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Research Article

Impact of Aneurysm Care Oriented Program on Knowledge Regarding Post-Operative Care of Cerebral Aneurysm Patients Among Nurses in a Tertiary Care Hospital of North India for Consideration for Publication

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ABSTRACT

Introduction: Early intervention and timely nursing management in the post-operative period can improve functional outcomes in post-operative cerebral aneurysm patients. Nurses need to be aware of the specific interventions to be carried out for these patients.

Method: Pre-experimental study design was used for the present study and one hundred twenty nurses working in neurosurgical units of a tertiary care hospital were enrolled in the study. A pre-validated questionnaire of 20 items was used to collect the data. The educational method employed in this study was a one-day aneurysm care workshop program. Participants (n=120) completed a multiple choice question (MCQ) test, derived from topics covered in the workshop, before the intervention. The MCQ test was repeated immediately after the workshop and at one month to assess retention and application of knowledge. Ethical aspects were given due considerations and data was analysed using descriptive and inferential statistics.

Results: The mean age of the nurses was 31.83 ± 7.49 with the range of 24 -50 years. The mean knowledge score before the intervention was 10.18 ± 2.02, it was 17.79 ± 5.84 immediately after intervention and 15.63 ± 2.07 after one month. There was a statistically significant association of knowledge with the educational status of nurses at p-value <0.05.

Conclusion: The workshop method was found feasible and effective in terms of improvement of the knowledge of nurses. There is a need to organize such a type of educational program to update the knowledge of nurses. The workshop intervention can also help to guide improvements in the implementation of policies for improved management of the care provided to post-operative cerebral aneurysm patients.

Keywords: Post aneurysm nursing care; Aneurysm Care Oriented Program; Knowledge; Neurosurgery nurses

INTRODUCTION

To put knowledge into action, the knowledge and skills associated with evidence-based decision-making are necessary. Shreds of evidence say that continuing professional development impacts positively on patient outcomes is necessary to sustain an on-going investment in learning activities. [1] Health professionals are increasingly expected to use research evidence in practice, program development, and policy decisions to improve patient's health outcomes. This involves finding, accessing, and interpreting the best available research evidence and then adapting, implementing, and evaluating its impact. [2] The finding of several studies conducted worldwide supported the positive effect of educational interventions on the quality of nursing care as well as on nurses' knowledge [3]. Rising challenges in nursing practices due to advancement in medical science and increased expectations from health care professionals required active and useful training methods according to the needs of patients, institutions, and professions. The continued educations programs like workshops, conferences, seminars, etc. can enhance efficiency that is purposeful and based on nurses' educational needs [4,5].

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A cerebral aneurysm is a weakening and out-pouching of a cerebral artery. This is a life-threatening condition and the post-operative period is vital for the recovery of cerebral aneurysm patients as the risk of hemodynamic instability is more common. Risks are due to the long duration of surgeries, an unstable neurological status due to brain injury, and altered sensorium [6].

Nurses are directly involved in almost all aspects of patient care such as assessing and monitoring patients. [7] To provide specialized care, nurses must be aware of the incidence, clinical manifestations, pathophysiology, and type of available treatments for cerebral aneurysms. [8] The current study was carried out to evaluate the effect of an educational intervention on knowledge about post-operative care of cerebral aneurysm patients among nurses.

MATERIALS AND METHODS

The study was carried out at a tertiary care hospital in north India best known for centre of excellence in neurosurgery. Using the total enumeration technique a total of one hundred twenty nurses working in neurosurgery units were enrolled. An informed consent was obtained from each participant and the motive of study and methods was informed. Socio demographic profile of the participants such as age, gender, marital status, educational status, occupation, habitat, number of family members along with work profile including work experience, duration of working in neurosurgery unit, previous experience to work on protocol-based nursing intervention and having attended any conference, workshop related to cerebral aneurysm care was collected. A self-structured knowledge questionnaire was used to assess knowledge related to the care of cerebral aneurysm patients from nurses.

Knowledge Questionnaire: To assess the knowledge of nurses regarding post-operative nursing care of cerebral aneurysm patients, 20 multiple choice questions were prepared. Knowledge of nurses was assessed regarding cerebral aneurysm; subarachnoid haemorrhage; preparation of unit; initial assessment of the patient; neurological examination; post-surgery positioning of patients; disinfectant used for carbonization of patient's bed; surgical treatment options for cerebral aneurysm; vital sign monitoring; patient reassessment; test to be performed before starting RT feed; when to start physiotherapy postoperatively; dietary management of post-operative aneurysm patients; a sign of complications. Each correct answer was given 1 mark and zero for the wrong answer. Scores less than or equal to 50% of the total score assumed as average knowledge, scores of 51% to 75% of total scores assumed as good knowledge; and score 75% or above of total score assumed as excellent knowledge.

Ethical consideration: This study was approved by the Institute Ethics Committee and informed consent of the participants was obtained. (CTRI Number REF/2018/03/018902 Ethical permission number. NK/3309/MSC.) Furthermore, the participants remained anonymous with the right to withdraw from the study at any stage and none of the results of the test were disclosed to maintain the confidentiality of the data.

Intervention: Baseline data and pretest knowledge of study participants were collected. After that one day workshop was carried out with a total of five lectures along with hands-on training and group discussion on topics related to the care of post-operative cerebral aneurysm were delivered by experts. Posttest was taken immediately after the workshop and at one month of intervention by approaching them at their working places. Although after month posttest, out of 120 nurses who participated in the workshop, only 98 participants responded.

RESULTS

In the present study, the mean age of the participant nurses was 31.84 years with SD ± 5.88 years and range of 24 -50 years. Majority of the nurses (61.6%) were females and graduates (55.8%). 60.8% participants were Hindu by religion. Around half of nurses (45%) nurses were having less than 5 years of working experience. Majority of nurses (79%) were nursing officer. Mean working experience of nurses in neurosurgery unit was 5.61 ± 3.76 years with range 1 –17years. Majority of nurses were having less than 5 years' experience and only 7.5% nurses had 16 years and above experience (Table 1).

Mean knowledge score of nurses before intervention was 10.18 ± 2.02 whereas in post-test immediate after intervention, it was improved to 17.79 ± 5.84. At 1 month post-test mean knowledge score of nurses was 15.63 ± 2.07 Figure 1.

In category-wise comparison of knowledge score of nurses, In pre-test, 42.2% nurses scored between 50-75% and majority of nurses (57.8%) scored between 25-50%. Whereas in post-test, majority of nurses (97.2 %) scored between 75- 100% where only 2.8% nurses scored between 50-75%.At 1 month 87.8% nurses scored between 75 to 100%, and 11.2% scored between 50-75%,where only 1% nurses scored between 25-50%. There was statistically significant difference in category-wise knowledge score of nurses in pre-test and post- test. ($p<0.05$) (Figure 2).

Table 1: Socio-demographic profile of nurses N=120.

Socio-demographic variable	f(%)
Age(years)*	
21-30	72(60.0)
31-40	39(32.5)
41-50	09(7.5)
Gender	
Male	46(38.4)
Female	74(61.6)
Background	
Rural	65(54.1)
Urban	55(45.9)
Education	
Diploma in Nursing	47(39.2)
Graduation in Nursing	67(55.8)
Post-graduation in Nursing	06(05.0)
Religion	
Hindu	73(60.8)
Sikh	40(33.4)
Others (Muslim, Christian)	07(5.8)
Designation	
Nursing officer	95(79.1)
Senior Nursing officer	25(20.9)
Area of Posting	
Neurosurgery ward	85(70.8)
Neurosurgery Intensive Care Unit	35(29.2)
Total experience in neurosurgery unit#(years)	
≤5	54(45.0)
6-10	33(27.5)
10-15	24(20)
≥16	09(7.5)

*Mean age ± SD (years): 31.84 ± 5.88, Range 24 – 50 years
#Mean total working experience in neurosurgery unit ± SD (years): 5.61 ± 3.76, Range 1 – 17 years

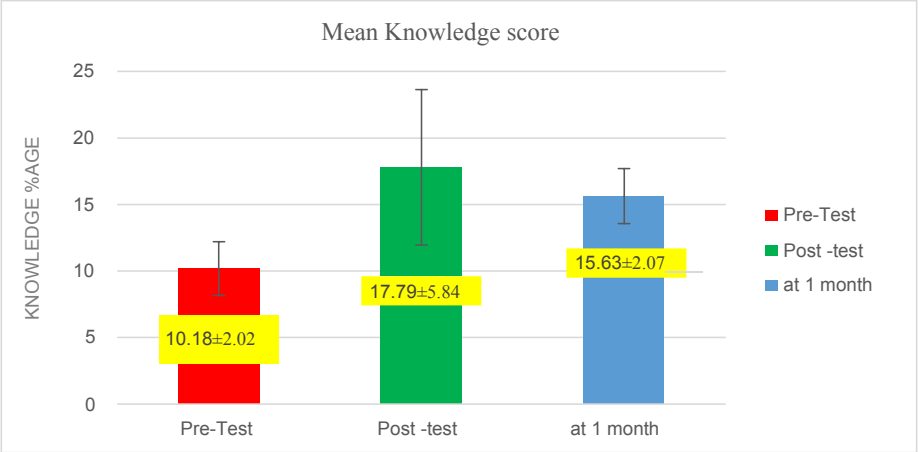

Figure 1: The mean score of knowledge of nurses.

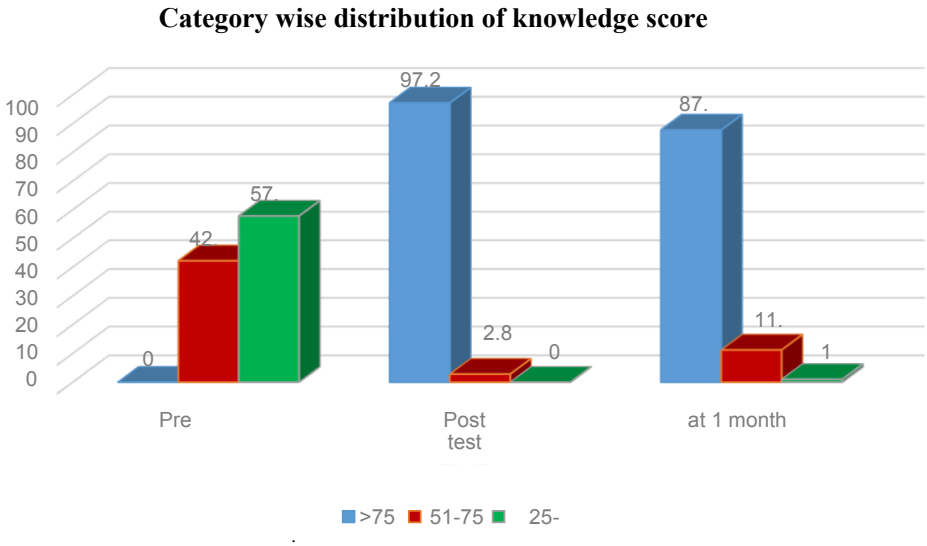

Figure 2: Category wise distributions of Knowledge Score.

Table 2: Comparison of mean knowledge scores with age, educational status and experience.

Variable		Pre score Mean ± SD (N=120)	F (df) p value	Post score Mean ± SD (N=120)	F (df) p value	1 month Mean ± SD (N=98)	F (df) p value
Age (in years)	21-30	10.21 ± 2.03	0.02 (119) 0.8	17.86 ± 2.15	0.43 (119) 0.05*	15.96 ± 1.52	1.23 (97) 0.3
	31-40	10.15 ± 2.05		17.56 ± 2.88		15.34 ± 2.47	
	Above 40	10.11 ± 2.07		18.33 ± 1.58		15.22 ± 2.99	
Education status	Diploma	10.34 ± 1.77	0.13 (119) 0.8	18.06 ± 1.83	0.50 (119) 0.6	15.33 ± 2.02	3.13 (97) 0.04*
	Graduation	10.11 ± 2.24		17.63 ± 2.60		16.17 ± 1.75	
	Post- Graduation	10.18 ± 2.18		17.80 ± 2.39		14.75 ± 0.5	
Experience in neurosurgery unit	≤5years	10.19 ± 1.97	1.02 (119) 0.5	17.32 ± 2.24	0.65 (119) 0.5	16.04 ± 1.64	0.72 (97) 0.5
	6-10years	10.12 ± 2.01		17.31 ± 2.01		15.67 ± 2.09	
	11-15years	10.28 ± 2.69		18.3 ± 1.25		15 ± 3.57	
	≥15years	12 ± 2.82		17.5 ± 2.12		15.5 ± 0.71	

*p value significant at <0.05

Comparison of mean knowledge score with age found association during post-test at p value <0.05. During post-test highest mean knowledge was seen in nurses above 40 years with mean 18.33±1.58. However, there was no link with age in protest, and post-test at one month. Comparison of mean Knowledge score of nurses with education status depicted that there was statistically significant comparison in education level of participants with their knowledge score at 1 month post-test assessment with p value 0.04. However, no statistically significant association of knowledge with experience of nurses in neurosurgery units was found during protest, immediate post-test and at 1 month of assessment (Table 2).

DISCUSSION

The study was conducted to evaluate the effectiveness of aneurysm care oriented program on nurses' knowledge's regarding post-operative care of cerebral aneurysm patients. The obtained results showed the impact of sustainability of information was well maintained even up to one month after the intervention. The mean knowledge score of nurses before the intervention was 10.18 ± 2.02, which improved to 17.79 ± 5.84 immediately post-intervention and at month post-test retained 15.63 ± 2.07. Abbasside et al showed the continued education programs increased nurse's knowledge about documentation.9 Another study by Karma et al reported that holding educational workshops had a high positive impact on nurse's knowledge about communication skills.10 The results of another study conducted to assess the effect of an intervention on nurse's knowledge and practices on drug dose calculation found, educational programs based on nurses need assessment helpful to improve nurse's knowledge and practices.

In the present study, there was no effect on work experience on knowledge. There was a statically significant relationship between the educational status of nurses and level of awareness as graduate nurses had a better score than diploma nurses. There was no statistically significant relationship between knowledge score and area of posting or working units. Another study on 'efficacy of purposefully educational workshop on nursing care' showed no significant association between gender and years of nursing personnel's work experience with knowledge improvement. [9] Studies shows the relationship between knowledge and performance, for instance, one with limited knowledge might be unable to perform or behave professionally in his or her job.

Several studies showed that nurse's knowledge is weak in the context of nursing care as well as a lack of fulfilment of determinant and important needs concerning the administration of professional duties [10-12].

Literature review of various studies reveals that the effect of educational programs on nurse's knowledge improves in quality of practices [13-16].

Potter and Perry said that comprehensive educational programs which improve personal learning needs, reduce the caring cost, improving quality of care, and help the individuals obtains their independence [17].

A big challenges in nursing education is providing an effective training method suitable for nurses. There are varieties of higher training methods, including seminars, conferences, simulation, and workshop methods. The workshop method consists of educational sessions held to teach specific updated knowledge or skill for a limited number of participants. In the workshop, every educator can share and discuss his or her experiences about the topics and exchange his or her ideas and points of view with other participants [18].

The present study showed conspicuous changes in knowledge scores in post-test measurements. Knowledge levels increased from average to good levels, which indicate the effectiveness of the training method. Because of the continuous expansion of nursing and medical sciences, research on methods that promote knowledge and performance in nursing seems necessary. In the workshop training method, individuals can learn better through discussing the issues, exchanging their experiences, and actively participating in the educational process. They can memorize the subjects more precisely and remember them easily [19,20].

Need of nursing workshop can understand as education of nurses does not end in nursing colleges, but should continue during service time. To improve nursing education, it is vital to include some theoretical courses to train and retrain nurses during education and after graduation. Thus, they can provide better, faster, and more comprehensive service to the patients. According to the findings of this study to improve nurses' knowledge and performance

CONCLUSION

In-service training of nurses plays an indispensable role in improving the quality of inpatient care. Need to enhance the effectiveness of in-service training of nurses is an inevitable requirement. Workshop method gives variety of options and is an optimal model for in- service training of nurses.

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