Effectiveness of a Multimedia Programme on Awareness Regarding Health Benefits of Millets among People with Non-Communicable Diseases in Selected Areas of Indore District

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Abstract— Millets are nutrient-dense, climate-resilient grains with potential benefits for people living with non-communicable diseases (NCDs), yet awareness about their health value remains limited. Objective: To assess baseline awareness regarding the health benefits of millets among people with NCDs and evaluate the effectiveness of a multimedia educational programme. Methods: A pre-experimental one-group pre-test/post-test study was conducted among 300 adults with NCDs in selected areas of Indore District using purposive sampling. Participants completed a structured 20-item awareness questionnaire before and after the multimedia intervention. Descriptive statistics and a paired z-test were used for analysis. Results: The pre-test mean awareness score was 9.63±2.51, which increased to 18.13±2.55 after the intervention. The improvement was statistically significant ($z=15.06$, $p<0.001$). Before the intervention, 60.0% of participants had moderate awareness and 40.0% had adequate awareness; after the intervention, 57.7% achieved excellent awareness, 37.7% adequate awareness, and only 4.7% remained in the moderate category. Conclusion: The multimedia programme was highly effective in improving awareness regarding the health benefits of millets among adults with NCDs. Educational strategies using visual and audio formats may strengthen dietary awareness and support preventive community health practice.

Keywords: millets, multimedia education, awareness, non-communicable diseases, community health nursing, pre-test post-test study.

INTRODUCTION

Millets are among the oldest cultivated grains and are recognized for their high fibre content, low glycaemic index, mineral richness, and adaptability to dryland agriculture. These properties make them particularly relevant for populations vulnerable to diabetes, obesity, cardiovascular disease, and other non-communicable diseases (NCDs).

The source thesis highlights that millets may help reduce obesity, hypertension, cardiovascular risk, constipation, and glycaemic burden, while also serving as gluten-free alternatives for individuals requiring diet modification. Despite these advantages, millet consumption and awareness have declined in many settings because of dietary transition toward polished rice and wheat and limited public education.

In community settings, awareness is a necessary first step before behavior change. The present study therefore examined whether a multimedia programme using audio-visual educational content could improve awareness regarding the health benefits of millets among people with NCDs in selected areas of Indore District.

Objectives

- To assess pre-existing awareness regarding the health benefits of millets among people with NCDs.
- To evaluate the effectiveness of a multimedia programme on awareness regarding the health benefits of millets.
- To examine the association between pre-test awareness and selected demographic variables.

METHODS

Study design: Pre-experimental one-group pre-test/post-test design.

Setting and participants: The study was conducted in selected Khudel areas of Indore District among 300 adults with NCDs identified through purposive sampling.

Eligibility: Participants were adults with NCDs who were willing to participate and available during data collection.

Intervention: The intervention was a multimedia programme using audio-visual educational material focused on millet types and their health benefits.

Tool: A structured 20-item awareness questionnaire was used. Scores were classified as excellent (16–20), adequate (11–15), moderate (6–10), and inadequate (1–5).

Reliability: The questionnaire reliability coefficient reported in the thesis was 0.79.

Analysis: Frequency, percentage, mean, standard deviation, and paired z-test were used. A chi-square based association table was also reported in the thesis.

Editorial note: Some percentages in the thesis tables are internally inconsistent with the reported frequencies. In this article, percentages in descriptive tables and figures were recalculated from the frequencies using N=300 to produce publication-ready tables while preserving the original counts and reported inferential results.

RESULTS

Participant characteristics

Variable	Category	n	%
Age	29–38 years	90	30.0
	39–48 years	100	33.3
	49 years and above	110	36.7
Gender	Female	146	48.7
	Male	154	51.3
Type of NCD	Hypertension/CVD/stroke	140	46.7
	Diabetes	85	28.3
	Obesity/thyroid	43	14.3
	Chronic respiratory/other	32	10.7
Dietary pattern	Vegetarian	83	27.7
	Non-vegetarian	72	24.0
	Eggetarian	70	23.3
	Gluten-free	40	13.3
	Others	35	11.7
Prior awareness of millets	Yes	100	33.3
	No	200	66.7
Source of information	Social media	180	60.0
	Newspaper	60	20.0
	Friends/family	40	13.3
	Others	20	6.7

Table 1. Sociodemographic characteristics of participants (percentages recalculated from frequencies).

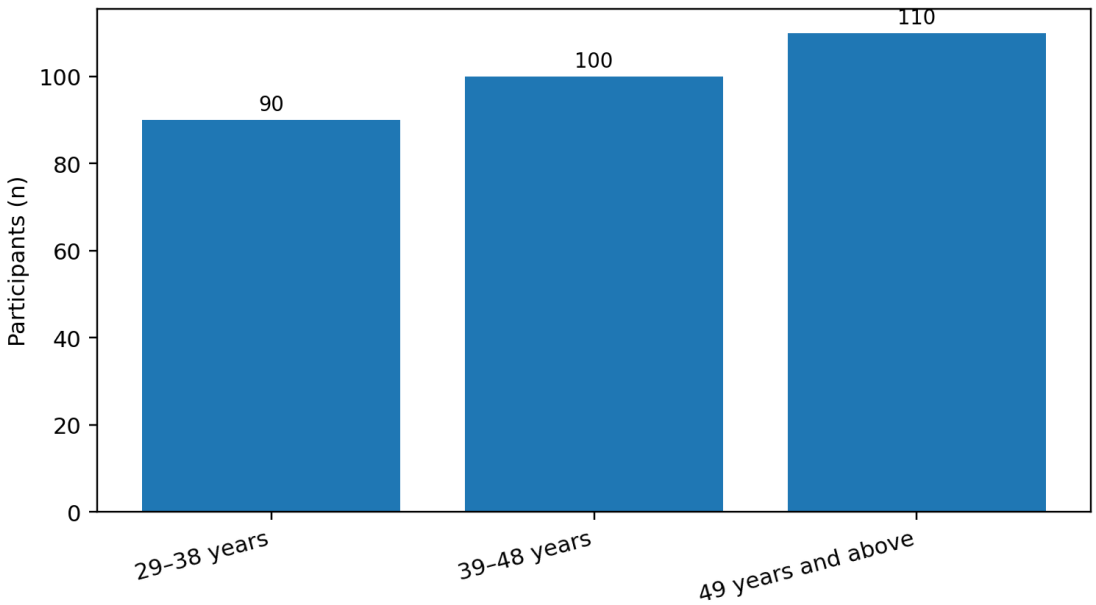

Figure 1. Age distribution of participants.

Awareness score categories before and after intervention

Awareness category	Score range	Pre-test n (%)	Post-test n (%)	Change in n
Excellent (16–20)	16–20	0 (0.0)	173 (57.7)	173
Adequate (11–15)	11–15	120 (40.0)	113 (37.7)	-7
Moderate (6–10)	6–10	180 (60.0)	14 (4.7)	-166
Inadequate (1–5)	1–5	0 (0.0)	0 (0.0)	0

Table 2. Distribution of awareness categories in pre-test and post-test.

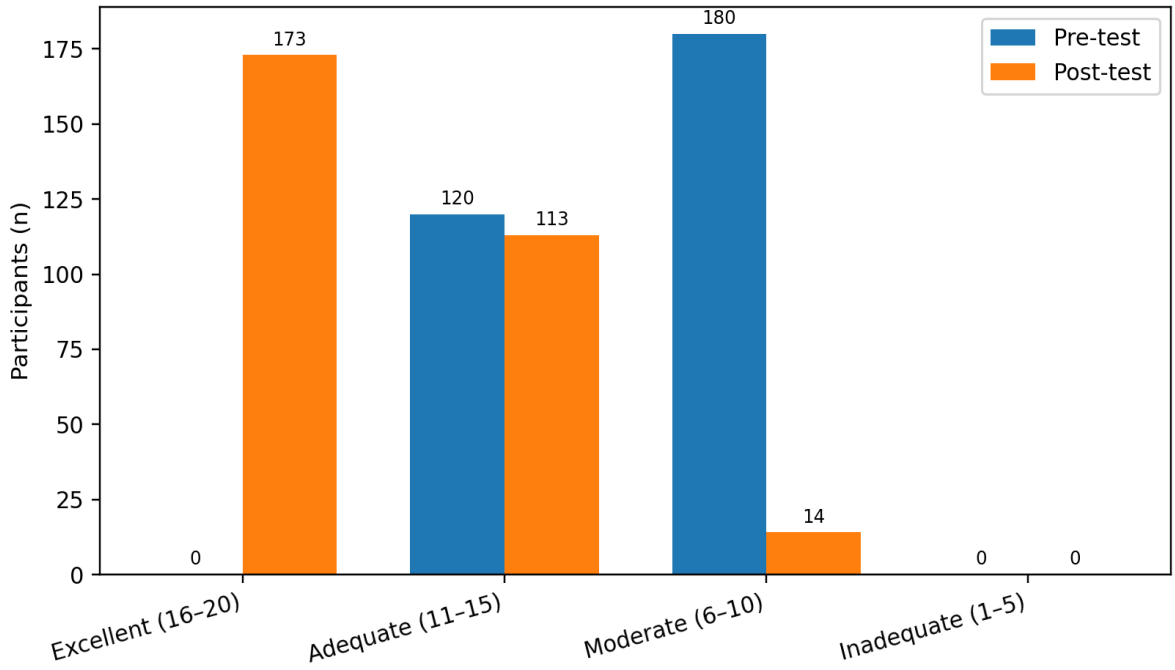

Figure 2. Category-wise comparison of pre-test and post-test awareness scores.

Effect of the multimedia programme on awareness score

Assessment	N	Mean	SD	z-value	p-value
Pre-test	300	9.63	2.51	15.06	<0.001
Post-test	300	18.13	2.55		

Table 3. Summary statistics for pre-test and post-test awareness scores.

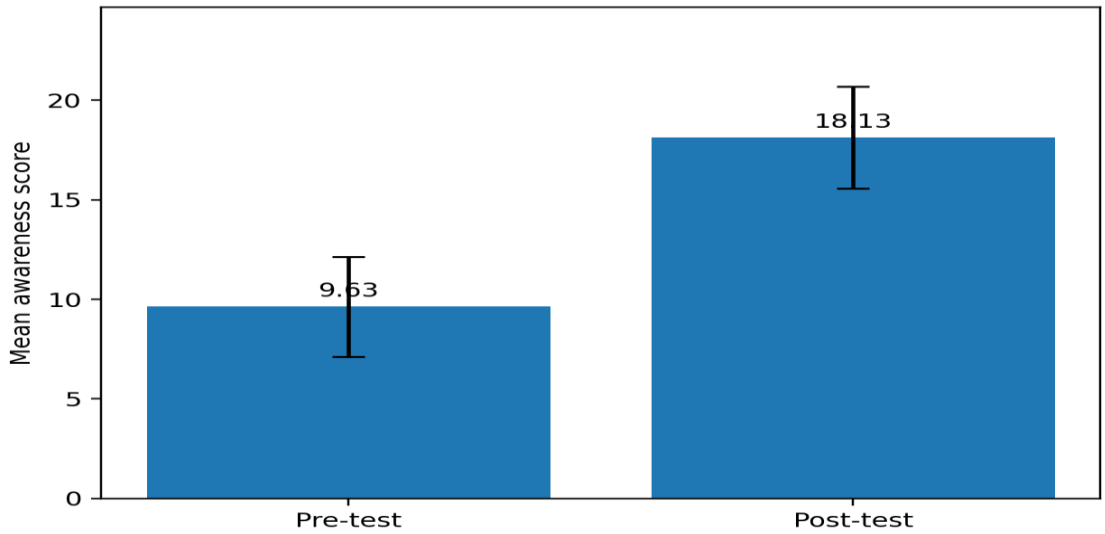

Figure 3. Mean awareness score before and after the multimedia programme (error bars represent standard deviation).

Association of awareness with selected variables

Variable	Chi-square (reported)	Interpretation
Age	8.654	Significant association reported
Gender	18.80	Significant association reported
Type of NCDs	31.375	Significant association reported
Diet preference	9.3	Significant association reported
Prior awareness of millets	3.46	No significant association reported
Source of information	10.04	No significant association reported in text

Table 4. Reported association between awareness score and selected demographic variables.

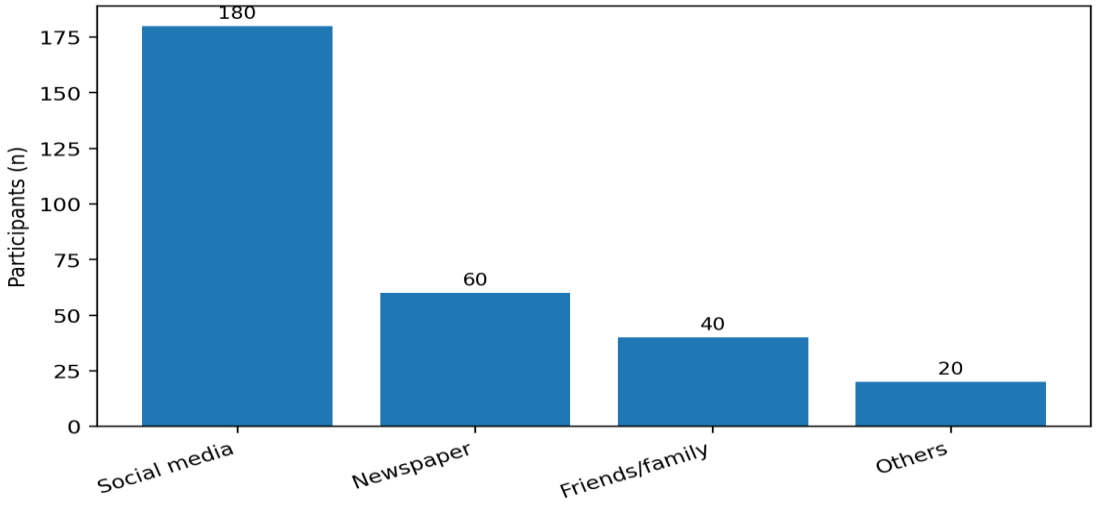

Figure 4. Reported sources of information about millets.

DISCUSSION

The findings show a marked increase in awareness following the multimedia intervention. The mean awareness score rose from 9.63 to 18.13, and the proportion of participants in the excellent category increased from 0% to 57.7%. This pattern supports the practical value of audio-visual education in community-based nutrition promotion.

The strongest descriptive signal in the baseline profile was low prior awareness of millets: two-thirds of participants reported no prior awareness, despite living with NCD conditions for which millet-based dietary education may be especially relevant. Social media emerged as the most common prior source of information, suggesting that future community programmes can strategically integrate digital and mobile dissemination.

The reported association analysis suggests that awareness varied by gender, type of NCD, and diet preference. These differences imply that educational interventions may need tailoring based on the dietary habits and health conditions of target groups.

The study aligns with other intervention-oriented work cited in the thesis, including studies reporting improved knowledge after structured teaching or nutrition education on millets and related dietary practices.

Implications for practice

- Community health nurses can use brief multimedia modules to improve nutrition awareness among adults with NCDs.
- Millet education may be integrated into chronic disease counselling, health camps, and primary care outreach.
- Social-media-compatible educational formats may enhance reach and retention of key dietary messages.

Limitations

- The study used a one-group pre-test/post-test design without a control group.
- The article is based on thesis-reported tables; some descriptive percentages in the thesis required recalculation from frequencies for consistency.
- The outcome measured awareness rather than actual dietary behavior or long-term clinical outcomes.

CONCLUSION

The multimedia programme substantially improved awareness regarding the health benefits of millets among people with NCDs in the selected Indore setting. The large pre-post difference and highly significant z-value indicate that multimedia-based community education can be an effective strategy for dietary awareness promotion. Future studies should evaluate whether improved awareness leads to sustained millet consumption and better metabolic outcomes.

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