A Study to Assess the Effectiveness of a Cooking Demonstration on Knowledge and Practice Regarding Balanced Diet Among 2nd Semester B.Sc. Nursing Students at St. Francis Hospital and College of Nursing, Ajmer, Rajasthan

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I. INTRODUCTION

Nutrition is closely related to health, growth, learning, physical performance and prevention of disease. A balanced diet provides a variety of foods in suitable amounts so that the body receives adequate energy, protein, fats, vitamins, minerals, fibre and fluids. Healthy eating also involves appropriate portion sizes, safe food handling and moderation of foods high in salt, sugar and unhealthy fats.

Nursing students are future health professionals who are expected to promote healthy lifestyle practices among individuals, families and communities. Nutrition education is therefore an important part of nursing education. However, theoretical knowledge may not always develop the practical ability to select ingredients, plan a suitable meal and prepare food using healthier methods.

A cooking demonstration provides an experiential learning opportunity. By observing and participating in meal preparation, students can connect nutritional principles with actual food choices. Demonstration of food-group selection, portion distribution, hygiene, economical ingredients and appropriate cooking methods can make the concept of a balanced diet more practical and understandable.

The present study focuses on the effectiveness of a structured cooking demonstration in improving knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students.

II. STATEMENT OF THE PROBLEM

A study to assess the effectiveness of a cooking demonstration on knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students at St. Francis Hospital and College of Nursing, Ajmer District.

III. OBJECTIVES OF THE STUDY

- To assess the pre-test level of knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students at St. Francis Hospital and College of Nursing, Ajmer, Rajasthan.
- To administer a structured cooking demonstration on balanced diet to 2nd semester B.Sc. Nursing students at St. Francis Hospital and College of Nursing, Ajmer, Rajasthan.
- To assess the post-test level of knowledge and practice regarding balanced diet after administering the structured cooking demonstration among 2nd semester B.Sc. Nursing students.
- To determine the effectiveness of the structured cooking demonstration by comparing the mean pre-test and post-test knowledge and practice scores regarding balanced diet among 2nd semester B.Sc. Nursing students.
- To determine the association between selected demographic variables and the post-test level of

knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students.

IV. HYPOTHESES OF THE STUDY

Null Hypotheses (H_0)

- H_{01}: There will be no significant difference between the mean pre-test and post-test knowledge and practice scores regarding balanced diet among 2nd semester B.Sc. Nursing students.
- H_{02}: There will be no significant association between selected demographic variables and the post-test level of knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students.

Alternative Hypotheses (H_1)

- H_{01}: There will be a significant difference between the mean pre-test and post-test knowledge and practice scores regarding balanced diet among 2nd semester B.Sc. Nursing students.
- H_{02}:There will be a significant association between selected demographic variables and the post-test level of knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students.

V. MATERIALS AND METHODS

This study adopted a quantitative evaluative research approach using a quasi-experimental one-group pre-test and post-test design. The research design was represented as $O_1 \rightarrow X \rightarrow O_2$, where O_1 denotes the pre-test assessment of knowledge and practice, X denotes the structured cooking demonstration on balanced diet, and O_2 denotes the post-test assessment. The study was conducted at St. Francis Hospital and College of Nursing, Ajmer, Rajasthan. The target population consisted of B.Sc. Nursing students, while the accessible population comprised 2nd semester B.Sc. Nursing students available in the selected institution. A sample of 40 students was selected using non-probability purposive sampling.

VI. ETHICAL CONSIDERATION

Administrative permission will be obtained from the concerned authority of the institution before data collection. The participants will receive information about the purpose and procedure of the study. Written informed consent will be obtained before participation. Privacy and confidentiality will be maintained. Participation will be voluntary, and participants will have the right to withdraw from the study without academic disadvantage.

VII. TOOLS FOR DATA COLLECTION

Three tools were used for data collection in the present study. Tool I was a demographic data sheet used to collect selected characteristics of the participants, including age, religion, place of residence, previous exposure to nutrition education, dietary pattern, family income and major source of nutrition information. Tool II was a structured knowledge questionnaire consisting of 30 objective items to assess the knowledge of 2nd semester B.Sc. Nursing students regarding balanced diet. Each correct response was awarded one mark, with a maximum score of 30. Knowledge scores of 0–10 were categorized as inadequate knowledge, 11–20 as moderately adequate knowledge and 21–30 as adequate knowledge. Tool III was a structured practice checklist consisting of 20 items to assess the practical application of balanced-diet principles during meal selection, meal planning and preparation. The maximum practice score was 20, with scores of 0–6 categorized as poor practice, 7–13 as moderate practice and 14–20 as good practice.

VIII. VALIDITY AND RELIABILITY

The tools were submitted to experts in nursing, nutrition and related fields for content validation. The suggestions and recommendations provided by the experts were incorporated before final administration of the tools. The reliability of the structured knowledge questionnaire and practice checklist was established using an appropriate reliability procedure before the main study. The actual validity and reliability coefficients obtained by the researcher should be reported in the final manuscript.

IX. DATA COLLECTION PROCEDURE

After obtaining institutional permission and informed consent, the researcher will administer the pre-test to the selected participants. The knowledge questionnaire will be completed first, followed by assessment of practice using the structured checklist.

A structured cooking demonstration will then be conducted. The demonstration will include identification of food groups, selection of appropriate ingredients, meal composition, portion size, economical use of locally available foods, hygienic food handling, healthy cooking methods and avoidance of excessive oil, salt and sugar. Students will be encouraged to observe and participate in the preparation process.

After the intervention period, the post-test assessment will be conducted using the planned outcome measures. The collected data will be coded, tabulated and analysed statistically.

X. DATA ANALYSIS

Descriptive statistics:

Frequency, percentage, mean, and standard deviation will be used to summarize the demographic characteristics and the pre-test and post-test knowledge and practice scores.

Inferential statistics:

- Paired t-test will be used to compare the pre-test and post-test knowledge scores.
- Paired t-test will be used to compare the pre-test and post-test practice scores.
- Chi-square test will be used to determine the association between selected demographic variables and the pre-test level of knowledge and practice, where the assumptions for the test are satisfied.

Level of significance:

The level of significance will be set at $p < 0.05$.

Table 1. Comparison of pre-test and post-test knowledge scores (n=40)

Knowledge score	Pre-test	Post-test
Mean	15.2	25.0
Standard deviation	3.7	2.8
Mean difference	9.8	
Paired t-value	17.36	
p-value	<0.001	
Interpretation	Significant improvement	

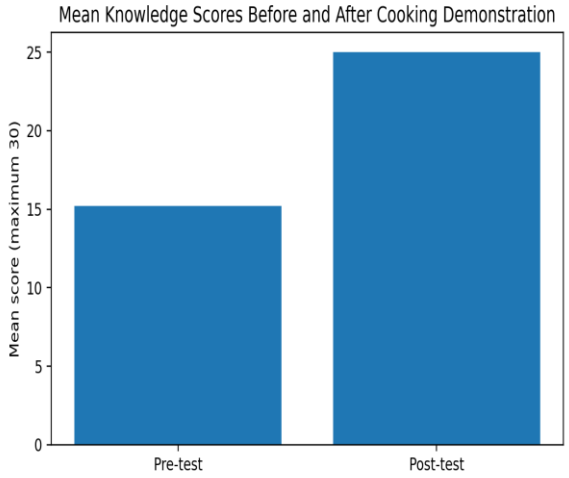

Figure 1. Graphical comparison of mean knowledge scores.

Table 2. Comparison of pre-test and post-test practice scores (n=40)

Practice score	Pre-test	Post-test
Mean	9.8	16.5
Standard deviation	2.9	2.2
Mean difference	6.7	
Paired t-value	14.21	
p-value	<0.001	
Interpretation	Significant improvement	

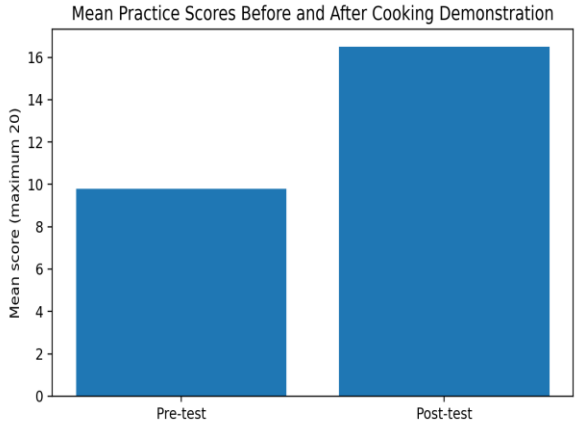

Figure 2. Graphical comparison of mean practice scores.

XI. EXPECTED OUTCOME

The cooking demonstration is expected to strengthen students' understanding of balanced-diet principles and improve their ability to apply those principles during meal selection and preparation. The intervention may demonstrate the value of practical, experiential nutrition education within undergraduate nursing education.

XII. CONCLUSION

The study is designed to evaluate a structured cooking demonstration as a practical teaching strategy for improving knowledge and practice regarding balanced diet among 2nd semester B.Sc. Nursing students. The pre-test and post-test design will permit assessment of changes following the intervention. The final conclusion must be based exclusively on the actual observations and statistical results obtained from the 40 participants.

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