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Evaluation of the Effectiveness of Video-Assisted Teaching on the Knowledge of Caregivers Regarding Nasogastric Tube Feeding in Neurological Patients at Selected Hospitals

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ABSTRACT

Background: Nasogastric Tube (NGT) feeding involves inserting a radio-opaque, fine-bore, flexible tube into the stomach through the nose. It is used to administer medication and nutritional support orally to people who are unable to swallow or meet their nutritional demands. **Methods:** The single-group pretest post-test pre-experimental, quantitative evaluative approach was chosen for this study. The research was carried out by the caregiver of the neurological patient at Acharya Vinoba Bhave Rural Hospital (AVBR) Hospital, Wardha, India. **Results:** In order to measure the knowledge of the 90 caregivers of neurological patients, a systematic knowledge questionnaire was employed to collect data from them. The study's key findings indicate that whereas 12.22% of caregivers of neurological patients had poor awareness, 87.78% had average knowledge. The knowledge score on the post-test was 40% excellent, 55.56% very good and 4.44% good. The pretest and post-test knowledge scores were 4 and 9, respectively. The post-test knowledge score ranged from 13 to 22, with 22 being the maximum score. **Conclusion:** In this study the VAT raised the knowledge of nasogastric tube feeding of care giver. **Recommendations:** Video-assisted teaching is a very effective method to improve knowledge of caregivers in daily routines.

Keywords: Caregiver; Effectiveness; Nasogastric Tube Feeding (NGT); Neurological Patient; Video Assisted Teaching (VAT)

INTRODUCTION

Nasogastric Enteral feeding or enteral nourishment are other names for tube feeding. Nutrition is called the science of food and its connections to health. (Nandani *et al.*, 2018a) A nasogastric tube is one type of healthcare apparatus that protrudes into the body of the patient (Joseph *et al.*, 2022). During daily care, the capacity to do ordinary duties like feeding; persistent nasogastric tube implantation is associated with a higher possibility of infection (Hizanu *et al*., 2024). Home caregivers can enhance the care they provide and help patients avoid disease by completing necessary education in nasogastric tube feeding (Kadav & Sahare, 2020). The caregivers need to possess relevant nursing knowledge alongside common sense when it comes to giving care (Constantin *et al.*, 2023; Kaltenmeier *et al*., 2022).

The caregivers face multiple responsibilities, including psychological support, complications management and technical support (Allah *et al.*, 2022). To guarantee high-quality care for those who are reliant on NGTs for extended periods of time, standardised and thorough caregiver education is essential (Balodhi & Philip, 2024).

Objectives

1. To assess the existing knowledge regarding nasogastric tube feeding among caregiver of neurological patients.

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2. To assess the effectiveness of video-assisted teaching (VAT) on nasogastric tube feeding among caregiver of neurological patients.

3. To associate the demographic variables with the post-test knowledge score regarding nasogastric tube feeding among caregiver of neurological patients.

Hypothesis

H0: There will be no significant difference between pre-test knowledge scores regarding nasogastric tube feeding among caregiver of neurological patients.

H1: There will be a significant difference between the pre-test and post-test knowledge scores regarding nasogastric tube feeding among caregiver of neurological patients.

METHODOLOGY

The author conducted a quantitative hospital-based research study at the Acharya Vinoba Bhave Rural Hospital (AVBR) Hospital in Wardha, Maharashtra, India. The setting of the study is the neuro ward. Ninety caregivers for neurological patients participated in the study.

In this study care giver of neurological patients were selected as per inclusion and exclusion criteria: those who were willing to participate and those who had not participated in this type of study or any education programme related to nasogastric tube feeding. Excluded from the study are those that were unavailable during the time of data collection. A structural knowledge questionnaire and demographic information were among the data gathered from each participant. For this study a one-group pretest–post-test design was chosen. The Neuro ward and ICU of Acharya Vinoba Bhave Rural Hospital (AVBR) Hospital, Wardha, India, help to provide the data (Ahmed *et al*., 2024)

Tools for Data Collection: It consists of 3 parts: I- Demographic variables, II- Structure knowledge questionnaire and II- Video on Nasogastric Tube Feeding.

Data Analysis: In this study data was evaluated by using both inferential and descriptive (mean %, and SD) statistics and was tabulated and coded. The knowledge data was associated with the demographic characteristics using an independent "*t*" test and one-way ANOVA to determine the significance of the difference between the pretest and post-test data. The data are shown by using tables and graphs.

Ethical Consideration

This study got ethical clearance from the Institutional Ethical Committee, Dmiher (DU), Wardha, India, with reference number Dmiher (DU)/IEC/2024/235 on 5thMarch 2024.

RESULTS

The data divided into section wise after analysis.

Section-A

The participant distribution, broken down by percentage, is based on their demographic characteristics. From the study population, a purposeful sample of sixty participants was selected. The information gathered to characterise the sample features, such as age, gender, occupation, level of marital status, education, and family types.

Table 1: Distribution of Caregivers as a Percentage Based on Demographic Traits Characteristics (n=90)

Demographic Characteristics	Number of Caregivers	Percentage (%)
Age (in Years)		
18-30yrs	22	24.4
30-40yrs	28	31.1
40-50yrs	20	22.2
>50yrs	20	22.2
Gender		
Male	51	56.7
Female	38	42.2
Others	1	1.1
Educational Status		
Primary	13	14.4
Secondary	38	42.2
Higher Secondary	23	25.6
Graduation	16	17.8
PG and other	0	0
Occupation		
Private Job	15	16.7
Government Job	34	37.8
Own Business	30	33.3
Labour	11	12.2
Marital Status		
Married	63	70.0
Unmarried	20	22.2
Divorce	6	6.7
Separated	1	1.1
Family Type		
Extended	23	25.6
Joint	29	32.2
Nuclear	38	42.2

Table 1 shows the frequency and percentage distribution of caregivers by religion, gender, age, education, family type, occupation and marital status, among the other factors. Altogether 15% of the caregivers were in the 18 to 30 age range, 31.10% were in the 30 to 40 age range, and 22.20% were in the 40 to 50 and above 50 age ranges. In total, 42.20% of caregivers were female, and 56.70% were male. Of their caregivers, around 14.40 % had finished primary school, 42.20% had finished secondary school, 25.60% had finished higher secondary, and 17.80% had finished their education. Of them, 16.70 % worked in the private sector, 37.80 % in government service, 33.30 % in their own business, and 12.20 per cent as labourers. 6.70% of their caregivers were divorced, 22.20% were unmarried, and 70% were married. They came from nuclear households in 42.20% of cases, combined families in 32.20%, and extended families in 25.60% of cases.

Section -B

The examination of caregivers' knowledge scores about nasogastric tube feeding for neurological patients from specific institutions is included in this section. The following headings correspond to the knowledge score: The categories include excellent, very good, good, average, and poor.

Table 2: Comparison of Pretest and Post-Test Knowledge Scores on Nasogastric Tube Feeding (n=90)

Level of Knowledge	Score Range	Level of Knowledge score	
		Pre-Test	Post-Test
Poor	0-5	11(12.22%)	0(0%)
Average	6-10	79(87.78%)	0(0%)
Good	11-15	0(0%)	4(4.44%)
Very Good	16-20	0(0%)	50(55.56%)
Excellent	21-25	0(0%)	36(40%)
Minimum Score		4	13
Maximum Score		9	22
Mean Knowledge Score		6.76 ± 1.15	19.65±1.80
Mean % Knowledge Score		26.91 ± 5.18	78.62±7.22

According to table 2 above, 12.22% of caregivers of neurological patients had poor knowledge scores on the pretest, 87.78% had average scores, 4.44% had good scores, 55.56% had very good scores, and 40% had excellent knowledge scores on the post test. The post-test yielded a score of 22, with the pre-test having a minimum score of 4 and a maximum score of 9. The pretest's mean percentage score was 26.91 ± 5.18, while the post-test shows 78.62 ± 7.22. The average knowledge score was 19.65±1.80 on the post-test and 6.76±1.15 on the pretest.

Section-C

Table 3: Variation in Knowledge Scores between the Pre Test and Post Tests among Caregivers of Neurological Patient ' (n=90)

Test	Mean	SD	Mean Difference	*t*-value	*p*-value
Pre-Test	6.94	1.78	12.71±2.50	48.22	0.0001
Post-Test	19.65	1.80			s, $p<0.05$

The pre-test and post-test knowledge scores on nasogastric tube feeding in caregivers of neurological patients from Acharya Vinoba Bhave Rural Hospital (AVBR) Hospital, Sawangi (Meghe), Wardha, India, are compared at the 5% level of significance in table no. 3. The students paired *t* test is used to compare the mean, standard deviation and mean difference values. The tabulated result for n=90-1 with 89 degrees of freedom was 2.00. Compared to the total knowledge score of the caregivers of neurological patients as tabulated, at the 5% level of significance and the statistically acceptable level of significance. At 48.22, the computed *t* value is noticeably higher. As a result, the VAT on NGT feeding for neurological patient caregivers is very effective. Thus, the H1 is accepted.

Section-D:

The post-test knowledge scores of neurological patients' caregivers are associated with their age in years, educational background, and family type, but not with their gender, occupation, or marital status.

The study's results have consequences for nursing practice, administration, research, and education.

Nursing Administration

The study results are used to create instructions and guidelines for clients undergoing nasogastric tube feeding. This will add to the overall patient care. It is recommended to address this implication intime in order for the nursing process to function as a systematic guide to the client. This study will assist the nurse administration in organising and planning patient education regarding nasogastric tube feeding for neurological patient caregivers.

Nursing Education:

A nursing instructor may utilise the study's findings as an informational example for their nursing students. It supports the planning and execution of the topic in the nursing curriculum by the nurse educator. It also aids nurse educators in educating caregivers of neurological patients on the use of NGT feeding.

Nursing Research: This study's findings have been added to the body of existing nursing knowledge. Additional study may be conducted by other researchers using the suggestions and concepts. The instrument and methodology utilised have broadened the body of knowledge and can serve as references in the future.

Nursing Practice: Healthcare professionals who work in community and hospital settings recognise the significance of providing health education to caregivers about nasogastric tube feeding.

DISCUSSION

This section covered the study results in line with the objectives outlined in the research study and the results of further investigation. The aim of this study was to assess the caregivers understanding of NGT feeding for neurological patients using VAT. According to study analysis, 12.22% of caregivers of neurological patients had poor knowledge scores on the pretest, 87.78% had average scores, 4.44% had good scores, 55.56% had very good scores, and 40% had excellent knowledge core scores on the post-test. The post-test yielded a

score of 22, with the pre-test having a minimum score of 4 and a maximum score of 9. The pretest mean percentage score was 26.91 ± 5.18, while the post-test was 78.62 ± 7.22. The average knowledge score was 19.65±1.80 on the post-test and 6.76±1.15 on the pretest. The assessment of the carer's NGT feeding skills both before and after the test. The tabulated and computed "t" values are compared using the student's paired "t" test, and the significance of the difference at the 5% level of significance is ascertained. Furthermore, a comparison is made between the calculated *p* values and the accepted *p* values of 0.05. To compare the mean, standard deviation and mean percentage values by paired "t" test at the 5% level of significance. A value of 59 degrees of freedom (n=60-1) was tabulated. At a statistically acceptable level of significance, the calculated *t* value, or 49.678, is considerably higher than the tabular value for the populations' overall knowledge score at the 5% level of significance. Therefore, statistical analysis indicates the improvement of caregivers' knowledge of nasogastric tube feeding for neurological patients. According to study findings and a related study conducted by a researcher, the experimental group's overall mean pretest knowledge score was 40.20%, whereas the control group was 38.50%. The interventional group means post-test knowledge and practice scores were 87.60%, compared to 40% in the control group. The independent "*t*" values for knowledge and practice were 15.7 and 15.3, respectively, when $p<0.001$. Following the VAT, the experimental group's level of practice and knowledge increased noticeably. Therefore, the result shows that the VAT was successful in improving staff nurses' skills and expertise (Nandani *et al*., 2018b; Mohammed & Fattah, 2018).

A pre-experimental study conducted by a researcher using VAT to evaluate caregivers' knowledge of how to assess the care of stroke patients. The majority of caregivers (67.55%) had moderate knowledge, while 32.5% had inadequate knowledge. A total of 77.5% of caregivers demonstrated appropriate knowledge on the post-test. It demonstrates that following the VAT, caregivers' knowledge has significantly improved (Joseph *et al*., 2022). As a result, VAT effectively raises caregivers' awareness of how to care for stroke patients. Thus, video-assisted training is suitable, practical, and effective. It can be used to increase the understanding of caregivers in both community and hospital settings (Amianto *et al*., 2024).

Nasogastric tube feeding is the most commonly used enteral feeding, and its education is important to improve effective feeding and prevent its complications (Ali *et al*., 2024). As per study findings, long-term NGT use creates problems in patients, so teaching or training regarding NGT feeding and its care is very important and effective to prevent further complications (Saifullah & Mukhtar, 2023; Kwok *et al.*, 2022).

Similarly, the research study showed that self-assessment through video recording enhanced nursing students' knowledge and skills in nasogastric catheter placement (Yavuz *et al.*, 2025; Kumar *et al*., 2025). while another study highlighted the importance of proper nasogastric feeding management through routine cleaning and positioning checks. (Abedini *et al*., 2024) Therefore, video-assisted training is a suitable, practical, and effective method for increasing caregivers' understanding in both community and hospital settings (Baldoza, 2025; Hien *et al*., 2024). Critically ill patients have complex nutritional needs to meet the metabolic response to critical illness, and NGT feeding helps to fulfil this need (Elsayed *et al*., 2021; Hartford *et al.*, 2025).

Limitations

This research study is limited to the caregiver of neuro clients (patients). So, in future studies, researchers need to cover all the unconscious patient care givers, oral surgery patient care givers and long-term nasogastric tube feeding patient care givers in daily routines with other methods of education.

CONCLUSION

Video-assisted teaching has proven to be an effective educational tool, enhancing learning outcomes by engaging students visually and interactively. It promotes better understanding of complex concepts through dynamic and illustrative content. The approach makes education more accessible and inclusive by accommodating a variety of learning styles. Additionally, it facilitates self-paced learning, enabling students to revisit material as needed. Incorporating videos in teaching fosters motivation and interest, contributing to improved retention and application of knowledge. Overall, video-assisted teaching bridges the gap between traditional methods and modern learning demands, aligning with the digital age.

Recommendation

It is highly recommended to incorporate Video-Assisted Teaching (VAT) into patient education during daily routines, as it has proven to be an effective tool for enhancing understanding. Specifically, VAT is strongly recommended for oral surgery patients to help them maintain their nutritional status, providing clear and easy-to-follow visual instructions. Additionally, it is advisable to use VAT for bedridden and unconscious patients, as it offers a practical means of communication in situations where traditional methods may be less effective. Videos are also recommended to clarify doubts in an easy and accessible way, improving patient comprehension and ensuring better adherence to medical guidance.

Conflict of Interest

The authors declare that they have no competing interest.

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