"A Study To Assess The Effectiveness Of Skill Competency Programme Regarding On Hfnc&Non-Invasive Ventilation In Terms Of Knowledge & Practice Among Staff Nurses In Selected Hospital, At Meerut, Uttar Pradesh"

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Abstract:

Statement of the problem:*"A study to assess the effectiveness of skill competency program regarding on HFNC& Non-Invasive ventilation in terms of knowledge & practice among staff nurses in selected hospital, at Meerut U.P," **Objectives:***1.To assess the pre test knowledge and practices score of nurses about HFNC& Non-Invasive ventilation in both experimental and control group.*
2. To evaluate the effectiveness of a skill competency program on HFNC& Non-Invasive ventilation in terms of knowledge and practice in experimental group. 3. To compare the post test knowledge and practices score regarding HFNC& Non-Invasive ventilation in experimental group and control group. 4. To find out the correlation of post test knowledge and practice scores regarding on HFNC& Non-Invasive ventilation in between experimental group and control group.

Methodology*: An evaluative research approach was used in the study to evaluate the effectiveness of skill competency program regarding HFNC&NIV among staff nurses working in selected hospitals, Meerut. The research design selected for the study was Quasi-experimental non-equivalent control group post-test design.50 Staff nurses (25 in experimental and 25 in control group) were selected in hospital setting by non-probability purposive sampling technique. Structured knowledge questionnaire and practice checklist were used to assess the knowledge and practice regarding HFNC&NIV through skill competency program. Data was collected and analyzed using descriptive and inferential statistics. **Results:** In experimental group majority 48% staff nurse were having adequate knowledge, 52% of them were having moderate knowledge, and none of them were having inadequate knowledge. In experimental group majority 64% staff nurse were having adequate practice, 36% of them were having moderate practice, and none of them were having need practice. The mean pre test knowledge score of experimental group was 13.6 and the standard deviation was 4 against the maximum score (25) .The range of obtained score was between (15-25) indicating there was the knowledge deficit exists regarding HFNC & NIV among staff nurses.The mean post test knowledge score of the experimental group was 17.2 and the standard deviation was 4.5 against the maximum score (25).The range of obtained score was between (15-25) indicating that there was an increase of knowledge regarding HFNC & NIV among staff nurses. **Conclusion:** The study concluded that staff nurses were having deficit knowledge and practice regarding on HFNC&NIV among staff nurses and skill competency program was found to be an effective method to improve the knowledge and practice of staff nurses.*

Key Words*: Assess, HFNC& Non-Invasive ventilation*

I.   Introduction:

The high rate of oxygen flow not only provides oxygen supplementation to oxygen deprived patients but also splints open the alveoli in the lungs. HFNC is different from BIPAP or non-invasive ventilator because it provides high flow oxygen along with pressure which relieves the air hunger of the patient.Non invasive ventilation (NIV) refers to the provision of ventilator support through the patient's upper airway using a mask or similar device. HFNC, like CPAP, is a high flow system and is able to generate a positive end expiratory

pressure, but unlike CPAP it does not have a value. HFNC is suggested to reduce the upper airway dead space and resistance.During this pandemic Covid-19 situation, it became more vitals to all the patients. So it is must needed for all the nurses to know thoroughly about HFNC and NIV, in order to take care of the patient with such respiratory problems. So the researcher has chosen this study to improve the knowledge and practice of HFNC and NIV.

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Objectives: 1.To assess the pre test knowledge and practices score of nurses about HFNC& Non-Invasive ventilation in both experimental and control group.
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Methodology:
Research Approach: Quantitative research approach, *Research Design*-Quasi Experimental Non Equivalent Control Group pre-test Post-test research design. **The target population** of this study is staff nurses working in all ICUs and Emergency unit of ChhatrapatiShivajiSubharti hospital and Metro Hospital, Meerut UP.
*Techniques:*Non – probability purposive sampling technique. **Sample size**: 50. **The tool** consists of three sections. Section A. Demographic variables of the samples, Section B. Self structured knowledge questionnaire. Section C. self structured Practice checklists .The data analysis was done using descriptive and inferential statistics.

Analysis and Interpretation of data:
Table 1 Frequency and percentage distribution of demographic characteristics of the staff nurses in experimental and control group.

Sr no.	Demographic variables	Experimental group		Control group	
		Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
1.	**Gender**				
	Male	10	40%	9	36%
	female	15	60%	16	64%
2.	**Age in year**				
	20-30 years	17	68%	15	60%
	30-40 years	8	32%	10	40%
3.	**Education Qualification**				
	GNM	12	48%	14	56%
	B.SC	9	36%	8	32%
	P. B.SC	4	16%	3	12%
4.	**Work Area**				
	ICU	15	60%	12	48%
	EMERGENCY	8	32%	11	44%
	TRIAGE	2	8%	2	8%
5.	**Working Experience**				
	0-1years	6	24%	8	32%
	1-3years	8	32%	8	32%

	3-5years	6	24%	5	20%
	Above 5 years	5	20%	4	16%
6.	**If have attend any workshop ON HFNC/NIV**				
	Yes	2	8%	1	4%
	No	23	92%	24	96%

Table-2: Frequency and percentage distribution of knowledge questionnaire of the staff nurses in experimental and control group.

Level of assessment of knowledge	Experimental group		Control group	
	Pre test (%)	Post test(%)	Pre test(%)	Post test(%)
Adequate knowledge 18-25	--	12 (48%)	--	--
Moderate knowledge 9-17	17 (68%)	13 (52%)	14 (56%)	14(56%)
Need /Inadequate knowledge 0-8	8 (32%)	--	11 (44%)	11(44%)

Table-3:Frequency and percentage distribution of practice checklist of the staff nurses in experimental and control group.

Level of assessment of practice	Experimental group		Control group	
	Pre test(%)	Post test(%)	Pre test(%)	Post test(%)
Adequate practice 8-11	--	16 (64%)	--	--
Moderate practice 4-7	17 (68%)	09 (36%)	21 (84%)	22 (88%)
Need practice 0-3	8 (32%)	--	4 (16%)	3 (12%)

Conclusion: In this study, 50 samples were collected that *in experimental group*, regarding pre-test **knowledge score** of the staff nurse none of them were having adequate knowledge, majority i.e 17(68%) of them were having moderate knowledge, 8(32%) of staff nurses were having inadequate knowledge. In contrast, post test score had shown that majority 12(48%) staff nurse have adequate knowledge, 13 (52%) of them have moderate knowledge, none of them have inadequate knowledge.*In control group*, regarding pre-test knowledge score none of the staff nurses were having adequate knowledge, majority i.e 14 (56%) of them were having moderate knowledge, 11 (44%) of staff nurses were having inadequate knowledge. In contrast post test score had shown that majority none of staff nurse have adequate knowledge, 14 (56%) of them have moderate knowledge, 11 (44%) of them have inadequate knowledge.*In experimental group*, pre-test **practice score** of the staff nurse had none of the staff nurse have adequate practice and 17 staff nurse have moderate practice where as 8 staff nurse needs practice. In contrast, post test score had shown that majority 16 staff nurses were having adequate practice and 09 staff nurse have moderate practice where as none of the staff nurse needs practice. *In control group*, pre-test practice score of the staff nurse had none of them staff nurse have adequate practice and 21 staff nurse have moderate practice where as 4 staff nurse needs practice. In contrast post test score had shown that majority none of the staff nurses were having adequate practice and 24 staff nurse have moderate practice where as 01 staff nurse needs practice.The skill competency programme was found to be effective in increasing the knowledge of staff nurses in experimental group regarding HFNC & Non Invasive Ventilation among staff nurses.

Implications of the study the findings of the study can be used in the following areas: Finding of the study have certain implications for nursing Practice, nursing services, nursing education, nursing research.*Nursing education* should be made mandatory to all student nurses to update their knowledge and practice in airway management.The nursing personnel working in the hospital provide holistic care to the patients. In ICU's the nurses knows more about the patient condition n as compare to other health personnel. So nurses should be aware of the management of airway obstruction like which saline solution he/she can use to shrink the mucus and how to do the suction in a proper manner with evidence-based .*Nursing practice* the patients with respiratory disorders have a problem in airway obstruction due to more secretion. Hypertonic saline helps to shrink the mucus and suctioning helps in removing the mucus into the lung.Nurse administer must try to solve the problem of airway obstruction by educating the nurses and nursing students regarding nebulization and suctioning procedure.*Nursing administration*: Nurse may plan and organize continuing education programs for all categories of nursing personnel and nursing students for updating knowledge, attitude and practice on current issues and trends in airway management.*Nursing research* is an essential aspect of nursing norms and a body of knowledge. This study revealed that there is needs to conduct further research regarding hypotonic saline nebulize suctioning.Nursing research should direct towards further explanation and up knowledge of nurses about hypotonic saline nebulize suctioning. The findings of the study can be used to further justify the need for education of the ventilator patients to improve their breathing patterns.

Limitation: The study was confined to a small number of staff nurses 50(each 25 in experimental and control group) this limits the generalization of the findings.The study sample was selected by using a non randomized purposive sampling technique which limits the generalized of findings.

Recommendations On the basis of findings, the following are recommended: 1.This study can be replicated in large samples so findings can be generalized for a large population. 2. A comparative study can be done to see the difference in the effect of the teaching programme. 3. A follow-up study can be conducted to assess the knowledge and practice of HFNC & NIV among staff nurses.
4. Similar kinds of studies can be conducted by using other teaching strategies.

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