RESEARCH PAPER

Effect of an Information Booklet on Knowledge Regarding Non-Alcoholic Fatty Liver Disease among Adults: A Pre-Experimental Study

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ABSTRACT

Background: Non-alcoholic fatty liver disease (NAFLD) is a common chronic liver condition closely associated with metabolic risk factors. It may remain unrecognized because the early stages are frequently asymptomatic. Knowledge of risk factors, potential complications and practical prevention strategies is therefore important, particularly among young adults.

Objective: To assess the effectiveness of an information booklet on knowledge regarding NAFLD among adults.

Methods: A quantitative, pre-experimental one-group pre-test–post-test design was used. Eighty adults aged 18–35 years were selected by non-probability convenience sampling. Data were collected using a structured questionnaire that included demographic characteristics and 14 multiple-choice questions on NAFLD. Participants completed a knowledge assessment, received an information booklet and subsequently underwent post-test assessment. The instrument demonstrated test–retest reliability of $r = 0.82$; a pilot study with 10 participants established the feasibility of the procedure.

Results: At baseline, 12 (15.00%) participants had poor knowledge, 61 (76.25%) average knowledge, six (7.50%) good knowledge and one (1.25%) excellent knowledge. After booklet administration, no participants were in the poor category; three (3.75%) had average, 42 (52.50%) good and 35 (43.75%) excellent knowledge. Mean knowledge increased from 5.20 ± 2.03 to 10.95 ± 2.02, with a reported statistically significant difference ($p < 0.001$).

Conclusion: The information booklet was associated with a marked improvement in NAFLD knowledge. Accessible written educational material may complement community health education, although the lack of a control group limits causal interpretation and long-term retention was not assessed.

Implications: Nurse-led educational programmes can incorporate carefully validated booklets alongside individual counselling. Future studies should include comparison groups, transparent scoring criteria, delayed follow-up and assessment of everyday preventive practices.

Key words: Non-alcoholic fatty liver disease; information booklet; knowledge; adults; health education; pre-experimental study

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INTRODUCTION

The liver contributes to nutrient metabolism, detoxification, protein synthesis and maintenance of physiological balance. Non-alcoholic fatty liver disease (NAFLD) describes the accumulation of fat in the liver in people without substantial alcohol exposure or other clearly dominant causes of steatosis. The condition comprises a spectrum ranging from isolated steatosis to steatohepatitis and, in some individuals, progressive fibrosis, cirrhosis and liver cancer. Earlier clinical literature used the terms NAFLD and non-alcoholic steatohepatitis (NASH); more recent nomenclature has moved toward metabolic dysfunction-associated steatotic liver disease (MASLD). This manuscript retains NAFLD because it was the terminology used in the original study and its measurement tool. [1,2,11]

NAFLD is frequently associated with obesity, insulin resistance, type 2 diabetes, abnormal lipid concentrations and insufficient physical activity. These determinants have become increasingly relevant as diets and daily routines change. A synthesis of studies conducted in India reported substantial disease prevalence among adults, while international evidence indicates a large and growing global burden. Differences in diagnostic methods and study populations mean that prevalence estimates should be interpreted with care; nevertheless, the public health significance is clear. [3–5,9]

Early NAFLD commonly produces few recognizable symptoms, and a person may not seek advice until the

condition is detected incidentally during routine evaluation. Misconceptions may further delay recognition: fatty liver is sometimes viewed as exclusively alcohol-related, and the influence of diabetes, excess body weight and sedentary behaviour may be underestimated. Community research has documented low awareness and misunderstandings about fatty liver disease, even where related metabolic disorders are common. [6–8]

Knowledge-focused interventions offer a practical starting point for prevention. An information booklet can communicate disease meaning, contributing factors, possible consequences, healthy dietary patterns, physical activity and indications for seeking professional assessment in a form that learners can review repeatedly. Unlike an oral teaching session alone, written material remains available for later consultation and may be shared within households. However, a gain in questionnaire scores should not be assumed to demonstrate an actual change in lifestyle behaviour or clinical outcomes. [10–12]

The present study examined whether providing an information booklet was followed by improved NAFLD knowledge among adults. The focus was educational rather than diagnostic: participants were assessed on what they knew about the condition, not screened for liver disease. The work contributes local evidence about a low-cost health teaching approach and provides a basis for more rigorous, controlled evaluations.

Need of the Study

The need for this study arises from the combination of a substantial metabolic liver disease burden and limited public understanding of its prevention. Individuals may consider themselves healthy because they experience no pain or other obvious symptoms, although risk factors may already be present. Education can help correct the idea that fatty liver disease is necessarily caused by alcohol, explain the significance of obesity and diabetes, and encourage appropriate professional advice. In community and nursing settings, brief and understandable written materials may reach adults who cannot attend lengthy teaching sessions. [3,6–8]

Adults in the 18–35-year age range are establishing habits relating to work, food, activity and health-care use. The growing availability of processed foods and screen-based activities makes early preventive information particularly relevant. A booklet is feasible to reproduce, distribute and revisit without specialized equipment. Assessing knowledge before and after its distribution provides preliminary evidence about whether the content is understandable and educationally useful, while identifying the need for future studies of retention, behavioural change and disease risk. Written educational materials are particularly relevant where health professionals have limited time for individual teaching. Findings can guide improvement of local awareness initiatives without substituting for medical assessment or risk-based clinical care. [8,11,12]

Scholar's View

From a nursing education perspective, health information is useful when learners can understand it, relate it to everyday decisions and return to it when necessary. A booklet may support these functions by presenting consistent messages in an accessible sequence. The researcher considers awareness an essential first step, not the final outcome of prevention. Better knowledge should ideally be followed by informed choices regarding diet, regular physical activity, weight management and timely consultation. Future research should therefore assess not only knowledge scores but also whether participants retain the information and translate it into protective health practices. Repeated review and a chance to ask questions could strengthen practical understanding.

Aim of the Study

To assess knowledge regarding non-alcoholic fatty liver disease among adults before providing an information booklet. To administer the booklet as a structured educational intervention. To evaluate the change in knowledge observed after the intervention.

RESEARCH METHODOLOGY

OBJECTIVES

1. To assess pre-test knowledge regarding NAFLD among selected adults.
2. To administer an information booklet regarding NAFLD.
3. To assess post-test knowledge regarding NAFLD among the same adults.
4. To compare pre-test and post-test knowledge scores to examine the effectiveness of the booklet.
5. To assess the pre-test knowledge regarding Non-Alcoholic Fatty Liver Disease among adults.
6. To develop and administer an information booklet regarding Non-Alcoholic Fatty Liver Disease among adults.
7. To assess the post-test knowledge regarding Non-Alcoholic Fatty Liver Disease among adults.
8. To evaluate the effectiveness of the information booklet by comparing pre-test and post-test knowledge scores.

9. To determine the association between knowledge scores and selected demographic variables.

Research Approach, Type and Design: A quantitative research approach with a pre-experimental, one-group pre-test–post-test design was adopted to evaluate the effectiveness of the information booklet on knowledge regarding NAFLD among adults.

Sample Size and Sampling Technique: The study included 80 adults aged 18–35 years, selected using a non-probability convenience sampling technique.

Tool Description:A structured questionnaire consisting of two sections was used. Section I included demographic characteristics, while Section II comprised 14 multiple-choice questions assessing knowledge regarding NAFLD. Each correct response was awarded one mark, with a maximum possible score of 14. An information booklet was administered after the pre-test, followed by a post-test assessment.

Reliability: The reliability of the structured knowledge questionnaire was established using the test–retest method among 10 participants, yielding a reliability coefficient of r = 0.82.

Pilot Study: A pilot study was conducted among 10 participants to assess the feasibility of the study and was found to be satisfactory.

Statistical Analysis: Data were analysed using descriptive statistics, including frequency, percentage, mean and standard deviation, along with inferential statistics to evaluate the effectiveness of the information booklet and associations with selected demographic variables.

RESULTS

All 80 participants were included in the reported pre-test and post-test results. Their ages ranged from 18 to 35 years. The largest age group was 18–20 years (30.00%), followed by 26–30 years (26.25%), 21–25 years (25.00%) and 31–35 years (18.75%). The sample comprised 50.00% males, approximately 48.80% females and 1.20% transgender participants. Higher-secondary education was reported by 40.00%, secondary education by 27.50%, graduation by 25.00% and postgraduate education by 7.50%. A mixed diet was reported by 70.00%; 22.50% were vegetarian and 7.50% reported a non-vegetarian diet. Occupations included business or entrepreneurship (32.50%), professional work (27.50%), unemployment (22.50%) and student status (17.50%). These descriptive characteristics are summarized in prose as demographic tables were not required.

Table 1. Pre-test knowledge regarding NAFLD (n = 80)

Knowledge level	Frequency (n)	Percentage (%)
Poor	12	15.00
Average	61	76.25
Good	6	7.50
Excellent	1	1.25
Total	80	100.00

At baseline, 61 participants (76.25%) were classified as having average knowledge and 12 (15.00%) as having poor knowledge. Only seven participants in total (8.75%) were in the good or excellent categories. The reported mean pre-test knowledge score was 5.20 ± 2.03 out of a possible 14 points. This distribution indicates an opportunity for targeted education before booklet distribution.

Table 2. Post-test knowledge regarding NAFLD (n = 80)

Knowledge level	Frequency (n)	Percentage (%)
Poor	0	0.00
Average	3	3.75
Good	42	52.50
Excellent	35	43.75
Total	80	100.00

Following the intervention, 42 participants (52.50%) had good knowledge and 35 (43.75%) had excellent knowledge. Three (3.75%) remained in the average category, while none were classified as having poor knowledge. Thus, the combined percentage reporting good or excellent knowledge increased from 8.75% to 96.25%. The mean post-test score was 10.95 ± 2.02, a descriptive mean gain of 5.75 points. The source reports the pre–post difference as statistically significant ($p < 0.001$). No further estimate of uncertainty was reported.

Figure 1. Percentage distribution of NAFLD knowledge levels before and after the information booklet (n = 80).

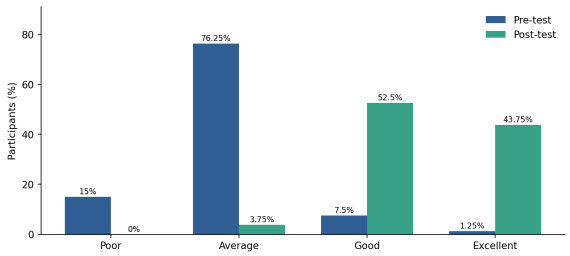


Figure 1 highlights the shift from predominantly average pre-test knowledge to predominantly good and excellent post-test knowledge. It depicts group-level percentages only. Although the study also reports associations between knowledge and demographic variables—including educational qualification ($\chi^2 = 20.8$, $p < 0.01$), occupation ($p < 0.05$), gender ($\chi^2 = 4.62$, $p = 0.52$) and diet ($\chi^2 = 0.98$, $p = 0.99$)—these are not tabulated because the requested result presentation excludes association tables. The direction of

association with education was reported as favouring participants with higher educational qualifications; detailed contingency counts were not provided.

DISCUSSION

The present study evaluated the effectiveness of an information booklet on knowledge regarding Non-Alcoholic Fatty Liver Disease (NAFLD) among 80 adults. The findings revealed that 76.25% of participants had average knowledge and 15% had poor knowledge during the pre-test. Following the intervention, 52.5% achieved good knowledge and 43.75% attained excellent knowledge. The mean knowledge score increased significantly from 5.20 ± 2.03 to 10.95 ± 2.02 ($p < 0.001$), indicating a significant improvement in knowledge following administration of the information booklet.

These findings are consistent with the study conducted by **Morrill et al. (2021),** who assessed awareness, knowledge and misconceptions regarding NAFLD among Mexican-origin women. Their study identified inadequate knowledge and misconceptions concerning fatty liver disease, emphasizing the importance of targeted health education. Although their study did not evaluate an information booklet, its findings support the need for educational interventions to address knowledge gaps.[6]

Similarly, **Singh et al. (2020)** reported that awareness regarding NAFLD remained considerably low among the United States population despite increasing disease prevalence. Their findings highlight the need for effective awareness programmes, supporting the educational relevance of the present intervention.[7]

Shalimar et al. (2022) reported a substantial prevalence of NAFLD in India, emphasizing its growing public health importance.[3] Furthermore, **De and Duseja (2021**) highlighted the importance of lifestyle modification, metabolic risk management and preventive awareness in addressing NAFLD among Indian populations.[8]

The present findings suggest that information booklets may serve as effective educational resources for improving disease-related knowledge. However, the pre-experimental design, convenience sampling and absence of a control group limit causal interpretation. Further randomized controlled studies with larger samples are recommended to evaluate long-term knowledge retention and behavioural changes.

CONCLUSION

The study found a marked improvement in knowledge regarding non-alcoholic fatty liver disease following administration of an information booklet to 80 selected adults aged 18–35 years. The proportion of participants classified as having good or excellent knowledge increased from 8.75% before the intervention to 96.25% after it, and the reported mean knowledge score rose from 5.20 to 10.95 out of 14. The manuscript reports a statistically significant pre-test–post-test difference ($p < 0.001$). These results indicate that written health education was associated with better immediate understanding of NAFLD in this study group.

For nursing and community health practice, a concise information booklet may provide a useful supplement to counselling by communicating consistent messages about fatty liver, associated metabolic risks and potential preventive measures. However, the pre-experimental design and lack of a comparison group mean that causal effectiveness cannot be established conclusively. The available results do not determine whether information was retained or whether lifestyle behaviour changed. Further research using controlled designs, documented intervention protocols and follow-up assessments is needed before broader claims are made. Within these limitations, the findings support continued development and evaluation of accessible, evidence-informed patient education materials. Practical implementation should include clear language, culturally suitable examples and opportunities for participants to clarify misunderstandings.

Conflict of Interest

The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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