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Effectiveness of a Structured Teaching Programme on Knowledge and Practice Regarding Post-Stroke Rehabilitation Among Nursing Officers in Selected Hospitals of Udaipur

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ABSTRACT:
Background of the study: Stroke is a leading cause of long-term disability, and effective rehabilitation is crucial to improving the quality of life of survivors. Nursing professionals play a vital role in post-stroke rehabilitation; however, gaps in knowledge and practice often hinder effective care.
Objective of the study: This study aimed to evaluate the effectiveness of a Structured Teaching Programme (STP) on enhancing knowledge and practice regarding post-stroke rehabilitation among nursing officers in selected hospitals of Udaipur.
Methodology: Quantitative Research Approach and A quasi-experimental, non-equivalent control group pre-test–post-test research design was used with 300 nursing officers, equally divided into experimental and control groups. Data were collected using a structured knowledge questionnaire and an observational checklist, followed by the intervention delivered through lectures, demonstrations, and discussions. **Result:** Results revealed significant improvement in the experimental group's knowledge (mean 11.40 to 21.93, $p < 0.001$) and practice (15.1 to 25.2, $p < 0.001$), with a positive correlation between the knowledge & Practice.
Conclusion: The findings highlight the importance of structured educational programs in bridging professional competency gaps and strengthening post-stroke care outcomes.

Keywords: Stroke, Post-stroke Rehabilitation, Nursing Officers, Structured Teaching Programme, Knowledge, Practice

INTRODUCTION

Stroke is a leading cause of mortality and long-term disability worldwide, with approximately 15 million people affected annually. The majority of these cases occur in low- and middle-income countries, where healthcare resources are often limited. In 2019, stroke accounted for 79.6 million disability-adjusted life years (DALYs), making it a significant contributor to the global disease burden. The economic impact is substantial, encompassing direct medical costs and indirect costs related to lost productivity and long-term care. The aging global population and increasing prevalence of risk factors such as hypertension and diabetes are expected to further elevate the incidence of stroke. These trends underscore the urgent need for effective prevention, early intervention, and rehabilitation strategies to mitigate the impact of stroke on individuals and societies.[1]

[1] GBD 2019 Stroke Collaborators. (2021). *Global, regional, and national burden of stroke and its risk factors, 1990–2019: A systematic analysis for the Global Burden of Disease Study 2019. The Lancet Neurology, 20*(10), 795–820. https://doi.org/10.1016/S1474-4422(21)00252-0

Post-stroke rehabilitation is critical in helping individuals regain lost functions and improve their quality of life. Rehabilitation programs typically include physical therapy, occupational therapy, speech-language therapy, and psychological support. Early initiation of rehabilitation has been shown to enhance recovery outcomes, including motor function, communication skills, and cognitive abilities. Multidisciplinary approaches that involve healthcare professionals from various disciplines ensure comprehensive care tailored to the individual's needs. Effective rehabilitation not only aids in physical recovery but also addresses the psychological and social aspects of recovery, facilitating reintegration into the community.[2]

SIGNIFICANCE & NEED OF THE STUDY

Stroke has emerged as one of the leading causes of disability in India, with reported incidence ranging between 105–152 per 100,000 persons annually and prevalence varying from 44 to 559 per 100,000 populations across different regions. Despite this high burden, post-stroke rehabilitation services remain underutilized and inconsistently delivered, particularly in resource-limited settings. Nurses, being the frontline caregivers, play a vital role in supporting patients through rehabilitation, yet several studies from Indian hospitals in 2024 highlight gaps in their baseline knowledge and practical application of rehabilitation techniques. For instance, nurse-led interventions have shown measurable improvements in patients' daily functioning and awareness, but only a small proportion of patients and caregivers demonstrated good awareness prior to such training. These findings suggest an urgent need to strengthen nursing professionals' knowledge and practice through structured teaching Programme, which could bridge current gaps and improve post-stroke recovery outcomes in the Indian healthcare context.[3]

India carries a heavy stroke burden, with nearly 1.8 million new cases reported annually and an incidence rate of around 138 per 100,000 populations according to the National Stroke Registry Programme. Despite advances in acute stroke care, rehabilitation remains fragmented, and nursing professionals often face challenges in applying evidence-based rehabilitation practices consistently. A 2024 Indian study highlighted that patients' awareness and coping improved significantly after nurse-led rehabilitation, yet baseline knowledge was strikingly poor among both patients and caregivers. This gap emphasizes the pressing need to assess and enhance the level of knowledge and practice among nurses, who are crucial in delivering early and continuous rehabilitation. Strengthening their skills through structured teaching interventions could ensure more effective recovery and reduce long-term disability among stroke survivors.[4]

[2] Winstein, C. J., Stein, J., Arena, R., et.al. (2016). *Guidelines for adult stroke rehabilitation and recovery: A guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke, 47*(6), e98–e169. https://doi.org/10.1161/STR.0000000000000098

[3] Kamalakannan, S., Gudlavalleti, A. S. V., Gudlavalleti, V. S. M., Goenka, S., & Kuper, H. (2017). *Incidence and prevalence of stroke in India: A systematic review. Indian Journal of Medical Research, 146*(2), 175–185. https://doi.org/10.4103/ijmr.IJMR_516_15

[4] Pandian, J. D., Sudhan, P., Kaur, P., Pothiyil, D. et.al. & on behalf of the National Stroke Registry Programme Collaborators. (2023). *Stroke incidence, mortality, subtypes in rural and urban populations in five geographic areas of India (2018–2019): Results from the National Stroke Registry Programme. International Journal of Stroke, 18*(3), 287–298. https://doi.org/10.1177/17474930221105455

THEORETICAL FRAMEWORK

General System Theory (GST), proposed by Ludwig von Bertalanffy in 1968, represents an important turning point in scientific inquiry, as it shifted attention from reductionist approaches toward a holistic understanding of systems. According to GST, every system can be analyzed through its four essential components: Input, Process, Output, and Feedback.[5]

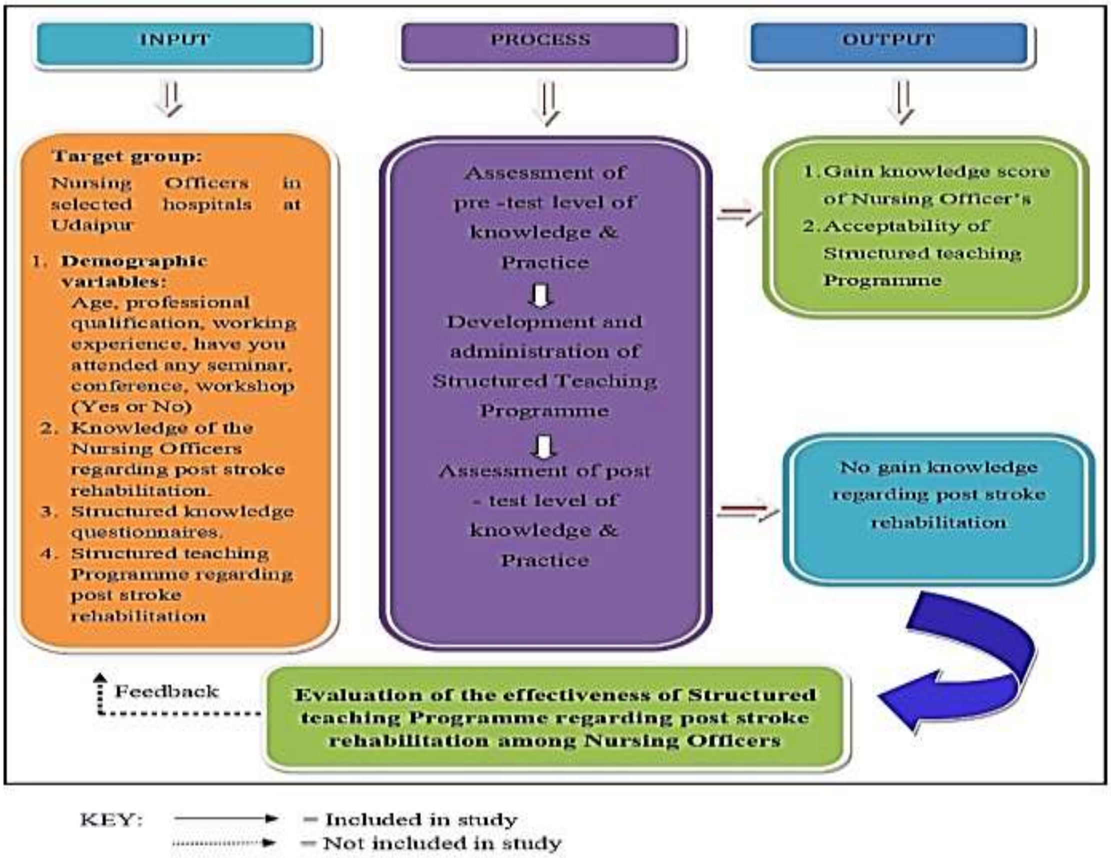

Figure.1.1 Modifying conceptual framework based on the general system theory by Ludwig von Bertalanffy (1968)

OBJECTIVES OF THE STUDY

1. To assess the pre-test & post-test level of knowledge and practice of nursing professionals regarding post stroke rehabilitation
2. To evaluate the effectiveness of the structured teaching programme by comparing pre-test and post-test knowledge and practice scores.
3. To correlate the post-test level of knowledge with practice score regarding post stroke rehabilitation in the experimental group and control group

4. To find out association between selected demographic variables with pre-test level of knowledge and practice regarding post stroke rehabilitation care in the experimental and control group.

[5] Selvaraj, P., & Sankaranarayanan, R. (2020). Theories of general systems and conceptual structures for case-based and concept mapping in nursing education. *International Journal of Nursing Education, 12*(3), 25–31. https://doi.org/10.37506/ijone.v12i3.10523

MATERIALS AND METHODS

The present study adopted a quantitative research approach utilizing a quasi-experimental non-equivalent control group pre-test–post-test design to assess the effectiveness of a Structured Teaching Programme (STP) on the knowledge and practice of nursing officers regarding post-stroke rehabilitation. This design allowed comparison between experimental and control groups without randomization, thereby maintaining practical feasibility in hospital settings while still ensuring valid results.

The research was conducted in two tertiary care institutions—GBH American Hospital and Geetanjali Medical College and Hospital (GMCH)—located in Udaipur, Rajasthan. Both hospitals were chosen for their specialized neuro-rehabilitation departments, high patient load, and availability of qualified nursing staff. A total of 300 nursing officers (150 in each group) were selected through purposive sampling based on inclusion criteria such as active service in Neuro Wards, Neuro ICUs, and related units.

Data collection tools included a structured knowledge questionnaire and an observational checklist, meticulously developed and validated by a panel of ten experts comprising nursing faculty, physicians, and statisticians. The questionnaire assessed theoretical understanding across domains like range of motion exercises, communication, nutrition, and hygiene, while the checklist measured practical application in patient care. Both tools exhibited excellent reliability, with coefficients of $r' = 0.98$ for knowledge and $r = 0.92$ for practice, confirming consistency and dependability. Prior to the main study, a pilot study conducted at GMCH demonstrated the feasibility, clarity, and practicality of the tools. Ethical approval was obtained from Nirwan University, Jaipur, and informed consent was taken from all participants, ensuring confidentiality and voluntary participation.

Overall, the study's systematic methodology, ethical rigor, and robust statistical analysis ensured reliability, validity, and generalizability of findings, ultimately demonstrating that structured educational interventions can significantly enhance nursing officers' knowledge and practical skills in post-stroke rehabilitation

RESULTS

The results and discussion of this study highlight the effectiveness of a Structured Teaching Programme (STP) in enhancing the knowledge and practice of Nursing Officers regarding post-stroke rehabilitation.

The demographic analysis revealed that most participants were young professionals, with the majority aged 25–30 years, holding GNM qualifications, and having limited work experience. Few had attended prior training or workshops on stroke rehabilitation, reflecting a gap in professional exposure.

The analysis of the study results revealed that the Structured Teaching Programme (STP) had a significant impact on improving the knowledge and practice of nursing officers regarding post-stroke rehabilitation. Before the intervention, most participants in the experimental group had poor to average knowledge, while post-test findings showed that 72% achieved good knowledge levels, indicating a remarkable improvement.

The mean knowledge score increased from 11.40 ± 2.17 in the pre-test to 21.93 ± 2.75 in the post-test with a statistically significant difference ($p < 0.001$). Similarly, the mean practice score rose from 15.1 ± 8.5 to 25.2 ± 7.6, confirming that structured teaching combined with demonstration effectively enhanced both theoretical understanding and clinical performance. In contrast, the control group exhibited minimal improvement, showing the clear effectiveness of the STP intervention. A moderate positive correlation ($r = 0.511$, $p = 0.004$) between post-test knowledge and practice scores in the experimental group indicated that higher knowledge led to better performance. Additionally, educational qualification, working experience, and prior training were significantly associated with improved outcomes.

Table 1: Comparison of pre-test and post-test knowledge score regarding post stroke rehabilitation among the experimental and control group

N=300

Group	Test	Mean	SD	't' Value	p-Value	Significance
Experimental	Pre-test	11.40	2.17	16.620	0.001	S***
	Post-test	21.93	2.75			
Control	Pre-test	9.97	1.19	1.649	0.110	NS
	Post-test	10.37	1.73			

**S = Significant, NS = Not Significant, ***p < 0.001

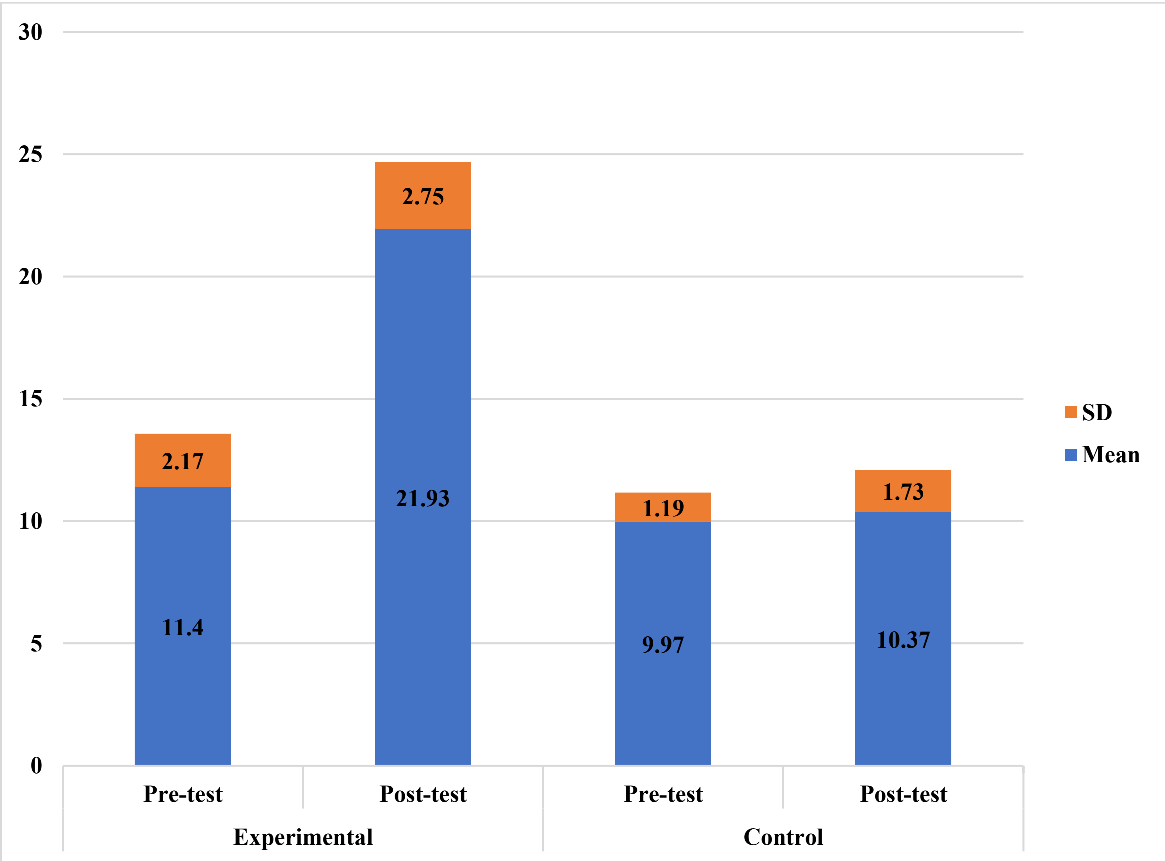

Figure 1: Comparison of pre-test and post-test level of knowledge regarding post stroke rehabilitation between the experimental and control group.

Table 1 & Figure 1: Depicts that in the experimental group showed a significant increase in mean knowledge score from 11.40 ± 2.17 (pre-test) to 21.93 ± 2.75 (post-test) with $t = 16.620$, $p < 0.001$, which is statistically significant at the 0.05 level. In contrast, the control group showed only a minimal, non-significant improvement from 9.97 ± 1.19 to 10.37 ± 1.73 with $t = 1.649$, $p = 0.110$. Overall, the comparison highlights that the structured teaching programme significantly improved knowledge scores in the experimental group**,** while routine hospital teaching and practices in the control group did not yield significant changes.

DISCUSSION

The present study evaluated the effectiveness of a Structured Teaching Programme (STP) on post-stroke rehabilitation knowledge and practice among Nursing Officers. Demographic analysis revealed most participants were young (25–30 years), with limited clinical experience (0–3 years) and minimal exposure to stroke rehabilitation training.

Pre-test findings indicated poor to average knowledge and only satisfactory practices. However, after the STP, the experimental group showed significant improvement, with 72% achieving good knowledge and 60–68% demonstrating good practice across key care domains, while the control group remained unchanged. Statistical analysis confirmed a highly significant difference in pre- and post-test scores, supporting Hypotheses H_1 and H_2. Correlation analysis showed a moderate positive relationship between knowledge and practice, affirming Hypothesis H_3. Additionally, educational qualification, clinical experience, and prior training were significantly associated with outcomes, partially supporting Hypothesis H_4.

Overall, the STP proved effective in enhancing both knowledge and practice, aligning with previous evidence and highlighting the need for structured rehabilitation training.

CONCLUSION

The study concludes that the Structured Teaching Programme (STP) was highly effective in improving both knowledge and practice of Nursing Officers regarding post-stroke rehabilitation. The experimental group showed significant gains in knowledge and clinical skills compared to the control group, with a clear positive correlation between knowledge and practice. Educational qualification, clinical experience, and prior training were important factors influencing outcomes. Overall, the findings highlight the importance of structured, evidence-based teaching in strengthening nursing competencies and ensuring improved patient care outcomes.

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