Evaluate the Effectiveness of a Self-Instructional Module on Knowledge Regarding the DASH Diet Among Hypertensive Clients in Selected Rural Areas

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Abstract: *Background: Hypertension is a significant public health concern and a major risk factor for cardiovascular disease, stroke, and renal complications. It is often asymptomatic, earning the moniker "silent killer." In India, the burden of hypertension is rising, especially in rural areas where awareness and access to preventive education are limited. The Dietary Approaches to Stop Hypertension (DASH) diet has proven effective in reducing blood pressure and associated cardiovascular risks. Objective: To evaluate the effectiveness of a self-instructional module (SIM) on improving knowledge about the DASH diet among hypertensive clients in selected rural areas. Methods: A quantitative, pre-experimental one-group pretest-posttest design was adopted. A total of 90 hypertensive clients were selected using purposive sampling. Data were collected using a structured questionnaire covering socio-demographic data and DASH diet knowledge. The SIM was administered after the pretest, and a posttest was conducted after 7 days. Descriptive statistics, paired t-test, and chi-square test were used for analysis. Tool reliability was established with Karl Pearson's correlation coefficient (r = 0.78). Results: A significant increase in knowledge scores was observed post-intervention (t = 31.44; p < 0.05). Age was found to be significantly associated with pretest knowledge scores (χ^2 = 12.83; χ^2_tab = 12.59), indicating demographic influence on baseline knowledge levels. Conclusion: The self-instructional module effectively enhanced awareness regarding the DASH diet among hypertensive individuals. It serves as a low-cost, scalable educational tool that can be integrated into rural health promotion strategies.*

Keywords: Hypertension, DASH Diet, Self-Instructional Module, Health Education, Rural Population

1. Introduction

Hypertension affects over 1.28 billion adults worldwide, with the majority residing in low- and middle-income countries [1]. In India, hypertension is directly responsible for approximately 24% of coronary heart disease and 57% of stroke-related deaths [2]. The prevalence is growing in rural areas, largely due to poor awareness, limited health education, and inadequate access to preventive services [3].

Non-pharmacological strategies such as the DASH diet are central to hypertension control. Developed by the National Heart, Lung, and Blood Institute, the DASH diet emphasizes the consumption of fruits, vegetables, whole grains, low-fat dairy, and reduced sodium intake [4–6]. Several studies have documented its effectiveness in lowering systolic and diastolic blood pressure.

Educational interventions like self-instructional modules are essential in promoting lifestyle modifications, particularly among populations with limited access to professional counseling. They are cost-effective, self-paced, and adaptable for rural healthcare delivery [7].

2. Objectives

1) To evaluate the effectiveness of a self-instructional module on knowledge regarding the DASH diet among hypertensive clients.
2) To compare pretest and posttest knowledge scores.
3) To assess the association between pretest knowledge scores and selected socio-demographic variables.

3. Methodology

a) **Design:** Pre-experimental one-group pretest-posttest
b) **Setting:** Selected rural areas
c) **Sample Size:** 90 hypertensive clients
d) **Sampling Technique:** Non-probability purposive sampling
e) **Tool:**
   - *Section A:* Socio-demographic profile
   - *Section B:* Structured questionnaire on DASH diet knowledge
f) **Procedure:**
   - Pretest using the structured questionnaire
   - Immediate administration of the self-instructional module
   - Posttest conducted after 7 days
g) **Data Analysis:** Descriptive statistics, paired t-test for effectiveness, chi-square test for association
h) **Reliability:** r = 0.78, confirmed using Karl Pearson correlation

4. Results

1) **Effectiveness of SIM:**
There was a statistically significant improvement in knowledge scores following the intervention.
$$t\_cal = 31.44 > t\_tab = 1.98 \text{ (p < 0.05)}$$

2) **Association with Demographics:**
Age was significantly associated with baseline knowledge scores.
$$\chi^2\_cal = 12.83 > \chi^2\_tab = 12.59$$

These results affirm the effectiveness of the SIM in enhancing DASH diet knowledge and the influence of demographic factors on educational impact.

5. Interpretation and Conclusion

The study concluded that a structured, self-instructional module can significantly improve awareness and knowledge about the DASH diet among hypertensive clients. The SIM proved particularly effective in rural settings where access to dietitians or lifestyle educators is limited.

The positive association between age and baseline knowledge underscores the need for age-specific educational strategies. The simplicity, accessibility, and effectiveness of the SIM make it an ideal tool for large-scale community health initiatives targeting non-communicable disease prevention.

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