42 million are males and 4.23 million are females. It is noticed survival chances of patients with decompensated cirrhosis are approximately 2.5 years. (Zipprich et al., 2012). In the case of compensated cirrhosis, the prevalence rate is 112 million of which there are 66.1 million males and 46.3 million females. At the regional level, central Asia has the highest death rate due to cirrhosis (Sepanlou et al., 2020). In Pakistan, HCV has been documented as the highest cause of cirrhosis making Pakistan the second most prevalent country. Presently, Pakistan has almost 10 million patients affected with HCV and are at risk of developing cirrhosis (Ullah et al., 2020). In 2013, 7 million people were affected with HCV, which showed that Pakistan has one-tenth of the global burden of HCV (Lim et al., 2018).

One of the most common causes of increased disease and death rates in developed countries is cirrhosis. In adults, it is the 14th and in central Europe, it is the 4th dominant element of death. The prevalence is more in developed countries due to the infection

with hepatitis C virus, alcohol misuse, and, increasingly, non-alcoholic liver disease; in sub-Saharan Africa and most parts of Asia, hepatitis B virus infection is the most common. Cirrhosis is referred to as ESLD that leads to necroinflammation and fibrogenesis as a result of liver injury. If transplantation is not done, it leads to death (Harrison et al., 2015). When liver damage progresses, the disease proceeds to be decompensated cirrhosis that is end-stage liver disease. According to global estimates, the mortality rate in 2012 is more than one million due to this liver disease (Peng et al., 2019)

A decrease in the frequency of hepatitis C virus (HCV) infection is a significant cause of cirrhosis (Yoshida et al., 2015). Infection occurs through hepatitis B, and hepatitis C virus is the major source of the development of hepatocellular carcinoma. It is the most common form of liver cancer and contributes to 90% of cases. Hepatitis B virus infection is the most common factor for the development of HCC; it accounts for 50% of cases (Llovet et al., 2021). People having hepatitis C virus infection had a chance of 20 to 30% of developing liver cirrhosis (LC) or hepatocellular carcinoma (HCC) (Imai et al., 2010).

Cirrhosis is considered as one of the silent and asymptomatic diseases as far as it increases the portal pressure and damages the liver. The asymptomatic phase of cirrhosis is also known as compensated cirrhosis, in which no symptoms occur, the disease is undetectable, and the patient has a good quality of life. While on the other side, decompensation is the occurrence of ascites, bleeding, encephalopathy and jaundice. The beneficial effects of Long-term oral BCAA supplementation are: it increases serum albumin levels, and in decompensated cirrhotic patients with hypoalbuminemia (serum albumin level of 3.5 g/dl or lower) improves QOL, whereas BCAA granules show no effect on serum albumin levels in patients with compensated cirrhosis (serum albumin level 3.6-4.5 g/dl) (Fukui et al., 2016).

Liver Cirrhosis (LC) not only affects the liver but also causes many other diseases such as PEM and poor physical health in which a patient loses his/her muscle volume and experience muscle weakness. This condition is known as sarcopenia (Toshikunet al., 2014). Patients with LC must have edema because of fluid retention due to excess drinking. Around 60% of renal sodium retention is present in patients with LC (Tsochatziset al., 2014). In

order to treat these patients improvement of edema is a major therapeutic strategy. Spironolactone which is an aldosterone antagonist either used alone or in combination with diuretics that are furosemide is considered as the main treatment for patients with liver cirrhosis and edema (Sakaida et al., 2020).

In cirrhotic patients, malnutrition increases the risk of mortality and morbidity. The purpose of the current study was to assess the knowledge, belief, and practices about cirrhosis among university students. The study was done to assess the efficiency of students in the clinical field. This study would encourage the students in better learning regarding cirrhosis and to improve the knowledge.

MATERIALS AND METHODS

A cross-sectional study was done at The University of Lahore in 2020. Fifty-eight students participated in this study that was selected through cluster sampling technique. It includes both male and female students. A self-structured questionnaire was used for data collection regarding knowledge, belief, and practices related to cirrhosis and its complications. These questionnaires were filled by students. The first section of the questionnaire was prepared with nine general

questions; the second part consists of four items that are related to the knowledge complications of cirrhosis. The third section of the questionnaire was based on the student's belief of complications of cirrhosis and it has 2 questions that were made to assess the practical application. These questions were closed-ended, so only two options were given to students i.e. yes and no. Data were analyzed with the help of SPSS version 20.0. The variables were reported using percentages and frequencies. The rules and regulations were set by the ethical committee of The University of Lahore. The rights of the research participants were respected. All data were kept confidential. Participants remained anonymous throughout the study.

RESULTS

It was noticed that 48 (82.8%) students were aware of the term cirrhosis while, 10 (17.2%) were unaware. 32 (55.2%) knew about the causes of cirrhosis, while 26 (44.8%) were unaware. 43 (74.1%) subjects heard about 'end-stage liver disease, while 15 (25.9%) did not. 45 (77.6%) students did not know that cirrhotic patients' assessment of liver function is determined by Child-Pugh score, while only 13 (22.4%) knew. 50 (86.2%) of the participants were aware that smoking can enhance the risk of liver

damage, while 8 (13.8%) did not. 52 (89.7%) participants agreed that hepatitis could be transmitted by unsterilized syringes, needles and surgical instruments, while 6 (10.3%) denied it. 36 (62.1%) had heard cirrhotic patients have poor oral health than others, while 22 (37.9%) did not. 35 (60.3%) knew that viral hepatitis is the most common cause of cirrhosis, while 23 (39.7%) did not (Table 1).

Table 1: Frequency distribution of knowledge about general questions

Sr. No.	Questions	n (%)	
		Yes	No
1	Are you familiar with the term 'cirrhosis'?	48 (82.8%)	10 (17.2%)
2	Do you know the causes of cirrhosis?	32 (55.2%)	26 (44.8%)
3	Have you heard about 'end-stage liver disease (ESLD)?	43 (74.1%)	15 (25.9%)
4	Does cirrhotic patient's assessment of liver function determined by Child-Pugh score?	13 (22.4%)	45 (77.6%)
5	Is smoking increasing the risk of liver damage?	50 (86.2%)	8 (13.8%)
6	Have you heard cirrhotic patients have poor oral health than others?	36 (62.1%)	22 (37.9%)
7	Is viral hepatitis is the most common cause of cirrhosis?	35 (60.3%)	23 (39.7%)
8	Is there any vaccine for liver diseases?	27 (46.6%)	31 (53.4%)
9	Can hepatitis be transmitted by unsterilized syringes, needles and surgical instruments?	52 (89.7%)	6 (10.3%)

It was noticed that 36 (62.1%) students knew that dysphagia is the leading cause of malnutrition in cirrhosis, while 22 (37.9%) did not. Similarly, 35 (60.3%) knew that low physical activity levels are inversely associated with insulin resistance in liver cirrhosis patients, while 23 (39.7%) did not. 15 (25.9%) heard that spontaneous bacterial peritonitis occurs 10-30% in patients with cirrhosis, while 43 (74.1%) did not. Moreover, 26 (44.8%) knew that hepatic encephalopathy leads to coma, while 32 (55.2%) did not (Table 2).

Table 2: Frequency distribution of knowledge about complications

Sr. No.	Questions	n (%)	
		Yes	No
1	Is dysphagia the leading cause of malnutrition in cirrhosis?	36 (62.1%)	22 (37.9%)
2	Do low levels of physical activity are inversely associated with insulin resistance in liver cirrhosis patients?	35 (60.3%)	23 (39.7%)
3	Have you heard that Spontaneous bacterial peritonitis occurs 10-30% in patients with cirrhosis?	15 (25.9%)	43 (74.1%)
4	Can hepatic encephalopathy lead to a coma?	26 (44.8%)	32 (55.2%)

According to frequency distribution of belief about complications it was seen that 27 (46.6%) participants believed that end-stage liver disease and cirrhosis were the same, while 31 (53.4%) did not. 45 (77.6%) believed that jaundice leads to liver disease, while 13 (22.4%) did not. 42 (72.4%) believed that hepatitis is a communicable disease, while 16 (27.6%) did not. 31 (53.4%) believed that hepatitis B is more severe than hepatitis C, while 27 (46.6%) did not (Table 3).

Table 3: Frequency distribution of belief about complications

Sr No.	Questions Cirrhosis	n (%)	
		Yes	No
1	Do you think End-stage liver disease and cirrhosis are the same?	27 (46.6%)	31 (53.4%)
2	Do you think jaundice leads to liver disease?	45 (77.6%)	13 (22.4%)
3	Do you think hepatitis is a communicable disease?	42 (72.4%)	16 (27.6%)
4	Do you think hepatitis B is more severe than hepatitis C?	31 (53.4%)	27 (46.6%)

It was noticed in frequency distribution of practice about complications 21 (36.2%) participated in a nutrition education program related to hepatic diseases, while 37 (63.8%)

did not. 14 (24.1%) recommended Child-Pugh score to cirrhotic patients to assess liver function, while 44 (75.9%) did not (Table 4).

Table 4: Frequency distribution of practice about complications

Sr. No.	Questions Cirrhosis	n (%)	
		Yes (n%)	No (n%)
1	Have you ever participated in a nutrition education program related to hepatic diseases?	21 (36.2%)	37 (63.8%)
2	Do you recommend child-Pugh score to cirrhotic patients for the assessment of liver function?	14 (24.1%)	44 (75.9%)

DISCUSSION

The study was conducted to assess the knowledge, belief and practices regarding cirrhosis and its complications among university students. The current study showed that 82.8% of students

were familiar with the term cirrhosis, and 17.2% were not aware of it. A similar study was conducted by Zhang et al. (2019) in which it was assessed how much cirrhosis patients know about their disease on hospital admission. The results were average on admission but

on hospital discharge patients were well aware of the disease, prevention, management and medication. Another study was conducted on hepatocellular carcinoma surveillance by Beg et al. (2016). In this study leaflets given to patients before general consultation, 26% of patients showed improvement in an understanding modification in their lifestyle. This study showed that patients lack basic knowledge on the diagnosis of cirrhosis.

Moreover, the current study showed that 55.2% of students knew the causes of cirrhosis, and 44.8% were unaware of it. On the other hand, 46.6% of students knew the difference between end-stage liver disease and cirrhosis, while 53.1% did not know. A survey conducted by Ramachandran et al. (2020) assessed the knowledge of self-management on 150 patients in which 53% answered correctly. This percentage increased upto 67% after intervention through an educational booklet. Hayward et al. (2017) studied patients with decompensated cirrhosis on their medication knowledge. Medication variation was seen in 50% of ambulatory patients with a low literacy rate. The main barrier to this study was health knowledge that most cirrhosis patients lack. Study results showed that clinical pharmacist

education provides sufficient knowledge for future management of these patients.

Additionally, another study was done on liver cirrhosis in which Alzahrani et al. (2018) reported that the knowledge of liver cirrhosis among Saudi people was good. They were well aware of the risk factors and hepatitis virus that cause liver cirrhosis but they were average in prevention, intervention and treatment. Thus, most of the Saudi population was not aware of the consequences and management of liver cirrhosis. Saleh et al. (2021) conducted a qualitative study which showed that patients with cirrhosis face a large number of barriers in managing their disease. This is due to lack of their understanding about the mechanism of disease and its progression.

In the present study, students were asked whether they participated in any program on hepatic diseases. 36.2% had participated in any of the activities related to hepatic diseases whereas 63.8% of students never attended any program related to hepatic disease. In a similar study by Trinh (2019), although the outcomes demonstrated that patients had a more significant level of the necessary information on cirrhosis than in previous investigations among liver cirrhosis patients, still everything needed significant knowledge about

self-administration of their disease. This lack of understanding might be represent an impediment to the social insurance of suppliers who are attempting to help patients. Furthermore, the current study results showed that 62.1% of students knew about dysphagia regarding cirrhosis, whereas 37.9% were not well aware of it. A similar study conducted by Caber et al. (2014), showed that 61.9% of women aged 84.9 years were enrolled for 24 months. In 47.5% of cases, it was determined that patients had dysphagia. Out of these individuals, 24.2% had aspiration pneumonia. The hospital readmission rate for pneumonia in individuals without dysphagia was 3.67 per 100 people per year, whereas the rate for patients with dysphagia was 6.7 per 100 people per year. A similar study conducted by Rogal et al. (2020) showed that disease knowledge in 52 patients in tertiary care centers was poor. The baseline score of their knowledge was 21% which improved to 60% after the intervention phase through multimedia presentations. One more study conducted on liver cirrhosis in which Aberg et al. (2020) showed that patients with liver fibrosis have reportedly low to moderate consumption of alcohol and a high risk of hepatocellular carcinoma and death due

to liver disease. In this study's results, 79.9% of students have heard about the term end-stage liver disease, whereas 20.1% lack this knowledge. On the other hand, 46.6% of students thought that there is no difference between ESLD and cirrhosis; however, 53.4 % thought that there is a difference between these two terms. A study conducted by Sharma et al. (2021) showed that patients with decompensated cirrhosis undergo decreased quality of life however they felt supported by their caregiver, as the caregiver does not express their emotions during the first post-discharge visit. Another study conducted by Sprange et al. (2020) showed that ninety-seven patients were included. The mean model for end-stage liver disease was 12. Although 97% of patients indicated, it was crucial to know the reality of their illness, only 53% understood that cirrhosis would affect their future quality of life. A study conducted by Ramachandran et al. (2020) showed that 10% of patients with compensated cirrhosis develop ascites. Self-management of ascites can be facilitated by knowing the symptoms of ascites.

The results of the present study showed that 86.2% of students were well aware of bad effects of smoking on the liver, how it enhances its

complications, while on the other hand, 13.8% were unaware of it. Likewise, in a study, Dam et al. (2013) showed that many members were smokers in this investigation. Subsequently, 61% were current smokers at their first admission in the CCHS, and it was found that roughly 26% and 8% of cases of alcoholic liver cirrhosis could be ascribed to smoking in this study among ladies and men, individually. For liver cirrhosis, around 12% of cases for ladies and 6% of cases for men could be attributed to smoking. In the present study, according to 89.7% of students, hepatitis can be transmitted by unsterilized syringes, needles and surgical instruments but 10.3% did not agree with that. Similarly, a study by Reanget al. (2015) was conducted on males and females of age 21.52 and 20.90 years. 99.7% of members knew that hepatitis B is an infection. 92.7% said that hepatitis B is contagious and 63.1% of them knew that hepatitis B transmission could occur through risky sex, infected blood/body fluid contaminated syringe, needle and surgical tools. 84.7% of respondents were vaccinated with three portions of hepatitis B antibody.

CONCLUSION

It was concluded that the majority of the students knew about liver cirrhosis, however, their practices were

not according to their knowledge. The students who did not have enough awareness regarding cirrhosis will have inefficient dealings with the patients suffering from cirrhosis. In the future, if these concerns are not well-addressed among the health professionals during their learning and training period, the community will suffer.

Acknowledgments

None.

Funding

None

Conflict of interest

There is no conflict of interest

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