

EFFECTIVENESS OF SKILL STATION ON KNOWLEDGE AND PRACTICE REGARDING NASOGASTRIC FEEDING AMONG NURSING STUDENTS.

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ABSTRACT

Introduction : Nasogastric feeding is an important nursing procedure used to provide nutrition, fluids and medications to patients who cannot take adequate nutrition orally. Adequate knowledge and practical competency are essential to perform the procedure safely. This study aimed to assess the effectiveness of skill station teaching on knowledge and practice regarding nasogastric feeding among nursing students. **Methodology:** A quantitative research approach with a quasi-experimental one-group pre-test post-test design was used. Simple random sampling technique was adopted to select 100 B.Sc. Nursing students. Data were collected using a demographic questionnaire, a structured knowledge questionnaire and an observational practice checklist. The reliability coefficient of the tool was $r = 0.81$. Pre-test was followed by skill station teaching on nasogastric feeding and the post-test was conducted after 7 days. **Results:** The mean knowledge score increased from 8.97 ± 1.66 in the pre-test to 11.75 ± 1.47 in the post-test. The paired t-test value was 26.00 with $p = 0.000$, showing a statistically significant difference. The mean practice score increased from 18.16 ± 1.97 to 22.48 ± 2.33 , with a paired t-test value of 41.03 and $p = 0.000$. **Conclusion:** Thus, the skill station was effective in improving knowledge and practice regarding nasogastric feeding among nursing students.

KEYWORDS: Skill Station; Nasogastric Feeding; Nursing Students; Knowledge; Practice.

INTRODUCTION

Nasogastric feeding is a method of delivering liquid nutrition, fluids and medication directly into the stomach through a thin, flexible tube passed through the nose, down the oesophagus and into the stomach. It is used when a patient cannot eat or swallow adequately but has a functioning gastrointestinal tract. Safe nasogastric feeding requires proper assessment, infection prevention, correct tube management, appropriate administration of feed and observation for complications. [1, 4].

Nursing students need adequate theoretical knowledge and practical competency before performing nasogastric feeding in clinical settings. Traditional classroom teaching may not provide sufficient opportunities for repeated practice and immediate feedback. Skill stations provide a controlled environment in which students can observe, perform and repeat specific procedures under supervision. The present study was therefore undertaken to assess the effectiveness of skill station teaching on knowledge and practice regarding nasogastric feeding. [2,3].

NEED FOR THE STUDY

Nasogastric feeding is associated with potential complications when performed incorrectly, including aspiration, infection, tube displacement and other patient-safety concerns. Nursing students may experience limited clinical exposure, anxiety and lack of confidence while performing the procedure. Structured skill-based teaching provides repeated practice, supervision and immediate feedback in a safe environment. Previous studies included in the research review reported improved knowledge, psychomotor skills, confidence and clinical performance following simulation, demonstration and hands-on training. [5,6].

The present study was conducted to determine whether a skill station could improve knowledge and practice among nursing students.

MATERIALS AND METHODS

A quantitative research approach and quasi-experimental one-group pre-test post-test design were used. The study was conducted in selected nursing colleges of Sangli, Miraj and Kupwad corporation area. The population consisted of B.Sc. Nursing students and the sample comprised 100 students.

Simple random sampling technique was adopted. Students enrolled in the B.Sc. Nursing programme, available during the data collection and intervention period, and willing to give informed written consent were included. Students absent for the skill development session or missing the pre-test or post-test were excluded.

The data collection tool consisted of three sections: Section I—demographic variables; Section II—structured knowledge questionnaire; and Section III—observational practice checklist for nasogastric tube feeding. Five experts assessed content validity. Twenty knowledge questions were used for the pre-test and post-test and the practice checklist contained 30 items. Correct responses were scored 1 and incorrect responses 0. Reliability was assessed using the Karl-Pearson formula; $r = 0.81$, indicating that the tool was reliable. Test-retest method was used for knowledge and inter-rater method for practice. [7].

After obtaining permission and written informed consent, the pre-test was conducted, followed by the skill station on nasogastric feeding. The post-test was conducted after 7 days. Data were analysed using frequency, percentage, mean, standard deviation and paired t-test.

ANALYSIS AND INTERPRETATION OF DATA

The data were coded, classified, organized and analyzed. Demographic characteristics were expressed using frequency and percentage. Pre-test and post-test knowledge and practice scores were compared using paired t-test at the 0.05 level of significance

SECTION I – DEMOGRAPHIC CHARACTERISTICS

N=100

Variable	Category	Frequency	Percentage
Age	21 years	11	11.00
Age	22 years	76	76.00
Age	23 years	8	8.00
Age	24 years	5	5.00
Gender	Male	40	40.00
Gender	Female	60	60.00
Year of study	B.Sc. Nursing 2nd year	50	50.00
Year of study	B.Sc. Nursing 3rd year	50	50.00

Among the 100 nursing students, 76% were aged 22 years. Sixty percent were female and 40% were male. Half of the students were from B.Sc. Nursing second year and half were from third year.

SECTION II – COMPARISON OF KNOWLEDGE

Knowledge level	Pre-test n (%)	Post-test n (%)
Very poor (below 4)	0 (0.00)	0 (0.00)
Poor (4–7)	25 (25.00)	1 (1.00)
Average (8–11)	70 (70.00)	39 (39.00)
Good (12–15)	5 (5.00)	59 (59.00)
Excellent (16–20)	0 (0.00)	1 (1.00)
Mean $\pm$ SD	8.97 $\pm$ 1.66	11.75 $\pm$ 1.47

In the pre-test, 70% of students had average knowledge, 25% had poor knowledge and 5% had good knowledge. In the post-test, 59% had good knowledge, 39% had average knowledge and 1% had excellent knowledge. The mean knowledge score increased from 8.97 $\pm$ 1.66 to 11.75 $\pm$ 1.47.

SECTION III – COMPARISON OF PRACTICE

Practice level	Pre-test n (%)	Post-test n (%)
Poor (0–12)	2 (2.00)	0 (0.00)
Average (13–18)	53 (53.00)	6 (6.00)
Good (19–24)	45 (45.00)	79 (79.00)
Excellent (25–30)	0 (0.00)	17 (17.00)
Mean $\pm$ SD	18.16 $\pm$ 1.97	22.48 $\pm$ 2.33

In the pre-test, 53% of students had average practice, 45% had good practice and 2% had poor practice. In the post-test, 79% had good practice and 17% had excellent practice, while none had poor practice. The mean practice score increased from 18.16 $\pm$ 1.97 to 22.48 $\pm$ 2.33.

SECTION IV – EFFECTIVENESS OF SKILL STATION

Outcome	Pre-test Mean $\pm$ SD	Post-test Mean $\pm$ SD	Paired t	p-value
Knowledge	8.97 $\pm$ 1.66	11.75 $\pm$ 1.47	26.00	0.000
Practice	18.16 $\pm$ 1.97	22.48 $\pm$ 2.33	41.03	0.000

The paired t-test showed a statistically significant difference between pre-test and post-test knowledge scores ($t = 26.00$, $p = 0.000$) and practice scores ($t = 41.03$, $p = 0.000$). Since $p < 0.05$, the null hypothesis was rejected. The findings demonstrate that skill station teaching was effective in improving knowledge and practice regarding nasogastric feeding.

DISCUSSION

These findings support the studies reviewed in the research, which reported that simulation, demonstration, skill stations and repeated hands-on practice improve nursing students' knowledge and practical competency in nasogastric tube procedures.

Zare-Kaseb et al. conducted a systematic review examining the knowledge, attitude, and practice of nurses regarding enteral feeding. The review revealed significant gaps in nurses' knowledge and practice related to enteral feeding, including nasogastric tube management, with considerable variation across different clinical settings and geographic regions. The study highlighted the need for standardized, ongoing education and training programs to improve nurses' competency in enteral nutrition. [7, 10.]

Additionally, Haywood conducted an integrative literature review on the acquisition and retention of nursing competency for nasogastric feeding tube management. The findings indicated that competency in nasogastric tube management declines over time without reinforcement, and that simulation-based education and regular competency assessments are essential for maintaining skill proficiency. The review recommended that healthcare institutions implement periodic refresher training and competency evaluations to ensure patient safety and quality of care. These findings collectively underscore the importance of continuous education and skills reinforcement in enteral feeding practice.[8]

Al-Awaisi et al. investigated the effect of simulation-based education on nursing students' competency in nasogastric tube feeding and found that simulation-based training significantly improved students' knowledge and psychomotor skills compared to traditional teaching methods. The study emphasized that simulation provides a safe, controlled environment for students to practice and refine their skills before encountering real patients. [9] Similarly, Kebede et al. examined the effectiveness of using an updated checklist for enhancing nasogastric tube insertion skill performance among nursing students. [11,12]

IMPLICATIONS

Nursing Education: Skill-based teaching methods such as skill stations should be incorporated into nursing education, with greater emphasis on practical training along with theoretical knowledge.

Nursing Practice: Improved knowledge and practice can support safe nasogastric feeding and may help reduce clinical errors and complications.

Nursing Administration: Nursing administrators should organize regular training programmes and workshops and provide adequate facilities for skill laboratories.

Nursing Research: Further studies can be conducted with larger samples and comparative designs to evaluate different teaching methods

LIMITATIONS OF THE STUDY

The study included 100 nursing students, which may limit generalization. It was confined to selected nursing colleges of Sangli, Miraj and Kupwad corporation area. The one-group pre-test post-test design did not include a control group. Practice was assessed in a controlled or simulated setting and may not fully represent actual clinical performance. Only short-term effectiveness was evaluated, and long-term retention was not assessed. Structured tools may not capture all aspects of knowledge and practice, and participation depended on student availability and willingness.

RECOMMENDATIONS

1. Similar studies can be conducted with a larger sample size for better generalization.
2. Comparative studies can be done between skill station and traditional teaching methods.
3. Studies can be conducted on different nursing procedures.
4. Follow-up studies can be conducted to assess long-term retention of knowledge and skills.
5. Regular training programmes should be organized to enhance clinical competence among nursing students.

CONCLUSION

The present study concluded that nursing students had average knowledge and practice regarding nasogastric feeding before the intervention. The implementation of skill station teaching significantly improved both knowledge and practice. There was a statistically significant difference between pre-test and post-test scores for knowledge and practice. Therefore, the skill station is an effective teaching method for enhancing knowledge and practice regarding nasogastric feeding among nursing students

. ETHICAL APPROVAL OF THE STUDY:

This study is approved by IEC, BVDU, College of Nursing, Sangli MH. India.

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CONFLICT OF INTEREST

No conflict of interest is involved.

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