

Effectiveness of Training Program On Nursing Information System for Capacity Building Among Staff Nurses

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Abstract

Introduction : The Nursing Information System (NIS) is part of the Health Information System for Health Information, focusing on the management and documentation of nursing documents, focusing on nursing work. As a component of the healthcare and hospital information system, nursing information systems have evolved over the years, with strategies and approaches for designing and developing hospital information systems.

Methodology : A Quasi- experimental one group pre-test and post-test control group design was considered as the appropriate design for this study. The study design depicted that one pre-test followed by post tests with intervention of training program was conducted in Khandaka Hospital, Jaipur. The total study sample consisting of 30 staff nurses.

Result : The post-test mean score is 34.8 in experimental group while post-test mean score is 34.13 in control group with 0.67 mean difference. The post-test median and SD are 35; 3.72 respectively in experimental group whereas post-test median and SD are 34; 2.41 respectively in control group. The t value is 0.69.

Conclusion : Data revealed that the respondents had significantly higher competency after exposure to the training programme regarding nursing information system.

Keywords : NIS, Capacity building, HIS

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How to cite this article : Soni H, Kateva P, Kumar P. Effectiveness of Training Program On Nursing Information System for Capacity Building Among Staff Nurses. Glob. Nurs. J. India 2024; 8: I: 827-830.

Submitted: 13/04/2025, Accepted: 30/04/2025, Published:06/05/2025

Introduction

The Nursing Information System (NIS) is part of the Health Information System for Health Information, focusing on the management and documentation of nursing documents,

focusing on nursing work. The various goals that a nursing information system should fulfill in order to achieve its objectives, encompass the users' requirements and function effectively are outlined. The functions of these systems, which

work in conjunction with the fundamental tasks of nursing care, are analyzed. As a component of the healthcare and hospital information system, nursing information systems have evolved over the years, with strategies and approaches for designing and developing hospital information systems changing from the 1970s to the 1990s. The three primary methods employed were the "centralized approach", the "departmental approach", and the "distributed approach". The advantages and disadvantages of each unique approach are examined. In order to successfully implement or upgrade a nursing information system, it is crucial to establish a committee consisting of various healthcare professionals.¹

The utilization of information and communication technologies (ICTS) for health, known as ehealth, serves as a tool to enhance the delivery of healthcare services. These advancements in technology revolutionize the way nurses approach patient care, and this trend will persist as technology continues to evolve. The ways in which nurses gather and analyze diagnostic data, make clinical choices, interact and socialize with patients and their families, and carry out clinical procedures will undergo significant changes as a result of increased integration of information and communication technologies (ICTS) into nursing practice.²

In the ever-changing healthcare landscape, technology plays a crucial role in both education and nursing practice. It appears crucial to examine the role of nurses and emphasize the importance of educational programs that can effectively integrate with the rapid advancements in technology. A comprehensive review was accompanied by an extensive search in databases and a library, specifically targeting the keywords. The criteria used for selecting studies primarily centered around nursing informatics and the significance of possessing specialized knowledge in utilizing information technology effectively across all facets of the nursing profession. In a thorough evaluation of new technologies, the essential components of nursing informatics implementation were examined as a means to enhance healthcare, utilize advanced systems, and leverage the internet and network.⁴

Objectives

1. To assess the competency level for using nursing information system based on pre-test.
2. To evaluate the effectiveness of training program on nursing information system by comparing pre and post-test competency level.

3. To determine association between experimental group & control group competency level for using nursing information system.
4. To determine association between demographic variables and competency level of staff nurses on nursing information system in both experimental and control group.

Hypotheses

- ▼ **H₁** : There will be significant difference between the pre-test and post-test competency level of staff nurses who receive the training program regarding the nursing information system.
- ▼ **H₂** : There will be significant association between the demographic variables and pre-test competency level of staff nurses regarding nursing information system in both experimental group and control group.

Methodology

Research Approach : The research approach in this study was an evaluative research approach

Research Design : Quasi-experimental one group pre-test post-test control group research design was considered suitable.

Research Setting : The present study has been conducted in Khandaka Hospital, Jaipur.

Population : In the present study the population comprises of staff nurses working in Khandaka Hospital, Jaipur.

Sample : Sample chosen for the present study from Khandaka Hospital, Jaipur.

Sample Size : The sample size considered for the study was 30 staff nurses (15 for experimental group and 15 for control group) chosen for the study from Khandaka Hospital, Jaipur.

The competency level of the respondents was classified into 3 categories.

- ▼ Poor competency = <50%
- ▼ Average competency = 51-65%
- ▼ Good competency = >65%

Content Validity of the Tool : The tool was tested by nine experts, including six Ph.D. Nursing and one of them has endocrinology, one is a physician in the research department and one is a health informatic department. This measure was also presented to members of the research committee.

Tryout and reliability of tool : The reliability of this tool was assessed by leading the tool of 30 nurses at Jeevan Rekha Super Specialty Hospital in Jaipur after filing the authorities in Jaipur. The reliability of the tool section consisting of ability-based questions was tested with shared semi-measurements using Karl Pearson's C efficiency correlation and reliability calculation coefficient $r = 0.73$.

Results

Section I : Assess The Level Of Competency Of Staff Nurses Regarding Nursing Information System

a. Level Of competency of staff nurse Regarding nursing information system in experimental group

Table No. 1: Level of competency of staff nurse Regarding nursing information system in experimental group

S.No.	Aspect	Before intervention		After intervention	
		Frequency	Percentage	Frequency	Percentage
1.	Poor <50%	03	20%	00	00%
2.	Average 51 - 65%	10	66.66%	05	33.33%
3.	Good >65%	02	13.33%	10	66.66%

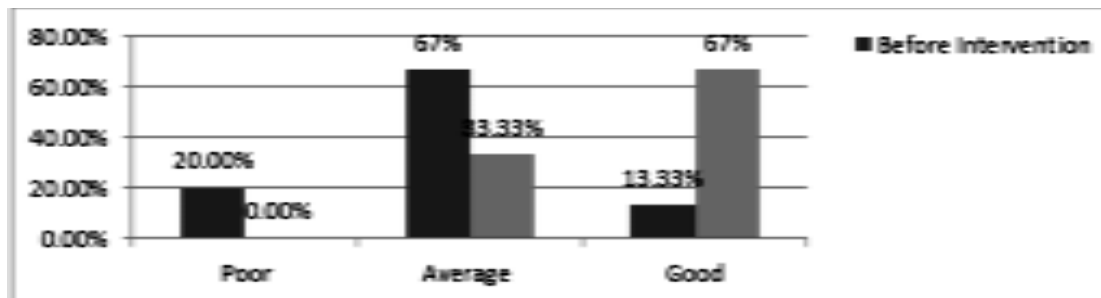


Fig. No. 1: Column diagram showing the level of competency of nursing staff before and after intervention in experimental group

Table No. 2: Level of competency of staff nurse Regarding nursing information system in control group

S.No.	Aspect	Before intervention		After intervention	
		Frequency	Percentage	Frequency	Percentage
4.	Poor <50%	0	00%	0	00%
5.	Average 51 - 65%	07	46.66%	05	33.33%
6.	Good >65%	08	53.33%	10	66.66%

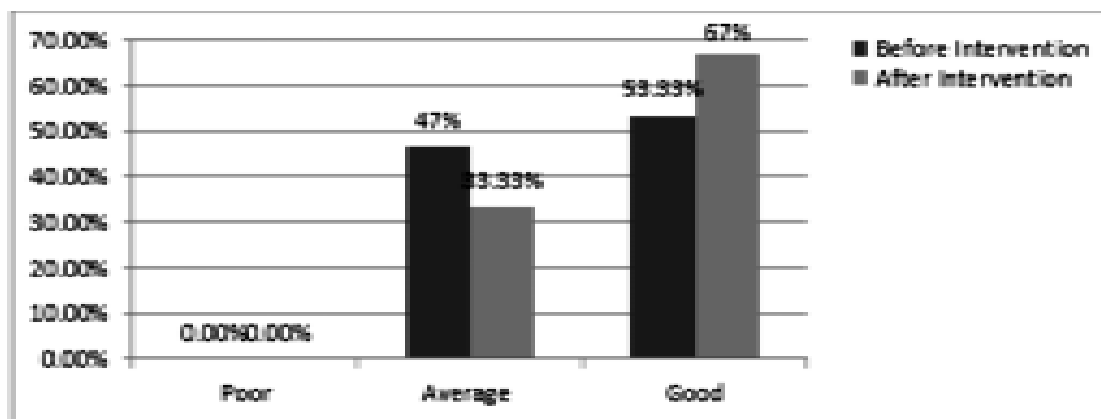


Fig. No. 2: Column diagram showing the level of competency of nursing staff before and after intervention in control group

Section II : Evaluate The Effectiveness of Training Programme Regarding Nursing Information System

Effectiveness of training programme regarding nursing information system in experimental and control group

Table 3: Mean, median, SD and t value of competency level

N=30

S.No.	Level of competency	Mean	Median	SD	Mean difference	Df	t value
1.	Post experimental	34.8	35	3.72	0.67	14	0.69
2.	Post control	34.13	34	2.41			

The calculated value i.e. 0.69 is less than tabulated value i.e. 2.45 at 0.05 level of significance. So, we can say that the training programme regarding nursing information system is effective for staff nurses regarding nursing information system in experimental group. The hypothesis H_1 is accepted.

Conclusions

Effectiveness of training programme on competency of respondents by comparing pre-test and post-test competency score:

The level of competency among staff nurses regarding nursing information system was assessed in pre-test out of 30 staff nurses in which 03 (20%) staff nurses had poor competency level whereas 00 (00%) staff nurses had poor competency level in post-test, 10 (66.66%) staff nurses had average competency level in pre-test whereas 5 (33.33%) staff nurses had average competency level in post-test and 02 (13.33%) staff nurses had good competency level in pre-test whereas 10 (66.66%) staff nurses had good competency level in post-test in experimental group. Data revealed that the respondents had significantly higher competency after exposure to the training programme regarding nursing information system.

Financial support and sponsorship : Nil

Conflicts of interest : The author declare that they have no conflict of interest with regard to the content of the report.

References

- Liaskos J, Mantas J. Nursing Information System. *Stud Health Technol Inform.* 2002;65:258-65. PMID: 15460230.
- Rouleau G, Gagnon MP, Côté J, Payne-Gagnon J, Hudson E, Dubois CA. Impact of Information and Communication Technologies on Nursing Care: Results of an Overview of Systematic Reviews. *J Med Internet Res.* 2017 Apr 25;19(4):e122. doi: 10.2196/jmir.6686. PMID: 28442454; PMCID: PMC5424122.
- Li Q, Chen Y. Application of Intelligent Nursing Information System in Emergency Nursing Management. *J Healthc Eng.* 2021 Aug 4;2021:3998830. doi: 10.1155/2021/3998830. Retraction in: *J Healthc Eng.* 2023 Oct 18;2023:9875341. doi: 10.1155/2023/9875341. PMID: 34394890; PMCID: PMC8360716.
- Darvish A, Bahramnezhad F, Keyhanian S, Navidhamidi M. The role of nursing informatics on promoting quality of health care and the need for appropriate education. *Glob J Health Sci.* 2014 Jun 25;6(6):11-8. doi: 10.5539/gjhs.v6n6p11. PMID: 25363114; PMCID: PMC4825491.
- Oroviogoicochea C, Watson R. A quantitative analysis of the impact of a computerised information system on nurses' clinical practice using a realistic evaluation framework. *Int J Med Inform.* 2009 Dec;78(12):839-49. doi: 10.1016/j.ijmedinf.2009.08.008. Epub 2009 Sep 19. PMID: 19767235.
- Wu, M., Lai, S., Huang, C., & Chang, T. (2023). Evaluation of the nursing information system and quality indicators improvement: A case study in Taiwan from 2011 to 2022. *Online Journal of Nursing Informatics (OJNI)*, 26(3), <https://www.himss.org/resources/online-journal-nursing-informatics>
- Kahouei M, Baba Mohammadi H, Askari Majdabadi H, Solhi M, Parsania Z, Said Roghani P, Firozeh M. Nurses' perceptions of usefulness of nursing information system: module of electronic medical record for patient care in two university hospitals of iran. *Mater Sociomed.* 2014 Feb;26(1):30-4. doi: 10.5455/msm.2014.26.30-34. Epub 2014 Feb 20. PMID: 24757398; PMCID: PMC3990381.