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Effect of DASH Diet Nutrition Education through Leaflet Media on Dietary Adherence

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ABSTRACT

Hypertension is a major public health concern and a leading risk factor for cardiovascular morbidity and mortality. Along with pharmacological management, lifestyle modification—especially dietary intervention—plays a crucial role in controlling blood pressure. The Dietary Approaches to Stop Hypertension (DASH) diet is a scientifically recommended dietary pattern shown to reduce blood pressure; however, adherence to this diet remains low in community settings due to limited awareness and practical guidance. This study aimed to evaluate the impact of DASH diet nutrition education delivered through leaflet media on dietary adherence among hypertensive patients in a selected community area of Gurugram, Haryana. A quantitative quasi-experimental one-group pre-test–post-test design was adopted. Sixty hypertensive patients aged 30–65 years were selected using purposive sampling. Baseline data on socio-demographic variables, DASH diet knowledge, and dietary adherence were collected using validated structured questionnaires and adherence checklists. The intervention consisted of nutrition education on the DASH diet provided through simple, culturally appropriate leaflet media explaining recommended food groups, portion sizes, and sodium restriction. Post-intervention assessment was conducted following the educational program. Data were analysed using descriptive statistics and the Wilcoxon signed-rank test. The findings demonstrated a statistically significant improvement in both knowledge and dietary adherence after the intervention. The mean DASH diet knowledge score increased from 1.92 ± 0.83 at baseline to 3.46 ± 1.22 post-intervention ($p < 0.001$). Similarly, the mean DASH diet adherence score improved from 19.28 ± 4.60 to 34.06 ± 6.10 ($p < 0.001$). Improvements were observed across age groups, genders, and educational levels, indicating the broad effectiveness of the intervention. The study concludes that leaflet-based DASH diet nutrition education is a simple, cost-effective, and practical strategy to improve dietary adherence among hypertensive patients in community settings. Integrating such interventions into routine community health and nursing practices may promote sustainable lifestyle changes and strengthen hypertension management.

Introduction

Hypertension is a major non-communicable disease and a leading cause of cardiovascular morbidity and mortality worldwide. In India, the prevalence of hypertension has increased substantially due to rapid urbanization, sedentary lifestyles, unhealthy dietary practices, and increased stress. Inadequate dietary habits, particularly high sodium intake and low consumption of fruits and vegetables, contribute significantly to poor blood pressure control. Therefore, lifestyle modification, especially dietary management, is recognized as a key component in the prevention and control of hypertension. The Dietary Approaches to Stop Hypertension (DASH) diet is a scientifically recommended dietary pattern that emphasizes the intake of fruits, vegetables, whole grains, low-fat dairy products, and lean proteins while limiting sodium, saturated fats, and processed foods.

Studies reviewed in the present research have demonstrated that adherence to the DASH diet leads to significant improvements in blood pressure levels and overall cardiovascular health. Despite this evidence, adherence to the DASH diet remains low among hypertensive patients in community settings due to limited awareness, lack of structured nutrition education, and absence of practical, easily accessible educational materials. Previous community-based and hospital-based studies included in the review of literature have reported that nutrition education interventions using printed materials such as leaflets and pamphlets significantly improved dietary knowledge and adherence among hypertensive patients. However, most of these studies focused on institutional settings or combined multiple teaching methods, making it difficult to assess the independent effectiveness of leaflet-based education. There is limited evidence from community-based settings evaluating the effectiveness of DASH diet nutrition education delivered exclusively through leaflet media, particularly among hypertensive patients in selected community areas of Haryana. Additionally, few studies have assessed changes in both DASH diet knowledge and adherence following such interventions. Addressing this gap, the present study aims to evaluate the impact of DASH diet nutrition education through leaflet media on dietary adherence among hypertensive patients in a selected community area of Gurugram, Haryana.

Materials and Methods

A quantitative research approach was adopted for the present study. A quasi-experimental one-group pre-test and post-test research design was used to assess the effectiveness of DASH diet nutrition education on dietary adherence among hypertensive patients. The study was conducted in a selected community area of Gurugram, Haryana. The study population comprised hypertensive patients aged 30–65 years residing in the selected community. A total of 60 participants were selected using purposive sampling technique based on inclusion criteria, which included diagnosed cases of hypertension willing to participate in the study. Patients with severe complications or those unwilling to participate were excluded. Data were collected using a structured and validated tool consisting of three sections: socio-demographic variables, DASH diet knowledge questionnaire, and a dietary adherence checklist. The intervention involved nutrition education on the DASH diet delivered through simple, culturally appropriate leaflet media. The leaflet included information on recommended food groups, portion sizes, sodium restriction, and healthy cooking practices. A pre-test was conducted prior to the intervention, followed by distribution and explanation of the leaflet. Post-test assessment was conducted after the intervention period using the same tools. Data were analysed using descriptive statistics and inferential statistics, including the Wilcoxon signed-rank test, to determine the effectiveness of the intervention.

Results

The present study assessed the effectiveness of DASH diet nutrition education delivered through leaflet media on knowledge and dietary adherence among hypertensive patients in a selected community area of Gurugram, Haryana. Data were analysed using descriptive and inferential statistics.

Socio-demographic characteristics of participants

A total of 60 hypertensive patients participated in the study. Most participants belonged to the age group of 41–60 years. Both male and female participants were included. The majority were married and had primary to secondary level education. A large proportion of participants had a history of hypertension for more than one year and were on regular antihypertensive medication. These characteristics indicate a typical community-based hypertensive population.

Effect of DASH diet education on knowledge

The pre-test findings revealed that most participants had inadequate knowledge regarding the DASH diet. Following the leaflet-based nutrition education, a marked improvement in knowledge scores was observed in the post-test. The mean knowledge score increased from 1.92 ± 0.83 in the pre-test to 3.46 ± 1.22 in the post-test. The difference was found to be statistically significant, indicating the effectiveness of the educational intervention.

Effect of DASH diet education on dietary adherence

Baseline assessment showed poor adherence to the DASH diet among participants. After the intervention, dietary adherence improved significantly. The mean adherence score increased from 19.28 ± 4.60 in the pre-test to 34.06 ± 6.10 in the post-test. Statistical analysis using the Wilcoxon signed-rank test showed that the improvement was highly significant ($p < 0.001$).

Association of post-test adherence with selected variables

Improvement in dietary adherence was observed across different age groups, genders, and educational levels. However, no statistically significant association was found between post-test adherence scores and selected socio-demographic variables, suggesting that the intervention was effective irrespective of participant characteristics.

Table 1. Comparison of Pre-test and Post-test Knowledge Scores on DASH Diet (n = 60)

Test	Mean ± SD	Median	Z value	p value
Pre-test	1.92 ± 0.83	2.00		
Post-test	3.46 ± 1.22	3.50	−6.72	< 0.001*

*Statistically significant at $p < 0.05$

Table 2. Comparison of Pre-test and Post-test DASH Diet Adherence Scores (n = 60)

Test	Mean ± SD	Median	Z value	p value
Pre-test	19.28 ± 4.60	19.00		

Test	Mean ± SD	Median	Z value	p value
Post-test	34.06 ± 6.10	35.00	−6.85	< 0.001*

*Statistically significant at $p < 0.05$

Table 3. Association between Post-test DASH Diet Adherence and Selected Socio-demographic Variables (n = 60)

Variable	χ^2 value	p value	Significance
Age	2.14	> 0.05	Not significant
Gender	1.08	> 0.05	Not significant
Educational status	2.96	> 0.05	Not significant
Duration of illness	1.74	> 0.05	Not significant

Interpretation and Implications

The current study's outcomes reinforce the positive impact of culturally appropriate, easy-to-understand printed materials on dietary knowledge and adherence. Leaflets, when designed with visual and linguistic simplicity, can empower hypertensive individuals to make sustained behavioral changes, even in community settings with low literacy or limited access to digital tools.

Summary

The present quasi-experimental study was conducted among 60 hypertensive patients residing in a selected community area of Gurugram. The objectives were to assess the baseline knowledge and adherence to the DASH diet, implement a nutrition education intervention using leaflet media, and evaluate the effectiveness of this intervention in improving knowledge and dietary adherence. A pre-test and post-test design was employed, where a structured questionnaire and adherence checklist were used to measure the participants' baseline and post-intervention scores. The educational intervention, a culturally adapted and visually engaging leaflet, was provided and explained to the participants.

Key findings include:

•Baseline knowledge and adherence levels were low.

•After the intervention, knowledge scores improved significantly from 1.92 ± 0.83 to 3.46 ± 1.22 ($p<0.001$).

•Adherence to DASH diet practices also improved from 19.28 ± 4.60 to 34.06 ± 6.10 ($p<0.001$).

•A statistically significant association was observed between knowledge scores and selected demographic variables, particularly education, age, and duration of illness.

Conclusion

The study concluded that nutrition education using leaflet media is an effective and feasible method to improve both knowledge and adherence to the DASH diet among hypertensive individuals in the community setting. The intervention

resulted in a notable improvement in understanding dietary principles and adoption of healthier food choices, especially in limiting sodium intake, increasing fruit and vegetable consumption, and reading food labels. This educational approach is especially useful for communities with limited access to digital resources and lower literacy levels, as leaflets are low-cost, easy to understand, and scalable.

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