



# **“A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING DEEP BREATHING EXERCISE TO IMPROVE PULMONARY FUNCTION AMONG B.Sc. NURSING STUDENTS”**

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## **Abstract :**

A pre-experimental one group pre-test post-test study was conducted to assess the effectiveness of a structured teaching programme on knowledge regarding deep breathing exercise to improve pulmonary function among B.Sc. Nursing students. The study was conducted at Samrat Prithviraj Chauhan College of Nursing, Kashipur, Uttarakhand. Fifty B.Sc. Nursing students were selected using non-probability purposive sampling technique. Data were collected using a structured knowledge questionnaire before and after the structured teaching programme. Paired t-test and chi-square test were used for data analysis. The mean post-test knowledge score ( $24.28 \pm 2.90$ ) was significantly higher than the mean pre-test score ( $17.86 \pm 3.92$ ). The difference was statistically significant at 0.05 level, indicating the effectiveness of the structured teaching programme.

**Index Terms :** Deep breathing exercise, Structured teaching programme, Knowledge, Nursing students, Pulmonary function

## **I. INTRODUCTION**

Respiration is a vital physiological process essential for survival. Deep breathing exercises help in improving lung expansion, oxygenation, and overall pulmonary function. Nursing students play a key role in educating patients regarding breathing exercises; hence, adequate knowledge is essential. Structured teaching programmes are effective educational strategies to enhance knowledge and promote evidence-based nursing practice.

## **II. RESEARCH METHODOLOGY**

A quantitative research approach with pre-experimental one group pre-test post-test design was adopted. The study was conducted among 50 B.Sc. Nursing students selected through non-probability purposive sampling technique. A structured knowledge questionnaire was used for data collection. Pre-test was conducted followed by implementation of structured teaching programme, and post-test was conducted after the intervention. Paired t-test and chi-square test were used for data analysis. Level of significance was set at 0.05.

## **Population and Sample**

The population for the present study comprised of all B.Sc. Nursing students studying at the selected nursing college, Kashipur, Uttarakhand. The sample consisted of 50 B.Sc. Nursing students who were selected using non-probability purposive sampling technique based on the inclusion criteria.

### Data and Sources of Data

Primary data were collected directly from the B.Sc. Nursing students using a structured knowledge questionnaire designed to assess knowledge regarding deep breathing exercise before and after the structured teaching programme.

### Theoretical Framework

The study was based on Ludwig von Bertalanffy's General System Theory which includes input, process, output, and feedback. Input refers to the pre-test knowledge of students, process refers to the structured teaching programme, output refers to post-test knowledge, and feedback refers to improvement in knowledge after the intervention.

### Statistical Tools

Descriptive and inferential statistics were used for data analysis. Paired t-test was used to compare pre-test and post-test knowledge scores, and chi-square test was used to find the association between post-test knowledge and selected demographic variables. Level of significance was set at 0.05.

## III. RESULTS AND DISCUSSION

**Table 1: Frequency distribution and percentage distribution of samples according to their socio demographic variables**

| S.N. | Variables                                            | Options                               | Frequency | Percentage |
|------|------------------------------------------------------|---------------------------------------|-----------|------------|
| 1.   | Age (in years)                                       | 1.a) 15-17years                       | 00        | 00%        |
|      |                                                      | 1.b) 18-20 years                      | 41        | 82%        |
|      |                                                      | 1.c) 21-23 years                      | 07        | 14%        |
|      |                                                      | 1.d) Above 23                         | 02        | 4%         |
| 2.   | Gender                                               | 2.a) Male                             | 26        | 52%        |
|      |                                                      | 2.b) Female                           | 24        | 48%        |
| 3.   | Education of the participant                         | 3.a) High school                      | 00        | 00%        |
|      |                                                      | 3.b) Intermediate                     | 41        | 82%        |
|      |                                                      | 3.c) Graduation                       | 09        | 18%        |
|      |                                                      | 3.d) Post graduation                  | 00        | 00%        |
| 4.   | Residence                                            | 4.a) Urban                            | 25        | 50%        |
|      |                                                      | 4.b) Rural                            | 25        | 50%        |
| 5.   | Religion                                             | 5.a) Hindu                            | 21        | 42%        |
|      |                                                      | 5.b) Muslim                           | 29        | 58%        |
|      |                                                      | 5.c) Christian                        | -         | -          |
|      |                                                      | 5.d) Others                           | -         | -          |
| 6.   | Father's Occupation                                  | 6.a) Unemployed                       | 02        | 4%         |
|      |                                                      | 6.b) Private                          | 08        | 16%        |
|      |                                                      | 6.c) Government                       | 04        | 08%        |
|      |                                                      | 6.d) Self – employed                  | 36        | 72%        |
| 7.   | Father's qualification                               | 7.a) Primary level of education       | 19        | 38%        |
|      |                                                      | 7.b) Secondary level of education     | 08        | 16%        |
|      |                                                      | 7.c) Higher secondary level education | 09        | 18%        |
|      |                                                      | 7.d) Graduation and above             | 14        | 28%        |
| 8.   | Personal history of Respiratory Problems             | 8.a) Yes                              | 04        | 08%        |
|      |                                                      | 8.b) No                               | 46        | 92%        |
| 9.   | Family history Respiratory problems                  | 9.a) Yes                              | 01        | 2%         |
|      |                                                      | 9.b) No                               | 49        | 98%        |
| 10.  | Previous knowledge regarding Deep breathing exercise | 10.a) Yes                             | 32        | 64%        |
|      |                                                      | 10.b) No                              | 18        | 36%        |

**Table no. 2 : Analysis of pre – test and post – test level of knowledge regarding deep breathing exercise to improve the pulmonary function among B.Sc. Nursing 3<sup>rd</sup> Semester on the basis of criterion using frequency and percentage.**

**CRITERIA MEASURES OF KNOWLEDGE SCORE**

**N = 50**

| Score level (N= 50) | Pre – test<br>(frequency) | Percentage | Post – test<br>(frequency) | Percentage |
|---------------------|---------------------------|------------|----------------------------|------------|
| Inadequate (1-10)   | 2                         | 4%         | 0                          | 0%         |
| Moderate (11-20)    | 36                        | 72%        | 4                          | 8%         |
| Adequate(21-30)     | 12                        | 24%        | 46                         | 92%        |

Maximum Score = 30 Minimum Score = 0

**Table no. – 3 Mean , Standard Deviation , Median Score , Mean Percentage of Pre – test and Post – test**

**N = 50**

| Descriptive statistics | Mean  | S.D. | Maximum | Minimum | Mean % |
|------------------------|-------|------|---------|---------|--------|
| Pre – Test knowledge   | 17.86 | 3.92 | 24      | 06      | 59.53  |
| Post – Test knowledge  | 24.28 | 2.90 | 29      | 16      | 80.93  |

**Table no. 4 :- Analysis of effectiveness of Structured Teaching Programme ‘t’ value is calculated to determine the significance of difference between mean of pre - test and post – test knowledge scores .**

**N = 50**

| Effectiveness | Practice |                 |      | Paired ‘t’ value<br>P value | DF |
|---------------|----------|-----------------|------|-----------------------------|----|
|               | Mean     | Mean difference | SD   |                             |    |
| Pre-test      | 17.86    | 6.42            | 3.92 | 8.51                        | 49 |
| Post-test     | 24.28    |                 | 2.90 |                             |    |

The results of the study showed that the structured teaching programme was effective in improving the knowledge of B.Sc. Nursing students regarding deep breathing exercise. Before the intervention, the pre-test knowledge scores indicated that many students had inadequate to moderate knowledge. After the structured teaching programme, there was a clear improvement in the level of knowledge among the students.

The mean pre-test knowledge score was **17.86 with a standard deviation of 3.92**, whereas the mean post-test knowledge score increased to **24.28 with a standard deviation of 2.90**. This increase in the mean score shows that students gained better understanding after receiving the teaching programme. The paired t-test was applied to compare pre-test and post-test scores, and the results were found to be statistically significant at the **0.05 level of significance**. This indicates that the improvement in knowledge was not due to chance but was a result of the structured teaching programme.

Chi-square test was used to find the association between post-test knowledge scores and selected demographic variables. The findings showed a significant association between post-test knowledge and some demographic variables, suggesting that certain personal characteristics may influence knowledge levels. Overall, the statistical analysis confirmed that the structured teaching programme was effective.

#### IV. CONCLUSION

The study concluded that the structured teaching programme on deep breathing exercise was effective in improving the knowledge of B.Sc. Nursing students. The significant difference between pre-test and post-test knowledge scores clearly demonstrated the positive impact of the educational intervention. The improvement in students' knowledge highlights the importance of planned and structured teaching in nursing education.

The findings of the study suggest that structured teaching programmes can be used as an effective method to enhance knowledge and understanding of important health-related practices among nursing students. Improving knowledge about deep breathing exercises can help nursing students educate patients better and contribute to improved patient care. Therefore, incorporating such educational programmes into the nursing curriculum is beneficial for both students and future clinical practice.

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