

Effectiveness of Workshop for Nursing officers on level of Knowledge on Practice regarding Management of Intravenous Line to Prevent Phlebitis in Patients admitted in a Selected Hospital, Bangalore.

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Abstract

Intravenous cannulation is integral to modern healthcare, with 80% of inpatients requiring intravenous access. This study aimed to evaluate the efficacy of a workshop for nursing officers in a selected hospital, Bangalore on intravenous line management to prevent phlebitis. Utilizing J.W. Kenny's Modified Open System model, a pre-experimental pre-test post-test design assessed 49 nursing officers' knowledge on practice before and after the workshop. Structured questionnaires assessed knowledge on practice, revealed a significant increase in mean post-test knowledge scores (16.204) compared to pre-test scores (9.897), supporting the effectiveness of the intervention ($t = -6.108, p < 0.05$). However, no significant association was found between pre-test knowledge scores and demographic variables. The workshop emerged as a valuable strategy for enhancing nursing knowledge and preventing phlebitis complications. This research underscores the importance of continual education to ensure nurses maintain the highest standards of care, ultimately contributing to improved patient outcomes and healthcare safety.

Keywords: 'Effectiveness, workshop, management of intravenous line, prevention of phlebitis.

Introduction

Intravenous cannulation stands as a fundamental in contemporary healthcare, with approximately 80% of inpatients requiring intravenous lines for various treatments ranging from drug administration to fluid resuscitation. This pivotal practice underscores the critical role, nurses play in ensuring safe and effective delivery of intravenous therapies.

However, the landscape of intravenous line management is ever-evolving continuous skill updates and adherence to best practices among nursing officers. With the advent of new therapies and technologies, nurses must blend technical proficiency with clinical judgment and compassionate patientcentred care to optimize outcomes and maintain a safe healthcare environment.

Central to successful intravenous line management is the prevention of complications such as phlebitis, a common inflammation of the vein often resulting from mechanical, chemical, or infective causes. Nursing officers should use proactive measures including meticulous aseptic technique during insertion, regular site assessment, and timely removal of catheters to mitigate the risk of phlebitis. Despite these efforts, studies indicate a concerning gap in practice, with a significant portion of nursing staff exhibiting suboptimal adherence to aseptic techniques and knowledge gaps regarding intravenous cannulation.

To address these challenges, a non-experimental descriptive study conducted among nursing staff revealed the pressing need for enhanced training and adherence to standardized practices.

In response, a workshop aimed at improving intravenous catheter care was proposed, supplemented by the implementation of intravenous catheter care bundles during shifts. Rooted in evidence-based practices, the workshop and care bundle focus on proper insertion techniques, infection prevention, early complication detection, and patient education. Emphasizing simulation exercises, interdisciplinary collaboration, and continuous education, these initiatives aim to elevate nursing practices, reduce the incidence of phlebitis, and ultimately improve patient outcomes.

Effective intravenous line management is essential for delivering quality patient care. By addressing knowledge gaps, enhancing skills, and

implementing evidence-based strategies, nursing officers can uphold the highest standards of care, minimize complications, and ensure the safety and comfort of patients undergoing intravenous therapies.

Methods

Utilizing the evaluative research approach the study was conducted on April 2023 at a 1600 bedded hospital in Bangalore. 49 nursing officers were selected using non-probability purposive sampling technique. Structured knowledge on practice questionnaire were administered on 1st day before workshop, the pre-test values were collected among nursing officers. The workshop was initiated on the same day and post-test was done on 5th day.

Results

Prior to intervention, the pre-test assessment highlighted varying levels of knowledge among nursing officers regarding the crucial practice of intravenous line management to prevent phlebitis in hospitalized patients. Notably, 10% exhibited very poor knowledge, while 57.14% demonstrated poor knowledge, with only 10% boasting good knowledge in this critical area. However, post-intervention, a significant transformation emerged.

Now, 42.85% of nursing officers showcased average knowledge, and an encouraging 57.14% displayed good knowledge, indicating a substantial improvement in understanding and competence.

SECTION I: Distribution of nursing officers according to socio-demographic data

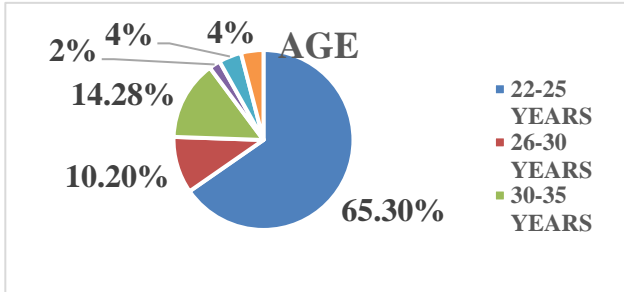


Fig1: Pie chart showing the percentage distribution of nurse according to age in years.

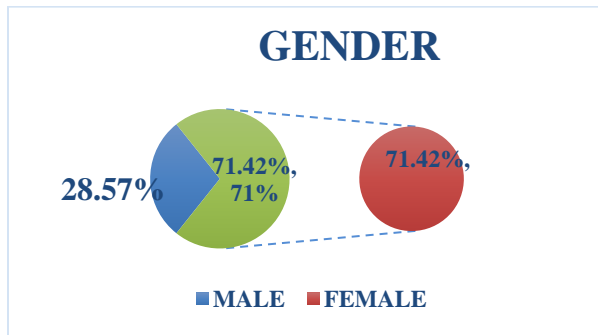


Fig 2: Pie chart showing the percentage distribution of nurses according to gender.

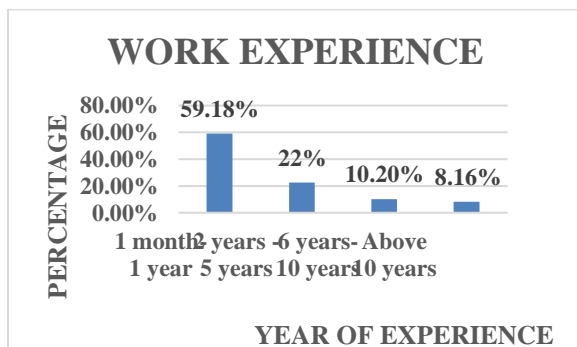


Fig 3: Bar graph showing the percentage distribution of nurses according to year of work experience

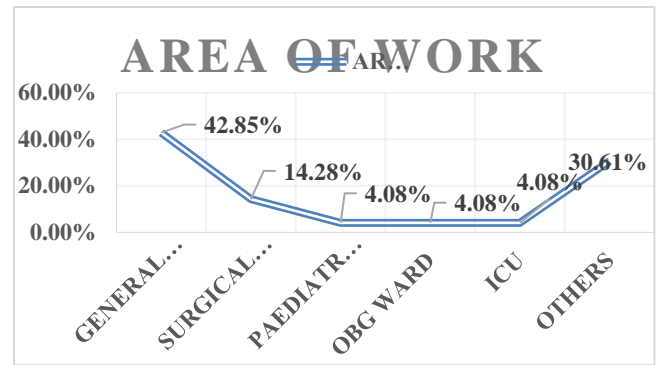


Fig 4: Line graph showing the percentage distribution of patients according to area of work.

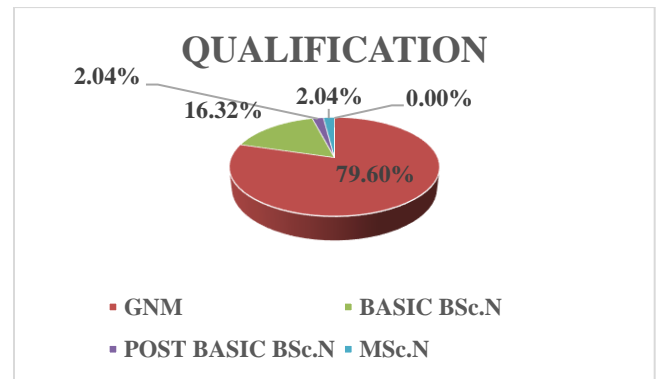


Fig 5: 3D Pie chart showing the percentage distribution of patients according to gender.

SECTION II: Analysis and interpretation of pre-test and post-test knowledge scores on practice of nursing officers regarding management of Intravenous line to prevent phlebitis in patients admitted in selected hospital.

Table 1: Overall mean pre-test and post-test knowledge scores of nurses N=49

KNOWLEDGE	NUMBER OF ITEMS	MEAN SCORE	MEAN SCORE PERCENTAGE (%)
Pre-test	25	9.897	20.197 %
Post-test		16.204	33.069 %

Table 2: Frequency and percentage distribution of pre-test and post-test knowledge scores of nursing officers based on knowledge. N=49

LEVEL OF KNOWLEDGE	SCORING	PRE-TEST		POSTTEST	
		f	Percentage (%)	f	Percentage (%)
Very poor	0-5	5	10 %	-	-
Poor	6-10	28	57.14 %	-	-
Average	11-15	11	22.44 %	21	42.85 %
Good	16-20	5	10 %	28	57.14 %
Excellent	21-25	-	-	-	-

SECTION III: Analysis of effectiveness of workshop for nursing officers on level of knowledge on practice regarding management of IV line to prevent phlebitis in patients admitted in selected hospital.

Table 3: Mean, standard deviation, ‘t’ value and ‘P’ value computed with the pre-test and post-test knowledge scores of nursing officers.

N= 49

KNOWLEDGE	MEAN SCORE	SD	SE	‘t’	‘P’ value	Inference
Pre-test	9.897	3.3303	0.4757	-6.108	0.000	Significant*
Post-test	16.204	2.4961	0.3222			

Key: *- p value<0.05 (0.000<0.05) indicates significant

Discussion

The findings indicate that a majority of nursing officers were young, with 65.30% aged between 22-25 years. Females dominated the workforce at 71.42%. Concerning experience, 59.18% had 1 month-1 year of experience. Regarding qualifications, 79.60% held a GNM degree.

In terms of knowledge, the pre-test mean score was 9.897 (20.197%), increasing to 16.204 (33.069%) post-test. Pre-test knowledge distribution showed 57.14% with poor knowledge, while post-test revealed 57.14% with good knowledge.

The workshop significantly improved knowledge ($t[49] = -6.108, p < 0.05$), supporting the hypothesis. However, no significant association was found between pre-test knowledge and demographic variables.

These results highlight the effectiveness of workshops in enhancing nursing officers' knowledge, especially in preventing phlebitis. Further research could explore other factors influencing knowledge levels.

Limitations

The limitations of the study were:

- The study was limited to only nursing officers from selected hospital who were present during the data collection.

- As the study adopted convenience sampling, the generalisation of the findings outside the study samples are limited.

Recommendations

The following recommendations are

- A large sample study can be conducted to generalise the findings
- An experimental study can be conducted to establish the effectiveness of workshop on intravenous line management and prevention of phlebitis in patients admitted in a selected hospital.
- A comparative study can be conducted on samples from two different settings.

Conclusion

The study evaluated the effectiveness of a workshop for nursing officers in a selected hospital Bangalore, regarding the management of intravenous (IV) lines to prevent phlebitis in patients.

Results showed a significant increase in mean post-test knowledge scores compared to pre-test scores ($t = -6.108, p < 0.05$), indicating the workshop's effectiveness. The findings suggest that workshops are valuable in enhancing nursing officers' skills and knowledge, potentially reducing the risk of phlebitis and improving patient care.

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