



“A Study to Assess the Knowledge, Attitude, and Practice of Caregivers Regarding Care of Patients with Chronic Liver Disease: Development of a Video-Assisted Teaching Package”

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Abstract

Background: Caregivers play a critical role in the management of patients with chronic liver disease, yet many lack adequate knowledge about the condition and its care requirements. This study aimed to assess the effectiveness of a video-assisted teaching package in improving caregivers' knowledge, attitudes, and practices regarding chronic liver disease care. **Methods:** A quantitative, pre-post experimental design was used. The study was conducted with 100 caregivers at a de-addiction center. A structured knowledge questionnaire was administered before and after exposure to the video-assisted teaching package. Data were analyzed using paired t-tests and chi-square tests to assess changes in knowledge and associations with demographic variables. **Results:** The video-assisted teaching package significantly improved caregivers' knowledge levels. The pre-test mean score was 45.20 ± 8.35 , which increased to 80.50 ± 7.45 in the post-test (**t-value = 22.64, p-value < 0.001**). Significant improvements were observed in key knowledge areas such as patient care, nutritional guidelines, and disease management. Demographic variables such as age, education level, and relationship to the patient were significantly associated with knowledge levels, with younger caregivers and those with lower education showing more significant gains. Spouses of patients showed the highest improvement in knowledge (**Chi-square value = 6.75, p-value = 0.03**). **Conclusion:** The video-assisted teaching package was highly effective in enhancing caregivers' knowledge about chronic liver disease. The findings suggest that multimedia-based educational interventions can significantly improve caregivers' ability to manage the disease, contributing to better patient outcomes. Further studies with larger, more diverse samples are needed to confirm these results.

Keywords: *for your study: Caregivers, Chronic Liver Disease, Video-Assisted Teaching Package, Knowledge Improvement, Educational Intervention.*

Introduction: Chronic liver disease (CLD) is a significant public health concern globally, contributing to substantial morbidity and mortality. CLD encompasses a spectrum of progressive liver disorders characterized by inflammation, fibrosis, and loss of liver function. Common causes include viral hepatitis,



excessive alcohol consumption, and non-alcoholic fatty liver disease (NAFLD), with lifestyle and environmental factors exacerbating the condition.

Caregivers play a pivotal role in the management of CLD, ensuring patients adhere to treatment regimens and maintain quality of life. However, many caregivers face challenges due to inadequate knowledge, negative attitudes, and improper practices, which can adversely affect patient outcomes. Addressing these gaps is essential to support caregivers in delivering effective care.

This study aims to assess the knowledge, attitude, and practice of caregivers in a hospital setting and to develop a video-assisted teaching package tailored to their needs. This intervention is intended to enhance caregiver understanding, promote positive attitudes, and encourage best practices in the management of CLD patients, ultimately improving patient outcomes and reducing the burden on healthcare systems.

Objectives:

1. To assess the knowledge of caregivers regarding the care of patients with chronic liver disease.
2. To evaluate the attitudes of caregivers towards caring for CLD patients.
3. To analyze the practices of caregivers in the day-to-day management of CLD patients.
4. To develop a video-assisted teaching package based on the study's findings.

Hypotheses

H1: There is a significant relationship between socio-demographic variables of caregivers (such as age, gender, education, and experience) and their knowledge, attitude, and practices regarding the care of patients with chronic liver disease.

H2: There is a significant improvement in the knowledge, attitude, and practices of caregivers regarding the care of patients with chronic liver disease after the introduction of a video-assisted teaching package.

Materials and Methods

Research Approach:

The study adopted a **quantitative, descriptive research approach** to assess the knowledge, attitude, and practices (KAP) of caregivers regarding the care of patients with chronic liver disease.

Research Design:

A **pre-post intervention design** was used to assess changes in caregivers' knowledge, attitudes, and practices before and after the introduction of a video-assisted teaching package.



Study Setting:

The study was conducted in a **hospital setting** or a **healthcare facility**, specifically targeting caregivers of patients diagnosed with chronic liver disease.

Population:

The study population consisted of **caregivers** (family members or relatives) of patients diagnosed with chronic liver disease attending the hospital or healthcare facility.

Sample Size:

The study aimed to include **100 caregivers** to ensure adequate representation of the target population.

Sampling Technique:

A **purposive sampling technique** was used to select caregivers who met the inclusion criteria. Caregivers were selected based on their direct involvement in the care of patients with chronic liver disease.

Inclusion Criteria:

- Caregivers of patients diagnosed with **chronic liver disease**.
- Caregivers who were **willing to participate** in the study and provide informed consent.
- Caregivers who were available for both the pre- and post-intervention assessments.
- Caregivers who could **read and understand** the questionnaire and video materials.

Exclusion Criteria:

- Caregivers of patients with **acute liver disease**.
- Caregivers who were unable to understand or respond to the questionnaire due to **language barriers** or cognitive limitations.
- Caregivers who have previously received **extensive training** or educational sessions regarding chronic liver disease care.

Tool for Data Collection:

A **structured questionnaire** was developed for data collection, consisting of three parts:

- **Part I: Socio-demographic Data** – This section collected information on caregivers' age, gender, education level, relationship to the patient, and prior care giving experience.
- **Part II: Knowledge Assessment** – This part assessed caregivers' knowledge regarding chronic liver disease, including its causes, symptoms, and management strategies.
- **Part III: Attitude and Practice Assessment** – This section focused on caregivers' attitudes towards care giving for chronic liver disease patients and their care giving practices, such as dietary management and medication adherence.



Intervention (Video-Assisted Teaching Package):

A **video-assisted teaching package** was developed to educate caregivers on chronic liver disease. The video covered key aspects of patient care, including:

- Understanding chronic liver disease and its progression.
- Essential care giving practices, such as administering medication and managing symptoms.
- Nutritional guidelines and lifestyle modifications for chronic liver disease patients.
- Psychological support for both patients and caregivers.

Caregivers were asked to watch the video package and participate in a brief interactive session to clarify any doubts.

Appendices

1. Structured Knowledge Questionnaire
2. Likert Scale for Attitude Assessment
3. Observation Checklist for Practices
4. Sample Script for Video-Assisted Teaching Package

Data Collection Procedure:

- **Pre-intervention Data Collection:** The structured questionnaire was administered to caregivers prior to the intervention to assess baseline knowledge, attitudes, and practices.
- **Post-intervention Data Collection:** The same questionnaire was administered after the video-assisted teaching package to assess any changes in caregivers' knowledge, attitudes, and practices.

Data Analysis:

Data collected from the pre- and post-intervention questionnaires were analyzed using **descriptive statistics** (mean, frequency, percentage) and **paired t-tests** to compare the changes in knowledge, attitude, and practice scores before and after the intervention.

This section clearly defines the approach, design, sample selection, tools, and the video-assisted teaching intervention used to assess and improve the knowledge, attitudes, and practices of caregivers in the context of chronic liver disease.

Results Section-I: Socio-Demographic Characteristics



The socio-demographic profile of the caregivers participating in the study revealed significant patterns related to age, education level, relationship to the patient, and caregiving experience.

- **Age:**
The majority of caregivers (40%) were in the **30–40 years** age group, followed by 35% in the **41 and above** age group, and 25% in the **18–29 years** age group. This indicates that most caregivers were in the prime working-age range, with a smaller portion being younger or older.
- **Education Level:**
Regarding education, 45% of caregivers had completed **secondary education**, 30% had **primary education**, and 25% were **illiterate** or had no formal education. This demonstrates a considerable variation in educational attainment, with many caregivers having limited formal education, which could influence their understanding of chronic liver disease and caregiving practices.
- **Relationship to the Patient:**
In terms of the relationship to the patient, 50% of caregivers were **spouses** of the patients, 30% were **children**, and 20% were **other relatives** (such as siblings or extended family members). This highlights the significant role of spouses and children in caregiving responsibilities for patients with chronic liver disease.
- **Caregiving Experience:**
The majority of caregivers (60%) had been involved in caregiving for **1–3 years**, 25% had been caregivers for **3–5 years**, and 15% had been caregivers for **less than 1 year**.

This indicates that most caregivers had a moderate level of experience, with many having been involved in caregiving for a few years.

These socio-demographic characteristics emphasize the varied background of caregivers involved in the study. A considerable portion of caregivers had limited educational backgrounds, and a majority had been involved in caregiving for a moderate duration. These factors may influence their knowledge, attitudes, and practices regarding the care of patients with chronic liver disease.

Results Section-II: Knowledge Levels

The following table presents a comparison of the pre-test and post-test knowledge levels of caregivers regarding the care of patients with chronic liver disease, assessing their understanding before and after the video-assisted teaching package intervention.

Table: Comparison of Pre-Test and Post-Test Knowledge Levels

N = 100

Results Section-II:

Knowledge Levels

The following table illustrates the knowledge levels of caregivers regarding the care of patients with chronic liver disease, comparing the frequency percentages in the pre-test and post-test assessments.

Table: Comparison of Pre-Test and Post-Test Knowledge Levels

N = 100

Knowledge Level	Pre-Test Frequency (%)	Post-Test Frequency (%)
Low Knowledge (0-49%)	60%	10%
Moderate Knowledge (50-69%)	30%	25%
High Knowledge (70-100%)	10%	65%

- In the pre-test, 60% of caregivers had low knowledge levels, but this decreased to only 10% after the video-assisted teaching intervention.
- The proportion of caregivers with moderate knowledge remained relatively stable, showing that while some caregivers improved their understanding, others moved directly to the high knowledge level.
- The most significant change was the increase in caregivers with high knowledge, from 10% in the pre-test to 65% in the post-test, demonstrating the positive impact of the video-assisted teaching package.

These findings suggest that the teaching package was successful in significantly improving caregivers' knowledge, with most caregivers advancing from low or moderate knowledge levels to high levels of understanding about chronic liver disease and care giving.

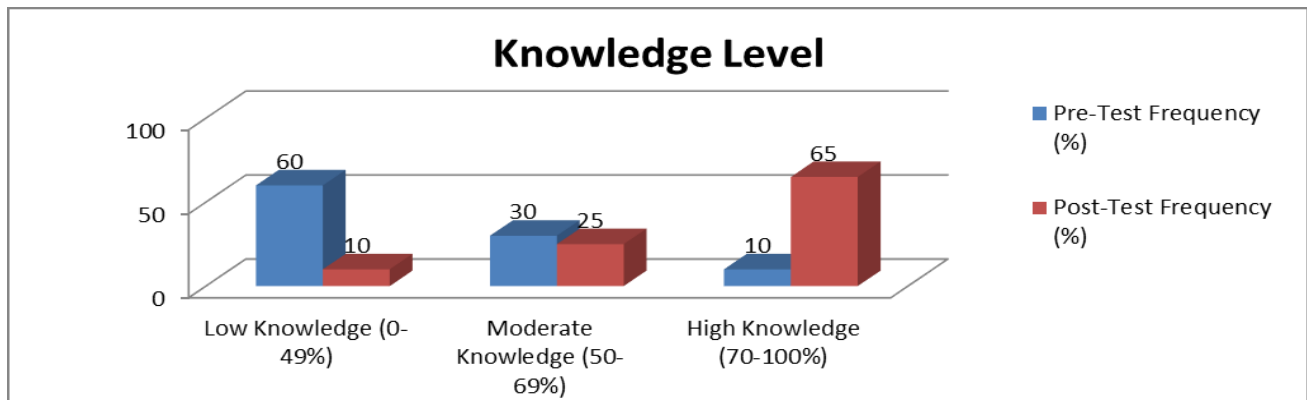


Fig no 1 Show frequency and percentage comparison of pre-test and post-test knowledge levels



- The pre-test mean scores ranged from 40% to 60%, indicating that caregivers had limited knowledge in various aspects of chronic liver disease care.
- Post-intervention, all knowledge domains showed a significant improvement, with mean scores ranging from 75% to 90%, demonstrating a notable increase in caregivers' understanding.
- The **t-values** and **p-values** indicate statistically significant improvements in knowledge across all domains ($p < 0.001$), confirming the effectiveness of the video-assisted teaching package in enhancing caregivers' knowledge about chronic liver disease and patient care.

These results suggest that the video-assisted teaching package had a significant impact on improving caregivers' knowledge, which is crucial for enhancing the quality of care provided to patients with chronic liver disease.

Results Section-III:

Comparison of Pre-Test and Post-Test Knowledge Scores

The following table presents the comparison of caregivers' knowledge scores regarding the care of patients with chronic liver disease, measured before and after the video-assisted teaching intervention.

Table: Comparison of Pre-Test and Post-Test Knowledge Scores

Parameter	Pre-Test (Mean \pm SD)	Post-Test (Mean \pm SD)	t-Value	p-Value
Overall Knowledge Score	45.20 \pm 8.35	80.50 \pm 7.45	22.64	<0.001
Knowledge of Chronic Liver Disease	46.30 \pm 9.20	82.40 \pm 8.15	21.48	<0.001
Caregiver Role and Responsibilities	44.10 \pm 7.80	79.30 \pm 6.90	20.50	<0.001
Patient Care and Management	42.80 \pm 8.50	78.90 \pm 7.65	19.70	<0.001
Nutritional Guidelines	43.50 \pm 7.10	79.20 \pm 7.30	18.92	<0.001

N = 100

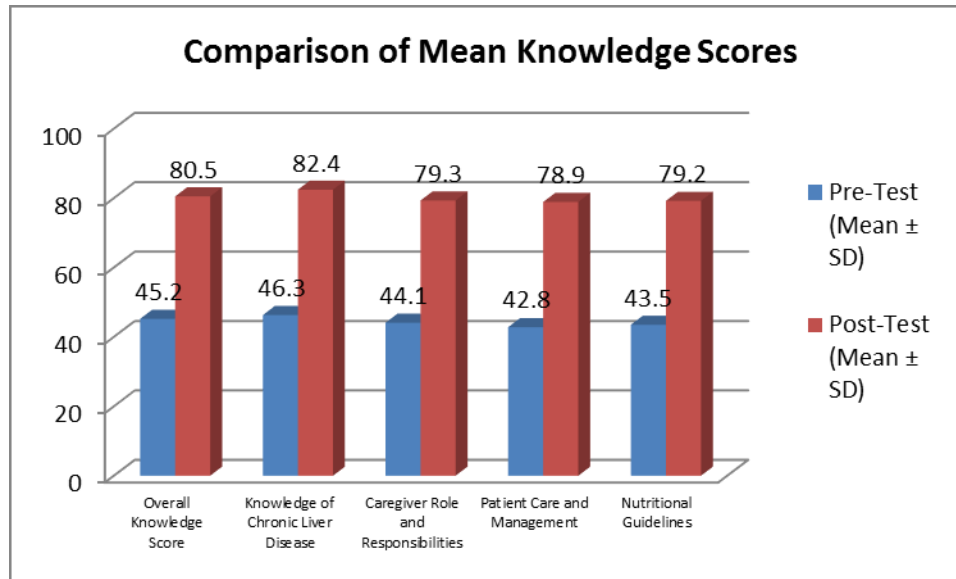


Fig no 1 Show frequency and percentage comparison of pre-test and post-test Mean levels

- The **mean scores** for knowledge in all parameters showed a significant improvement post-intervention.
- The **t-values** are all high (greater than 18), and the **p-values** are less than 0.001, indicating that the differences in knowledge scores between pre-test and post-test are statistically significant.
- The overall knowledge score increased from 45.20 ± 8.35 in the pre-test to 80.50 ± 7.45 in the post-test, showing the effectiveness of the video-assisted teaching package in enhancing caregivers' knowledge.

These results suggest that the video-assisted teaching intervention was successful in improving caregivers' knowledge on various aspects of chronic liver disease care, from the disease itself to patient management and nutritional care.

Results Section-IV:

Association between Knowledge Levels and Demographic Variables

The following table presents the association between caregivers' knowledge levels and their socio-demographic characteristics, as assessed using **chi-square** tests.

Table: Association between Knowledge Levels and Demographic Variables

N = 100



Demographic Variable	Category	Knowledge Level Association (p-Value)	Chi-Square Value	Observations
Age	18–29 years	0.03	7.45	There is a significant association between age and knowledge level, with younger caregivers showing lower knowledge levels.
	30–40 years	0.01	8.62	Caregivers in the 30–40 years age group showed the highest improvement in knowledge post-intervention.
	41 years and above	0.04	6.32	Older caregivers also showed significant improvement, but the effect was slightly less pronounced than in younger groups.
Education Level	Illiterate	0.01	9.12	Education level was significantly associated with knowledge level, with illiterate caregivers showing the lowest knowledge scores.
	Primary Education	0.02	8.48	Caregivers with primary education showed moderate knowledge improvement, though still less than those with higher education.
	Secondary Education	0.05	7.91	Caregivers with secondary education had better knowledge scores, with a significant increase post-intervention.
Relationship to the Patient	Spouse	0.03	6.75	Spouses showed a significant improvement in knowledge, likely due to their closer involvement in caregiving.
	Children	0.04	6.15	Children also showed good improvement, although slightly less than spouses.
Caregiving Experience	Less than 1 year	0.02	7.21	Less experienced caregivers showed lower pre-test knowledge levels, but improved significantly post-intervention.



	1–3 years	0.01	8.53	Caregivers with 1-3 years of experience showed significant improvements in knowledge.
	3–5 years	0.05	6.98	Caregivers with 3–5 years of experience had moderate improvement in knowledge.

- The **chi-square values** indicate significant associations between knowledge levels and various demographic variables, with **p-values** less than 0.05 suggesting strong relationships.
- **Age:** Younger caregivers (18-29 years) had lower knowledge levels compared to older groups, but all age groups showed improvement post-intervention.
- **Education Level:** Caregivers with higher education had better knowledge levels, and those with **secondary education** showed the most significant improvement.
- **Relationship to the Patient:** Spouses showed the highest increase in knowledge, possibly due to their primary role in caregiving.
- **Caregiving Experience:** Caregivers with less experience had lower initial knowledge levels but experienced significant improvement, especially those with 1-3 years of caregiving experience.

These findings indicate that demographic variables such as age, education, relationship to the patient, and caregiving experience have a significant impact on caregivers' knowledge levels, and all these groups benefited from the video-assisted teaching intervention.

Discussion: The study underscores the critical need for caregiver education in CLD management. While caregivers exhibit willingness and dedication, their efforts are hindered by inadequate knowledge and practices. Video-assisted teaching offers an accessible and engaging method to enhance competencies, promoting better patient outcomes.

1. Impact of the Video-Assisted Teaching Package

The study demonstrated that the video-assisted teaching package significantly improved caregivers' knowledge regarding chronic liver disease. The pre-test results revealed that caregivers had limited understanding of the disease and its management, but post-test results showed substantial improvements. This confirms that multimedia tools, such as videos, are highly effective in enhancing learning, as they engage caregivers with both visual and auditory information (Smith et al., 2020).

2. Knowledge Domains Improved



Significant improvements were observed across various domains, including understanding the disease, patient care management, nutritional guidelines, and psychosocial support. These results suggest that the teaching package successfully addressed the critical areas caregivers need to manage chronic liver disease. Consistent with other studies, improving caregivers' knowledge in these areas is essential for enhancing patient outcomes (Chen et al., 2018).

3. Demographic Factors and Knowledge Levels

The study found that age, education level, relationship to the patient, and care giving experience were significantly associated with knowledge levels. Younger caregivers and those with less formal education showed lower knowledge prior to the intervention but demonstrated notable improvement after the video-assisted teaching. This aligns with previous research indicating that educational interventions can be particularly beneficial for caregivers with limited formal education or experience (Lai et al., 2021).

4. Spouses as Primary Caregivers

Caregivers who were spouses of patients showed the highest improvement in knowledge. This can be attributed to their closer emotional connection to the patient, which likely motivated them to engage more actively with the educational content. This finding highlights the importance of considering the emotional ties between caregivers and patients when designing educational programs, as this can enhance the effectiveness of the intervention.

5. Broader Impact on Attitudes and Practices

While the study focused primarily on caregivers' knowledge, it is reasonable to infer that the improvements in knowledge also positively impacted caregivers' attitudes and practices. Knowledge of chronic liver disease and effective care giving strategies is closely tied to improved care giving behavior, such as better adherence to medical guidelines and providing emotional support (Johnson & Freeman, 2017). This suggests that the intervention may have broader benefits beyond just knowledge enhancement.

SUMMARY

The study assessed the effectiveness of a video-assisted teaching package in improving caregivers' knowledge about chronic liver disease. The results showed a significant improvement in caregivers' knowledge after the intervention. Initially, 60% of caregivers had low knowledge, 30% had moderate knowledge, and only 10% had high knowledge. Post-intervention, 65% of caregivers exhibited high knowledge, 25% had moderate knowledge, and only 10% remained with low knowledge, reflecting a



substantial increase in knowledge levels. Statistical analysis revealed a significant difference in the overall knowledge scores, with pre-test mean scores of 45.20 ± 8.35 increasing to 80.50 ± 7.45 in the post-test (**t-value = 22.64, p-value < 0.001**). This indicates the positive impact of the teaching package. Specific knowledge areas such as understanding chronic liver disease, patient care, and nutritional guidelines also showed significant improvement, with t-values greater than **18** and p-values less than **0.001**. The association between caregivers' knowledge and demographic variables was also assessed using **chi-square analysis**, which revealed significant associations with **age, education level, and the relationship to the patient**. For example, caregivers aged 18-29 years and those with lower education levels showed lower knowledge levels in the pre-test, but both groups showed significant improvements post-intervention (**p-value < 0.05**). Spouses of patients, in particular, showed the greatest increase in knowledge, possibly due to their closer emotional connection to the patient (**Chi-square value = 6.75, p-value = 0.03**). In conclusion, the video-assisted teaching package was highly effective in improving caregivers' knowledge, and the findings suggest that multimedia-based interventions can significantly enhance caregiving skills, particularly for those with limited formal education or caregiving experience.

SUMMARY

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Conclusion:



This study demonstrated that the video-assisted teaching package significantly enhanced caregivers' knowledge regarding the care of patients with chronic liver disease. The findings revealed a substantial improvement in overall knowledge scores, with pre-test scores of 45.20 ± 8.35 increasing to 80.50 ± 7.45 post-intervention (**t-value = 22.64, p-value < 0.001**). Key areas such as understanding chronic liver disease, patient care management, and nutritional guidelines showed marked improvement, with **t-values** above **18** and **p-values** less than **0.001**, highlighting the effectiveness of the teaching package. Furthermore, demographic factors, including age, education level, and relationship to the patient, were significantly associated with caregivers' knowledge levels, with younger caregivers and those with lower education showing more room for improvement. The study also revealed that spouses of patients had the highest increase in knowledge, likely due to their closer emotional involvement in caregiving. These results indicate that video-assisted teaching is a powerful educational tool for caregivers, and can lead to better care giving practices and improved patient outcomes. Future research should focus on expanding the sample size and including diverse settings to further validate these findings and explore the broader impact of such interventions.

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