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Original Research Article

Awareness and Knowledge of Liver Diseases in Relation to Demographic Variables in the General Population of Pakistan

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Abstract: *Liver diseases are a growing public health concern worldwide, yet public awareness and understanding of these conditions remain inadequate.* ***Objectives:*** *To assess the level of awareness and knowledge regarding liver diseases among patients and examine how these vary according to demographic factors such as age, gender, education, and residence.* ***Methods:*** *This cross-sectional, observational study was conducted at the Gastroenterology Outpatient and Indoor departments at Combined Military Hospital Lahore from 1st February 2025 till 30th April 2025. All patients meeting the inclusion criteria will be asked to fill out a standard questionnaire, the regional liver index study, and some questions from previously done research assessing the patients' knowledge, attitude, and practice regarding chronic liver disease. Data were collected using a structured questionnaire.* ***Results:*** *Out of 200 participants, 75% reported general awareness of liver diseases, with hepatitis being the most recognized condition (60%). However, only 19% of respondents demonstrated good knowledge, while 43% and 38% had moderate and poor knowledge. Knowledge levels were significantly associated with education level ($p < 0.001$) and place of residence ($p = 0.03$), but not with gender ($p = 0.22$). Only 28% were aware of the hepatitis B vaccine. Traditional media and the internet were the most cited sources of information.* ***Conclusion:*** *It is concluded that although awareness of liver diseases exists among the population, specific knowledge remains limited, particularly among individuals with lower educational levels and those in rural areas. Targeted educational initiatives are needed to bridge this knowledge gap and improve liver health outcomes.*

Keywords: Knowledge, Liver, Fibrosis, Health, Outcomes

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Introduction

Liver cirrhosis develops from the chronic inflammation of liver parenchyma, leading to irreversible fibrosis and nodule formation. Liver cirrhosis develops over a period from an asymptomatic phase to severely decompensated liver disease (1). Liver cirrhosis is due to several causes, the most common being nonalcoholic fatty liver disease (NAFLD) affecting 15–20% of women and 15–20% of women. Other most common reasons are hepatitis B and C. It has been observed in Pakistan with great concern that patients usually present with advanced liver disease, which has become almost untreatable (2). Studies have shown that early diagnosis and prompt treatment help improve overall morbidity and mortality. In these scenarios, surveillance ultrasonography (USG) holds a particular importance, in cases of NAFLD, lifestyle modifications along with USG are very important for early intervention (3). It is a point of great concern that the most common cause of liver cirrhosis is NAFLD, and the majority of the population in Pakistan is obese, presenting with metabolic syndromes, which can be effectively managed with changing dietary habits and lifestyle modifications (4). It has been observed that the awareness level of the population varies with age, as the younger population is more in touch with social media and has higher awareness levels. Similarly, educational status makes a difference as well. It has also been observed that the urban population generally has more access to all opportunities and is more knowledgeable (5). Research conducted in Malaysia revealed that 84.8% of participants recognized that blood gets purged of damaging substances through liver function. In comparison, 62.4% confirmed that alcohol creates liver diseases, and 65.2% supported the description of hepatitis as liver inflammation. Regarding viral hepatitis B and C knowledge, 59.5% identified it as a viral infection, and 73.7% understood vaccinations as a prevention. People held two thoughts concerning hepatitis B and C transmission involving dining with infected persons (44.7%) and needle stick injury (71.5%). Analysis revealed that people affecting 26.2% of the population understood diverse liver fibrosis stages, with 48.8% understanding that liver fibrosis determines liver disease progression. According to study findings, liver cirrhosis leads to organ failure and liver cancer, which 67.8% of people accepted (6). The same group of people, amounting to a total of 17.1%, knew AF-NASH, and 28.8% and 46.0% understood obesity and lack of exercise as NASH risk factors. People doubted the cost-effectiveness of liver disease screening tests and believed their health condition was good, according to 65.1% of respondents (7). Public awareness about liver disease maintains vital importance for all settings because this study explores basic population awareness and disease-related factors, which will help design additional awareness strategies to prevent these potentially lethal diseases among the public.

Thus, this study aimed to increase awareness and knowledge of chronic liver disease and its complications and their relation to various potential factors, such as age, gender, occupation, education, and area of living.

Methodology

This cross-sectional, observational study was conducted at the Gastroenterology Outpatient and Indoor departments at the Combined Military Hospital Lahore from 1st February 2025 till 30th April 2025. Data were collected from 200 patients according to the inclusion and exclusion criteria of the study. Individuals aged 18 years or older, Patients attending outpatient clinics at the selected facility, willing to provide informed consent, Patients with diagnosed psychiatric disorders impairing comprehension, critically ill patients unable to respond to questionnaires, Individuals below 18 years of age

All patients meeting the inclusion criteria will be asked to fill out a standard questionnaire, the regional liver index study, and some questions from previously done research assessing the patients' knowledge, attitude, and practice regarding chronic liver disease. Data were collected using a

structured questionnaire. It consisted of three parts: demographic information (including age, gender, education level, occupation, income, and residential location), awareness-related questions (assessing if participants had heard of common liver conditions such as hepatitis, cirrhosis, fatty liver disease, and liver cancer), and knowledge-based questions (exploring understanding of liver function, risk factors, symptoms, modes of transmission, preventive practices, and available treatments). Responses to awareness and knowledge questions were scored to quantify each participant's level of understanding. Based on the percentage of correct answers, knowledge levels were categorized into three groups: good knowledge (≥ 75% score), moderate knowledge (50–74%), and poor knowledge (< 50%). This classification allowed for comparative analysis across demographic groups.

Data were entered and analyzed using SPSS v26. Descriptive statistics summarized demographic and response data, including means, frequencies, and percentages. Inferential statistics were applied to examine associations between knowledge levels and demographic variables, including the chi-square test and one-way ANOVA. A significance level of $p < 0.05$ was set for all statistical tests.

Results

Data were collected from 200 patients, with males accounting for 112 (56%) and females 88 (44%). The average age of the participants was **42.6±13.5 years**, indicating a diverse age distribution. Educational attainment varied, with 30% having primary education, 40% secondary, and 30% tertiary qualifications. Most participants (60%) were from urban areas, while 40% resided in rural settings.

Out of the 200 participants, 150 (75%) reported general awareness of liver diseases. Awareness of specific conditions varied, with 120 (60%) having heard of hepatitis, followed by 90 (45%) aware of fatty liver. Only 52 (26%) participants were familiar with cirrhosis, and liver cancer was the least known, with awareness reported by 34 (17%) individuals.

38 (19%) demonstrated good knowledge of liver diseases, scoring 75% or above on the assessment. A larger portion, 86 (43%), had moderate knowledge, falling within the 50–74% range. Meanwhile, 76 participants (38%) exhibited poor knowledge, scoring below 50%.

Television and radio were the most common sources cited by 60 participants (30%). This was followed by the internet and social media platforms, used by 48 participants (24%). Healthcare providers served as a source for 44 individuals (22%), while 28 participants (14%) relied on friends or relatives. Posters and pamphlets were the least utilized sources, mentioned by only 20 participants (10%).

One hundred thirty-eight participants (69%) correctly identified avoiding alcohol misuse as a key strategy. 104 participants (52%) acknowledged a healthy diet and regular exercise, and 92 (46%) recognized the importance of regular health check-ups. 74 participants (37%) correctly cited safe sex practices and the use of sterile needles. Notably, only 56 participants (28%) knew the hepatitis B vaccination as a preventive tool.

Table 1: Demographic Characteristics of Participants

Variable	Details
Gender	Male: 112 (56%)
	Female: 88 (44%)
Age (Mean ± SD)	42.6 ± 13.5 years
Education Level	Primary: 60 (30%)
	Secondary: 80 (40%)
	Tertiary: 60 (30%)
Residence	Urban: 120 (60%)
	Rural: 80 (40%)

Table 2: Awareness of Liver Diseases among Participants

Condition	Number (%)
General Awareness	150 (75%)
Hepatitis	120 (60%)
Fatty Liver	90 (45%)
Cirrhosis	52 (26%)
Liver Cancer	34 (17%)

Table 3: Knowledge Levels among Participants

Knowledge Level	Participants, n (%)
Good (≥75%)	38 (19%)
Moderate (50–74%)	86 (43%)
Poor (<50%)	76 (38%)

Table 4: Source of Information about Liver Diseases

Source of Information	Participants, n (%)
Television/Radio	60 (30%)
Internet/Social Media	48 (24%)
Healthcare Providers	44 (22%)
Friends/Relatives	28 (14%)
Posters/Pamphlets	20 (10%)

Table 5: Knowledge of Preventive Measures

Preventive Measure	Correct Respondents, n (%)
Avoiding alcohol misuse	138 (69%)
Vaccination for hepatitis B	56 (28%)
Safe sex and sterile needles	74 (37%)
Healthy diet and exercise	104 (52%)
Regular health check-ups	92 (46%)

Discussion

This study aimed to evaluate the awareness and knowledge of liver diseases among a diverse group of 200 patients and to explore how these levels correlate with demographic factors. The survey findings demonstrate that participants show a general awareness of 75%, especially regarding hepatitis diagnosis, with 60% identifying it correctly, whereas their understanding of other liver conditions remained lower. Previous research supports the present findings, which demonstrate how public recognition of hepatitis is strong because of awareness efforts, yet other liver conditions remain unnoticed, even though their numbers are rising (7). Most participants demonstrated poor understanding based on their test results, with only 19% scoring at the good level (8). The respondents primarily categorized their knowledge into the poor (38%) and moderate (43%) categories while the remaining scored well (19%) (9). The survey results show most people can identify liver diseases yet their comprehension of disease origins and their warning signs and protective strategies together with treatment plans is minimal (10). The population revealed low understanding about hepatitis B vaccinations even though these vaccines play a critical role in lowering viral hepatitis occurrence rates. Statistical findings demonstrated that selected demographic variables demonstrated a meaningful connection to individual knowledge levels (11). The combination of increased educational attainment and urban living environment linked to improved health-related knowledge according to previously documented health literacy and healthcare access research (12). The evaluation showed that knowledge levels about vaccinations remained identical between both male and female research subjects. Knowledge levels among middle-aged adults between 30 and 49 years old were highest since this group demonstrated the most active involvement with healthcare facilities and media channels (13). The sources from which people obtained information played a vital part in the study. Printed media alongside television broadcasts were the most used information channels (30%) while users turned to Internet-based methods at a rate of (24%) (14). The proportion of healthcare providers as information sources amounted to only 22% though they are trustworthy sources which suggests that doctors could provide more education during healthcare sessions (15). People possess various wrong beliefs about liver disease manifestation because

they think these conditions only affect heavy drinkers and they believe symptoms always appear to indicate disease onset. Patients who possess inaccurate information about liver diseases experience problems with early disease detection together with poor health practices.

Conclusion

It is concluded that while general awareness of liver diseases among the study population was relatively high, specific knowledge about individual conditions, their prevention, and management remains insufficient. The study highlights that knowledge levels are significantly influenced by demographic variables such as education and place of residence, with more informed responses observed among those with higher education and urban backgrounds. Misconceptions and low awareness of key preventive measures, such as hepatitis B vaccination, further emphasize the need for targeted health education.

Declarations

Data Availability statement
All data generated or analysed during the study are included in the manuscript.
Ethics approval and consent to participate
Approved by the department concerned. (IRBEC-MMS-033-24)
Consent for publication
Approved
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Not applicable

Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

SA
Manuscript drafting, Study Design,
AM (PGR)
Review of Literature, Data entry, Data analysis, and drafting article.
RUD (Brig)
Study Design, manuscript review, critical input.

All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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