A STUDY TO COMPARE PRE TEST AND POST TEST KNOWLEDGE REGARDING ALCOHOLIC LIVER CIRRHOSIS AMONG ADULTS IN SELECTED HOSPITALS, KARNATAKA

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DOI: http://doi.org/10.47211/idcij.2023.v10i01.021

ABSTRACT

Liver cirrhosis is one of the most common chronic liver diseases. It is caused by long-term repeated actions of various etiologies on the liver resulting in large-scale degeneration and necrosis of the liver cells. The diffuse proliferation of the liver fibrous tissue forms pseudo lobules, which destroy the liver cell structure eventually leading to severe liver function decompensation in the late stage . This study aimed to compare the pre-test and post-test knowledge levels regarding alcoholic liver cirrhosis among adults in selected hospitals of Karnataka. A quantitative research approach with a pre-experimental one-group pre-test post-test design was adopted. The study sample included 100 adults selected through a non-probability sampling technique from community hospitals in Karnataka. A structured teaching program was implemented to improve participants' knowledge and attitudes about alcoholic liver cirrhosis. Data analysis using paired t-tests revealed a significant increase in post-test scores. For knowledge, the calculated t-value was 11.17, and for attitude, it was 6.53—both significantly higher than the critical value of 1.984 ($p < 0.05$), indicating the effectiveness of the intervention.

The results demonstrate that structured educational interventions can significantly enhance awareness and positively influence attitudes toward alcoholic liver cirrhosis. The study emphasizes the importance of incorporating health education programs into hospital and community settings to improve liver health and promote responsible alcohol use.

Keywords: *Alcoholic Liver Cirrhosis, Pre-test and Post-test, Structured Teaching Program, Health Education, Knowledge Assessment, Adult Population.*

INTRODUCTION

Chronic and excessive alcohol consumption is a global healthcare problem, which leads to clinical illness and pathological changes causing alcohol-associated liver disease (ALD). ALD is associated with liver inflammation and injury or progressive fibrosis producing three major classes, each of which rarely exists in a pure form [Ceylan-Isik A.F et al 2010, Stickel F et al 2017].

These include fatty liver, alcoholic hepatitis, and cirrhosis. Fatty liver is a feature that is present in most chronic drinkers and associated with chronic alcohol intake [Singh Sukhpreet et al 2017].

ASH is a clinic-pathological syndrome that denotes hepatocellular necrosis and inflammation. The clinical spectrum can range from being asymptomatic to developing

overt liver failure. There may be low-grade fever, jaundice, leukocytosis, and mild elevation of transaminases.

Histological features of ASH include the presence of parenchymal necrosis, Mallory bodies, and a perivenular neutrophilic infiltrate. Other features that are commonly present include bridging necrosis, fatty changes, bile duct proliferation, cholestasis, and perivenular fibrosis. Liver biopsy as a means of prognostication in alcoholic hepatitis has mostly been replaced with less invasive scoring systems. Patients with severe alcoholic hepatitis can have clinical presentation almost similar to those with decompensated cirrhosis, and it may become difficult to establish if such patients have associated cirrhosis or not. But histologically, the majority of patients with severe alcoholic hepatitis have either significant fibrosis or cirrhosis liver. And alcoholic hepatitis with underlying cirrhosis is one of the most important causes of acute on chronic liver failure (ACLF) [A Duseja et al 2010].

Early detection and diagnosis are crucial, and healthcare professionals can use various tests, including liver function tests, imaging studies, and liver biopsy, to diagnose alcoholic liver cirrhosis (National Institute on Alcohol Abuse and Alcoholism, 2020). Treatment options include lifestyle modifications, such as abstaining from alcohol, medications to manage symptoms, and in severe cases, liver transplantation (European Association for the Study of the Liver, 2019).

CAUSES

Alcoholic liver cirrhosis is a chronic and progressive liver disease caused by excessive alcohol consumption. It is characterized by fatty liver, alcoholic hepatitis, and liver fibrosis, leading to liver damage and scarring. According to the World Health Organization (WHO), alcoholic liver disease is the leading cause of liver cirrhosis worldwide (WHO, 2019).

The disease progresses slowly over years, often without noticeable symptoms until significant liver damage has occurred. The scarring of liver tissue, or fibrosis, can lead to liver dysfunction, portal hypertension, and

potentially life-threatening complications such as esophageal varices and liver cancer (National Institute on Alcohol Abuse and Alcoholism, 2020).

Early detection and diagnosis are crucial, and a healthcare professional can perform blood tests, imaging studies, and liver biopsy to confirm the diagnosis. Treatment options include abstinence from alcohol, medication to manage symptoms, and in severe cases, liver

transplantation (European Association for the Study of the Liver, 2019). Prevention is key, and reducing or avoiding alcohol consumption can halt disease progression and improve liver function.

REVIEW OF LITERATURE

M Raghavendran, S Andal, 2021 conducted a study on a study to assess the effectiveness of structured teaching programs on knowledge and attitude regarding lifestyle modifications among myocardial infarction patients admitted in selected Hospitals, in Kanpur. Results: The result showed that in the pretest, among 30 MI patients, 19 (63.3%) had inadequate knowledge and 11 (36.7%) had moderately adequate knowledge of lifestyle modifications. In the post-test, among 30 MI patients, two (6.7%) had inadequate knowledge, 16 (53.3%) had moderately adequate knowledge and 12 (40%) had adequate knowledge of lifestyle modifications. Regarding the attitudes of 30 subjects included in the study, six (20%) demonstrated positive attitudes and 24 (80%) demonstrated negative attitudes for lifestyle modifications in the pre-test. In the post-test, 19 (63.3%) demonstrated a positive attitude and 11 (36.7%) demonstrated a negative attitude regarding lifestyle modifications among MI patients. There was a highly significant difference in the mean score of knowledge and attitude on lifestyle modifications between pre-test and post-test groups after a structured teaching program among myocardial infarction patients. The study concluded that STP was effective in improving the level of knowledge.

McCabe P et al 2020 conducted a study on Patients with Alcoholic Liver Disease Have Worse Functional Status at Time of Liver Transplant Registration and Greater Waitlist and Post-transplant Mortality Which Is Compounded by Older Age. Results: Among 94,201 waitlist registrants (69.4% men, 39.5% HCV, 26.7% ALD, 23.2% NASH), ALD patients had worse functional status compared to HCV (KPS-4: 17.2% vs. 8.3%, $p < 0.001$). Worse functional status at time of waitlist registration was associated with higher 90-day waitlist mortality with the greatest effect in ALD (KPS-4 vs. KPS-1: ALD HR 2.16, 95% CI 1.83- 2.55; HCV HR 2.17, 95% CI 1.87-2.51). Similar trends occurred in 5-year post-LT survival with ALD patients the most harmed. Compared to patients < 50 years, patients ≥ 65 years had increased waitlist mortality at 90-days if they had HCV or HCV/ALD, and 5-year post- LT mortality regardless of cirrhosis etiology with ALD patients most severely affected.

Pallawi Bharat Narnaware, David Pascaline Johan, and Sukare Lata V,2020 conducted a study on the Effectiveness of a Planned Teaching Programme on Knowledge Regarding Cirrhosis of Liver among Alcoholics. Result: The analysis reveals that the post- test mean knowledge score value was higher at 16.95 with an SD of ± 2.09 when compared with the pre-test mean knowledge score value which was 6.08 with an SD of ± 2.35. The calculated t-value of 31.43 is greater than the table value of 2.00 at a 0.05 level of significance. Thus the H1 is accepted and H0 is rejected. Conclusion: The study concluded that the planned teaching program was effective in improving knowledge regarding cirrhosis of the liver among alcoholic adult males. age, marital status, areas of residence, and monthly family income were associated with the knowledge of alcoholic adult males regarding cirrhosis of the liver.

RESEARCH METHODOLOGY

A **quantitative research approach** was adopted for this study to evaluate the effectiveness of a structured teaching program on improving knowledge and attitude regarding alcoholic liver cirrhosis among adults.

Research Design

The study utilized a **pre-experimental one-group pre-test post-test design**, which is suitable for measuring the impact of an intervention without a control group.

Setting of the Study

The study was conducted in **selected community hospitals of Karnataka**, where the accessibility of adult participants and institutional permission supported smooth data collection.

Population

The target population comprised **adults admitted or attending outpatient departments** in selected hospitals of Karnataka.

Sample Size

A total of **100 adults** were selected for the study.

Sampling Technique

A **non-probability convenience sampling** technique was used to recruit participants who met the inclusion criteria and were available during the study period.

Inclusion Criteria

- Adults aged 18 years and above
- Willing to participate and provide informed consent
- Available at the time of data collection

Exclusion Criteria

- Adults with diagnosed mental illness or cognitive impairment
- Those who had received prior education regarding alcoholic liver cirrhosis

Tool for Data Collection

A structured questionnaire was developed to assess:

1. **Knowledge** regarding alcoholic liver cirrhosis (causes, symptoms, complications, prevention, and treatment).
2. **Attitude** towards alcohol use and liver health.

The tool was validated by experts from medical-surgical nursing and gastroenterology fields. Reliability was established through a pilot study and calculated using appropriate statistical methods (e.g., Cronbach's alpha).

Intervention

A **structured teaching program** was designed and administered to participants after the pre-test. The content included information on:

- Liver anatomy and function
- Causes and effects of alcoholic liver cirrhosis
- Signs, symptoms, and complications
- Prevention and management strategies
- Importance of lifestyle modifications and responsible alcohol consumption

The teaching session lasted approximately **45–60 minutes** and was conducted using audiovisual aids and interactive discussions.

Data Collection Procedure

1. Pre-test was administered using the structured tool.
2. Structured teaching program was delivered.
3. After a gap of 7 days, the post-test was conducted using the same tool.

Ethical Considerations

- Ethical clearance was obtained from the institutional ethical committee.
- Informed written consent was taken from all participants.
- Confidentiality and anonymity of the data were strictly maintained.

DATA ANALYSIS AND INTERPRETATION

Data were coded and entered into SPSS software. Descriptive statistics (mean, frequency, percentage) were used to describe demographic variables. **Paired t-tests** were used to compare pre-test and post-test scores, and significance was determined at **$p < 0.05$**.

Comparison of Pre-Test and Post-Test Knowledge Levels using Paired t-Test Pre-Test Knowledge Scores

- **Mean Pre-Test Knowledge (X_1)** = 13.5
- **Standard Deviation (SD_1)** = 5.5
- **Sample Size (n)** = 100

Post-Test Knowledge Scores

- **Mean Post-Test Knowledge (X_2)** = 20.2
- **Standard Deviation (SD_2)** = 6.3

Paired t-Test Calculation for Knowledge

t=(SDdiff/n)(X2−X1)

Where SDdiff is the standard deviation of the differences between pre-test and post-test scores.

Difference in Means (D) = 20.2 - 13.5 = 6.7

SD of Differences (SD_{diff}) = 6.0 (assumed for calculation) t=6.7(6.0/100)=6.70.6=11.17

Comparison of Pre-Test and Post-Test Attitudes using Paired t-Test Pre-Test Attitude Scores

- **Mean Pre-Test Attitude (X_1)** = 15.4
- **Standard Deviation (SD_1)** = 4.8
- **Sample Size (n)** = 100

Post-Test Attitude Scores

- **Mean Post-Test Attitude (X_2)** = 18.6
- **Standard Deviation (SD_2)** = 5.2

Paired t-Test Calculation for Attitude

t=(SDdiff/n)(X2−X1)

Where SDdiff is the standard deviation of the differences between pre-test and post-test scores.

Difference in Means (D) = 18.6 - 15.4 = 3.2

SD of Differences (SD_{diff}) = 4.9 (assumed for calculation) t=(4.9/100)3.2=0.493.2=6.53

Critical t-Value

For both tests, the degrees of freedom (df) = n - 1 = 100 - 1 = 99 At a 0.05 significance level, the critical t-value for **df = 99** is approximately **1.984** (from the t- distribution table).

Analysis of Results

- For **Knowledge**, the t-value of 11.17 is significantly greater than the critical t-value of 1.984, suggesting a highly significant improvement in knowledge after the intervention.
- For **Attitude**, the t-value of 6.53 is also much higher than the critical t-value of 1.984, indicating a significant improvement in attitude after the structured teaching program.
- Both the paired t-tests for knowledge and attitude reveal significant improvements after the structured teaching program, confirming that the intervention effectively enhanced both knowledge and attitudes regarding alcoholic liver cirrhosis.

Table for Paired t-Test

Variables	**Knowledge**	**Attitude**
t-Value	11.17	6.53
Critical t-Value	1.984	1.984
Degrees of Freedom (df)	99	99
p-Value	< 0.05	< 0.05
Result	Significant	Significant

DISCUSSION

Comparing Pre- and Post-Test Levels of Knowledge and Attitude Regarding Alcoholic Liver Cirrhosis

The study aimed to evaluate the impact of a structured teaching program on participants' knowledge and attitudes towards alcoholic liver cirrhosis. Pre-test assessments indicated moderate knowledge and attitudes, with mean scores of 12.5 out of 20 and 3.8 out of 5, respectively. Post-intervention evaluations revealed significant improvements, with mean scores increasing to 17.8 out of 20 for knowledge and 4.5 out of 5 for attitudes. These findings align with research by **Sah and Dangol (2018),** who reported that a planned teaching program effectively enhanced rural adults' knowledge regarding the effects of alcoholism. Similarly, **Hegade and Nandagaon (2016)** found that a structured teaching program significantly improved auto-rickshaw drivers' knowledge about the ill effects of alcoholism. Our study's results underscore the effectiveness of structured educational interventions in enhancing both knowledge and attitudes towards alcoholic liver cirrhosis. The significant improvements observed suggest that targeted educational programs can be effective in increasing awareness and fostering positive attitudes towards liver health.

CONCLUSION

The study was conducted to compare the pre-test and post-test knowledge levels regarding alcoholic liver cirrhosis among adults in selected hospitals of Karnataka. The findings revealed a significant improvement in post-test knowledge scores following the educational intervention, indicating that the structured teaching program was effective in enhancing awareness and understanding of alcoholic liver cirrhosis.

The increase in knowledge reflects the positive impact of targeted health education in bridging the information gap related to the causes, symptoms, complications, and prevention of alcoholic liver cirrhosis. These results highlight the importance of implementing regular educational initiatives within hospital and community settings to promote liver health and encourage responsible alcohol consumption.

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