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COMPETENCY OF NURSES IN ADULT RESPIRATORY ASSESSMENT. WHERE DO WE STAND?

Nursing

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ABSTRACT

INTRODUCTION: Nursing has evolved from being subservient to Physicians into an independent profession with scientific knowledge, skill and Evidence Based Nursing Practice. Nurses with their astute observation and clinical acumen can positively influence the course of treatment and patient outcome. Performing a physical assessment is one of the basic skills a nurse must possess and with more number of patients being admitted in hospitals for respiratory diseases the need for skill in respiratory assessment further increases. The purpose of this study was to assess the effectiveness of a structured teaching programme on competency in respiratory assessment among nurses in a selected tertiary care center.

MATERIAL & METHOD: The study was carried out among 60 nurses of a tertiary care center selected by simple random sampling. The competency of nurses was assessed using structured questionnaire with 20 items and an observation checklist.

RESULTS: The mean pre test knowledge score was 8.77 whereas the post test mean knowledge score was 16.38. Comparison of the mean scores by Wilcoxon's signed rank test yielded a 'Z' value of 6.64 which was highly significant at a p value <0.0001. The mean pre test skill score was 7.57 whereas the post test mean skill score was 21.07. On comparing the calculated value by Wilcoxon's signed rank test, 'Z' value obtained was 6.75 which was highly significant at a p value of <0.0001.

CONCLUSION: The structured teaching programme was found to be effective in increasing the knowledge and skill of nurses in respiratory assessment. Though the correlation coefficient 'r' revealed that there was no statistically significant correlation between knowledge and skill, the nurses had a significant improvement in the knowledge and skill after the structured teaching programme. Therefore, structured teaching programme can be used effectively in updating the knowledge and skill of nurses regarding the latest trends in nursing practice.

KEYWORDS

Structured teaching programme, respiratory assessment, knowledge, skill

INTRODUCTION

Respiratory infection is the largest, single contributor to the overall burden of diseases in the world.The WHO (2017) statistics reveal that about 235 million people suffer from asthma, 200 million people have COPD, 65 million endure moderate to severe COPD, 8.7 million develop TB annually & more than 50 million struggle with occupational lung disease.[1]Respiratory assessment is an important component of health assessment and is a valuable tool in patient management. As the nature and scope of nursing is expanding with newer changes in clinical practice, the nurses need to realize the importance of developing their skills, specifically in physical assessment. While working in the acute care areas, the investigator observed that although nurses care for critically ill patients on ventilator, perform tracheal suctioning, administer prescribed bronchodilators, provide steam inhalation and nebulization to patients with diseases of lower respiratory tract, they seldom perform respiratory assessment to assess the effectiveness of these interventions. Performing a pre- post intervention respiratory assessment is important as it helps to measure the outcome of the nursing interventions. Adequate knowledge, skill and motivation will help nurses to bring knowledge into practice, providing holistic nursing care, leading to early detection and prompt action thereby improving the standard of Nursing practice and help in improving the quality of patient outcome.

OBJECTIVES

1. Assess the pre intervention knowledge score of nurses regarding respiratory assessment.
2. Assess the pre intervention skill score of nurses regarding respiratory assessment.
3. Administer the structured teaching programme on respiratory assessment.
4. Assess the post intervention knowledge score of nurses regarding respiratory assessment.
5. Assess the post intervention skill score of nurses regarding respiratory assessment
6. Assess the efficacy of structured teaching programme by comparing pre and post test competency (knowledge & skill) score.
7. Assess the association between pre and post competency (knowledge & skill) scores with selected demographic variables.

Assumptions

1. Nurses will have some knowledge regarding adult respiratory assessment.
2. Nurses knowledge regarding adult respiratory assessment can be measured by a structured knowledge questionnaire.
3. Nurses skills regarding adult respiratory assessment can be measured by an observation checklist.
4. A structured teaching programme is an accepted strategy that can be used for imparting knowledge and skill on respiratory assessment.

HYPOTHESIS

H_{oa}: There will be no difference between the mean pre and post intervention knowledge scores of nurses.

H_1: There will be a difference between the mean pre and post intervention knowledge scores of nurses.

H_{ob}: There will be no difference between the mean pre and post intervention skills scores of nurses.

H_2: There will be a difference between the mean pre and post intervention skills scores of nurses.

METHODOLOGY

Quantitative quasi-experimental one group pre-test post-test design approach was adopted to assess the efficacy of Structured Teaching Programme on competency (knowledge and skill) in respiratory assessment among nurses in a tertiary care center. The nurses who fulfilled the inclusion criteria of being female, age 23-50, completed GNM/ BSc(N)/MSc(N), registered with State Nursing Council and working in Medical, Surgical wards and Critical care areas were included in the study. The exclusion criteria included nurses working in specialized fields of Psychiatry, Pediatric and Maternity nursing.

Tools used included Structured questionnaire to collect the socio - demographic data and nurses' knowledge related to adult respiratory assessment, Observation checklist to assess nurses' skill in performing the adult respiratory assessment.

The pilot study was carried out on ten nurses after obtaining ethical clearance and permission from the concerned authority. Actual study was conducted on 60 nurses from a tertiary center.

RESULTS

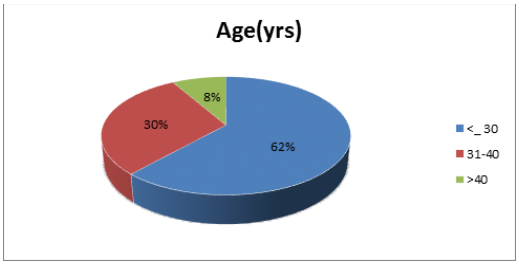

Fig 1: Distribution of nurses as per age

The data in the figure 1 depicts that majority of the nurses 37 (61.7%) belonged to the age group of 30 years and below, 18 (30%) were 31-40 years of age and 5 (8.3%) were 40 years and above.

Out of the 60 nurses, maximum 27 (45%) had completed GNM, followed by 24 (40%) Basic BSc Nursing, 7 (11.7%) PBBSc Nursing and 2 (3.3%) MSc Nursing. It was seen that majority 23(38.3%) of the nurses were working in medical wards, the second clinical area where the nurses had been working was surgical ward with 21(35%) nurses (in surgical wards) and 16 (26.7%) in critical care areas. In regards to the years of clinical experience, maximum 33 (55%) of nurses had 1-5 years followed by 11 (18.3%) nurses with 6-10 year of experience, 7 (11.7%) nurses had 11-15 years of clinical experience and 16-20 year and 2 (3.3%) had 21-25 years of clinical experience.

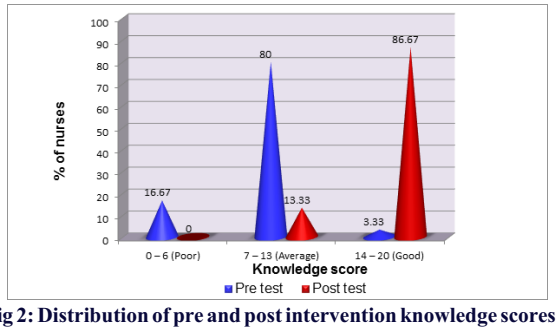

Fig 2: Distribution of pre and post intervention knowledge scores

Figure 2 depicts that in the pre test, 10(16.67%) nurses had poor knowledge, 48(80%) had average knowledge and 2(3.33%) had good knowledge. The post test knowledge scores showed a significant increase with 7 (13.33%) nurses scoring average and 53 (86.67%) scoring good.

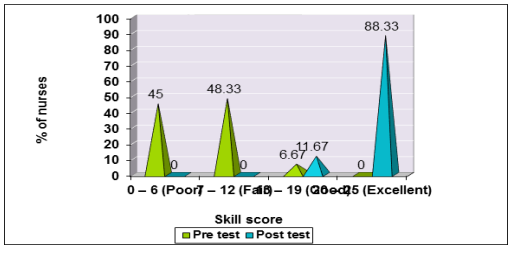

Fig 3: Distribution of pre and post intervention skill scores

In pre test 27 (45%) nurses scored poor, 29 (48.33%) scored fair and 4 (6.67%) scored good, .A significant improvement is appreciated in the post test skill scores with 53 (88.33%) nurses scoring excellent and 7 (11.67%) nurses scoring good.

Table 1: Comparison of mean pre test and post test knowledge score regarding respiratory assessment

n=60

Parameter	Pre test		Post test		Wilcoxon Z Value	P Value
	Mean	SD	Mean	SD		
Knowledge score	8.77	2.452	16.68	2.518	6.64	<0.0001

Table1 reveals that there is an increase in knowledge as evidenced by the difference in mean scores of pre test and post test. The Z value (6.64) calculated by Wilcoxon test which signifies a highly significant difference between mean pre test and post test knowledge scores at a level of significance of 0.05 (p<0.0001).

Table 2: Comparison of mean pre and post test skill score regarding respiratory assessment among nurses

n=60

Parameter	Pre test		Post test		Wilcoxon Z Value	P value
	Mean	SD	Mean	SD		
Skill score	7.57	3.301	21.07	1.425	6.75	<0.0001

The table 2 depicts that there is an increase in skill as evidenced by the difference in mean skill scores of pre test and post test. The 'Z' value calculated by Wilcoxon test was 6.75 which signifies a highly significant difference between mean pre test and post test skill scores at a level of significance of 0.05 (p<0.0001).

Table 3: Association of pre and post intervention knowledge score and age of nurses

n=60

Age (Yrs)	n	Pre-test knowledge score		Post-test knowledge score	
		Mean	SD	Mean	SD
≤30	37	8.14	2.529	16.84	2.230
31 – 40	18	9.61	1.944	16.22	2.045
>40	5	10.40	2.191	13.60	4.393
F Value		3.72		4.08	
P Value		0.03		0.02	

Table 3 describes that in the pretest, the nurses with age of 30 yrs and above had comparable knowledge with average scores. In the post test all nurses irrespective of age had a significant increase in knowledge and had average and good scores. The computed F value was 3.72 and 4.08 with a p value of 0.03 and 0.02 respectively. Hence, there is a statistically significant association between the pre and post intervention knowledge scores regarding respiratory assessment among all age groups of the nurses under study.

DISCUSSION

The findings of this study was similar to the study conducted by Kaur M et al (2017) among 30 nurses working in pediatric units of selected hospitals in Punjab, to assess the effectiveness of a structured teaching programme on the knowledge of nurses regarding management of neonatal asphyxia.[2] Similar findings were reported by Morcillo A J R et al (2015) in their study among 109 nursing professionals in Spain.[3] The findings of this study were similar to the results of a quasi experimental study conducted by Deshmukh to assess the impact of structured education on knowledge and practice regarding venous access device and care among 60 staff nurses. The mean knowledge and practice scores showed a statistically significant improvement after the structured education.[4] Present study revealed that the maximum mean pre test skill score was 8.50 in the age group of 31-40 years. Nurses below 30 years and above 40 years of age scored the least in the pre test skill scores. This fact can be attributed to the fact junior nurses have the maximum load of patient care activities and ward routine and hence do not get adequate time to practice what they have learnt. The nurses above 40 years are generally not related to direct patient care as they perform roles as nurse in-charges and hence do not practice respiratory assessment. In the present study, the mean post test skill scores showed a remarkable increase in nurses above 40 years securing 21.80. The nurses below 30 years had an improvement of mean post test skill score of 21.03. In the post test skill scores however nurses irrespective of age showed marked improvement. This can be explained by the fact that knowledge regarding the correct sequence and technique of performing respiratory assessment enabled the nurses to score better in regards to skill in respiratory assessment.

IMPLICATIONS

Nurses need to be encouraged to practice skills of physical assessment and incorporate it into their routine clinical practice. A quick respiratory assessment will enable nurses to evaluate the effectiveness of nursing procedures carried out like nebulization, suctioning, help in preventing complication and improve the standard of nursing care delivered.

Senior Nurses can take lead in incorporating discussion of respiratory assessment findings in relevant patient conditions during the daily

handing and taking over of patients. Endorsing of respiratory assessment findings in nursing documents of patients with respiratory problems can be encouraged by ward in-charges, which would motivate all nurses in the ward to perform the assessment and observe for changes in patient's condition. Non participant observation by administrative staff will ensure practice of respiratory assessment skills.

The Nursing Administrators must conduct in-service education, continuing nursing programmes to help nurses review their existing knowledge and skill and to update themselves with the latest information and practices in the field of patient care. Nurse administrators can collaborate with the educational institution and have nurse educators specific for hospital education programs. Administrators in the field of Nursing can take initiative to develop nursing standards by encouraging nurses to conduct in house research studies, hands on skill workshops by specialized nurses.

The present study can add to the existing body of knowledge of the student nurses, emphasizing the importance of respiratory assessment in nursing practice. The nurse educator can conduct in service education programme, skill workshops, continuing nursing education for nurses/ nursing staff in the clinical areas in order to update their knowledge. A time series approach can be used to further assess the effectiveness of the structured teaching programme on the skill of the nurses.

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