EFFECTIVENESS OF INFORMATIONAL BOOKLET ON KNOWLEDGE REGARDING THE USE OF HOOD METHOD AND OXYGEN HAZARDS AMONG STAFF NURSES WORKING IN NICU AT SELECTED HOSPITALS, KANPUR UP

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ABSTRACT

Oxygen hood are cylinder or boxes that protect an infant or young childs head. Exhaled gas exits predominately through the neck hole where as oxygen enters through a gas input port .Hood provide up to 80% to oxygen,adequate humidification ,and temperature regulation.This study aimed to evaluate the effectiveness of an informational booklet on knowledge regarding the hood method and oxygen hazards among NICU staff nurses in a selected hospital at Kanpur, UP. A quasi-experimental design was used with 60 nurses selected through purposive sampling. Data were collected using a self-structured questionnaire and analyzed using descriptive statistics, paired t test, and chi-square test. The post-test mean score (20.7) was significantly higher than the pre-test mean score (14.45), with a t value of 9.89 ($p < 0.05$), indicating that the informational booklet effectively improved knowledge. Chi-square analysis showed no association with type of hospital but significant associations with age, gender, religion, educational qualification, source of information, NICU experience, and previous knowledge.

The study concluded that the informational booklet was effective in enhancing the knowledge of staff nurses regarding the use of hood method and oxygen hazards.

Keywords: Staff Nurses , NICU, Oxygen Hazard, Oxygen Hood.

INTRODUCTION:

Oxygen is the elixir of life, and proper oxygen delivery is the foundation of infant critical care. Oxygen is one of the most commonly used drugs in the Neonatal Intensive Care Unit. Oxygen therapy in neonatal care has four goals. The delivery of oxygen to tissues prevents anaerobic metabolism and lactic acidosis, allowing for growth and development while minimizing hypoxic pulmonary vasoconstriction and oxygen toxicity.

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When treating acute hypoxemic respiratory failure, helmet non-invasive support may be superior to the non-invasive oxygenation techniques. We provide an overview of the justification, mode of action and technical details of helmet support for hypoxemic patients in the narrative review which is based on a through literature research.

Oxygen hood (oxygen head box) when administering a higher concentration of oxygen, a square box constructed of Perspex or translucent plastic that may envelop the infant`s head is helpful. Unbreakable material that is moulded into a single piece without any joints should be used to make the box. It can be utilised whether the infant is being breastfeed in an incubator or an open crib. To effectively construct a seal and stop free entry of ambient air, it should have a flexible occluding collar or adjustable neck port. The oxygen concentrations which are likely to be achieved with different flow rates.

NEED FOR THE STUDY

Oxygen hood is a transparent plastic dome used to provide oxygen to infant and neonates. It delivers a controlled contrection of warm, humidified oxygen around the babies head.

A quasi- experimental study was conducted achieving normal or almost normal oxygen levels in inpatients in the intensive care unit (ICU) or emergency room is a sign of appropriate oxygen therapy. The underlying ailment and whether the patient's condition is acute or chronic determine how much oxygen should be given to them. Numerous factors, including the patient's age, the doctor's treatment objectives, and the patient's tolerance, influence the device selection and oxygen dosage. Most patients with acute illnesses should get oxygen at a saturation level of 94–98%, whereas those at risk of respiratory failure should receive oxygen at a saturation level of 88–92%.

A cross-sectional study was conducted nurses in neonatal critical care should act with greater professionalism. Additionally, they ought to take a more comprehensive approach to oxygen administration. Research found that 56.1% of nurses administered oxygen before conducting endotracheal aspiration. Most NICU patients require preoxygenation, though it's unclear how much is needed. It is recommended that the quantity of oxygen needed to avoid hypoxaemia be determined on an individual basis. The majority of the nurses in our survey acknowledged that ROP was the most common issue in their respective units and that they were aware of it as a side effect of newborn oxygen therapy. According to the literature, oxygen therapy carries a high risk for ROP in addition to prematurity and low birth weight. These results all point to a lack of

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understanding regarding oxygen concentration and treatment monitoring neonatal units .Additionally, they demonstrate the necessity of documented, evidence-based guidelines for the administration of oxygen and accompanying care.

A quasi- experimental study was conducted oxygen therapy is a popular treatment for infants with cardiopulmonary illness. The goal of this study was to assess nurses' adherence to oxygen therapy criteria before, during, and after utilising an oxygen hood. Methods: In this cross-sectional investigation, 250 nursing care cases were analysed before, during, and after the delivery of oxygen hood therapy to preterm newborns. The observations were carried out in accordance with the newborn intensive care unit (NICU) guidelines at Ahvaz University of Medical Sciences facilities. The data were analysed using SPSS version 18's Chi-square and Spearman tests. Results: 90% of nurses did not comply to oxygen therapy criteria prior to using the newborn oxygen hood.

PROBLEM STATEMENT: "Effectiveness of informational booklet on knowledge regarding the use of Hood Method and Oxygen Hazards Among staff nurses on working in NICU at Selected Hospitals, Kanpur, UP.

OBJECTIVES OF THE STUDY

- To assess the pre-test level of knowledge regarding the use of hood method and oxygen hazards among staff nurse.
- To evaluate the Effectiveness of informational booklet on knowledge regarding the use of hood method and oxygen hazards among staff nurse.
- To find out the significant association between pre-test knowledge score regarding the use of hood method and oxygen hazards with their selected Socio Demographic variables.

HYPOTHESIS

H_1: There is a significant difference between the pre-test and post-test level of knowledge score regarding use of hood method and oxygen hazards among staff nurses.

H_2: There is a significant association between the pre -test level of knowledge score regarding use of hood methods and oxygen hazards among staff nurses.

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METHODOLOGY- MATERIALS AND METHODS

RESEARCH APPROACH:

The Quantitative evaluative research approach was used for the present study.

RESEARCH DESIGN:

The research design, Quasi- experimental one group pre -test post-test design was used in the study.

SETTING OF THE STUDY

This study was conducted on staff nurses of SPM Hospital, Lakhanpur Hospital, Shyam Children Maternity Centre, Abhishek Hospital, Preeti Hospital of Kanpur, UP.

VARIABLES

The type of variable identified in this study:

Independent Variable:

In this study the independent was variable informational booklet on knowledge regarding use of hood method and oxygen hazards among staff nurses working in NICU.

Dependent Variable:

In this study the dependent variable was knowledge of NICU staff nurses regarding the use of hood methods and oxygen hazards.

Demographic Variable: In this study, demographic variables was included such as age, gender, working experience, educational status, and pervious knowledge, source of information regarding use of hood methods and oxygen hazards among staff nurses

POPULATION.

Population of the present study was staff nurses working in NICU.

Target Population:

-The target population for the present study was staff nurses working in the NICU at all selected hospitals in Kanpur Uttar Pradesh.

Accessible Population: The accessible population of the present were include all staff nurses who are currently employed and actively working in the NICU at SPM Hospital, Lakhanpur Hospital, Shyam Children Maternity Centre, Abhishek Hospital, Preeti Hospital of Kanpur, UP.

SAMPLE:

In this study, the sample consist of staff nurses working in the NICU at selected hospital who meet the sampling criteria.

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SAMPLE SIZE: The sample size in the present study was 60 NICU staff nurses SPM Hospital, Lakhanpur Hospital, Shyam Children Maternity Center, Preeti Hospital, Abhishek Hospital in Kanpur who fulfil the sampling criteria for the present study.

SAMPLE TECHNIQUES:

In this present study non- probability convenient sampling technique used to the select sample.

SOURCE OF DATA: The data was collected in SPM Hospital, Lakhanpur Hospital, Shyam Children Maternity Center, Preeti Hospital, Abhishek Hospital in Kanpur.

Inclusion Criteria:

The study includes:

Staff Nurses:

1. who all are working in the NICU.
2. Who were involved in the use of oxygen therapy (including Hood Method)
3. Who were willing to participate.

Exclusion Criteria:

The study includes:

Staff nurses;

- Who all are working other than NICU.

RESEARCH TOOL:

The research tool consisted of two parts:

PART 1- This part was designed to collect demographic data which include variables like age group, gender, religion, educational qualification, year of experience , types of hospital previous knowledge, sources of information.

PART 2- This part was design assess effectiveness of informational booklet on knowledge regarding the use of hood method and oxygen hazards. there were 25 questions. that were focused on level of knowledge.

RESULTS:

Section A: Frequency and percentage wise distribution of demographic variables of NICU Staff nurses in selected Hospitals.

1. The majority of NICU Staff nurses 51.6% (21-25yrs) were between 26-30 years, 35% were between 31-35 years, 6.7% were greater >35 years ,6.7%.
2. The majority of NICU staff nurses 73.3% ,(44 female) and 26.7 % ,(16 male).

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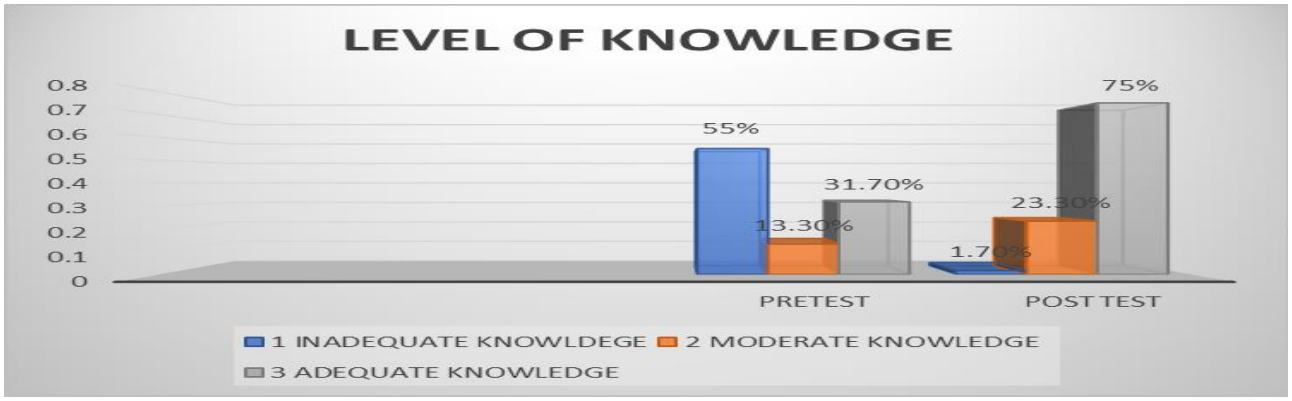
3. The majority of staff nurses Hindu 86.7%(52), were Muslim13.3% (8), Christian 00% , other 00%.
4. Educational qualification shows that were ANM 18.3% (11), were GNM 65% (39), were BSC nursing 15% (9), post BSC nursing 1.7% (1), MSC nursing 0% (00).
5. NICU staff nurses according to year of experience in NICU the graph that majority were <1 year 43.3% (26), 1-5 year 46.7% (28), 6-10 year 6.7%(4) ,>10 year 3.3% (2).
6. NICU staff nurses according to their type of hospital the graph that majority were Government 00% , private 100% , semi- government 00% , trust-based 00%.
7. NICU staff nurses according the graph that majority were No 8.3% (5) were yes 91.7% (55).
8. NICU staff nurses according to sources of information the graph that were mass media 13.3(8), were in service training 56.7% (34), were college 21.7% (13).

Section B: Distribution of NICU staff nurses in selected Hospitals according to the pre-test ad post-test level of knowledge regarding the use of Hood method and oxygen Hazards.

n=60

S.NO.	Level of Knowledge	Pre-Test		Post Test	
		F	%	F	%
1.	Inadequate Knowledge (00-12)	33	55%	1	1.7%
2.	Moderate Knowledge (13-20)	19	31.7%	14	23.3%
3.	Adequate Knowledge (21-25)	8	13.3%	45	75%



Bar diagram showing percentage wise distribution of the NICU Staff nurses according to Pre-test and Post-test level of knowledge on the use of hood method of oxygen hazards.

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diagram shows that comparison of pre-test and posttest level of knowledge. In pre-test among the staff nurses 33 sample (63.33%) had inadequate level of knowledge, 19 sample (31.7%) had moderate level of knowledge,8sample (13.3%) had adequate level of knowledge, and in post -test among the subject 1 sample (1.7%) had inadequate level of knowledge,14 0sample (23.3%).

Section C: Evaluate the effectiveness of information booklet on knowledge regarding the use of Hood method and oxygen Hazards among NICU staff nurses in selected hospital ***frequency, mean, mean difference, paired "t" test of self-structured questionnaire*** ***n=60***

S.no	Knowledge Level	Mean	Mean Difference	Standard Deviation	Paired "t" Value	'P' Value
1.	Pre-test	14.45	6.3	6.7	9.89	2.00 at the 0.05 Level of Significance (S*)
2.	Post-test	20.7		17.95		

S*-Significance

The pre-test mean score were (14.45) and post-test mean were (20.7). The paired "t" value was 9.89 which shows significant at the 0.05level of significant.he mean score before and after providing informational booklet has shown significant difference.

The mean value of pre-test was 14.45. which has been increased to 20.7. in the post-test the paired t-test vale was 9.89. and it was significant at P<0.05 level. From the above inference, it is made clear that the informational booklet had a knowledge regarding among NICU staff nurses. Hence H_1 was accepted and H_{01} was rejected.

Section D- Association of Pre-test knowledge level of NICU staff nurses Regarding the use of oxygen Hood and oxygen Hazard with their selected demographic variable. n= 60

S. No	Socio-demographic variables	Inadequate level of Knowledge	Moderate level of Knowledge	Adequate level of Knowledge	Chi-Square x^2	Df	T	Significant/ non-significant
1	**Age group** A) 21-25 B) 26-30 C) 30-35 D) Above 35	 20 10 3 0	 8 8 00 3	 4 3 1 00	9.7291	6	12.59	S
2	**Gender** 1) Male	12	2	2	3.3155	4	9.49	S

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	2) Female	22	15	7				
3	Religion 1) Hindu 2) Muslim 3) Christian 4) Other	 28 6 00 00	 16 2 00 00	 8 00 00 00	1.8553	6	12.59	S
4	**Educational Qualification** a) ANM b) GNM c) B.Sc. Nursing d) Post BSc Nursing e) M.Sc. Nursing	 7 22 4 1 00	 4 10 4 00 00	 1 6 1 00 00	2.2904	6	12.59	S
5	**Year of Experience** a) Less than 1years b) 1-5 c) 6-10 d) More than 10	 17 14 1 2	 7 9 2 00	 2 5 1 00	4.9224	8	15.51	S
6	**Type of Hospitals** a) Government b) Private c) Semi - government d) Trust-based	 00 33 00 00	 00 19 00 00	 00 8 00 00	00	6	12.59	NS
7 **8**	**Previous knowledge** a) Yes b) No **If yes,** **Source of Information** a) Mass -media b) In service training c) College	 30 3 8 22 6	 17 2 2 4 4	 8 00 00 10 4	1.8648 6.0864	7 4	14.07 9.49	S S

This table shows Association of Pre-test knowledge level of NICU staff nurses Regarding the use of Hood method and oxygen hazards with their selected demographic variable.

shows that there were significant association with, age group ,Gender , Religion Educational qualification, Year of experience, Source of information, Previous Knowledge but there was no significant association with Types of hospital. Hence, Research Hypothesis (H_2) was accepted and Null Hypothesis (H_{02}) was rejected.

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NURSING IMPLICATION:

The finding of the study has several implications which are discussed in these area of nursing services, nursing education, nursing administration, nursing research.

Nursing services

The implication of nursing services is that nurses play an important role in the awareness informational booklet, helping NICU staff nurses in hospital settings to update their knowledge. The findings of the study can be disseminated to motivate nurses to engage in awareness programs.

Nursing education

The nurse education can recommend this topic to the staff nurses for health education activities of NICU setting to increase the knowledge level of NICU staff nurses regarding use of hood methods and oxygen hazard the finding will help the nursing to understand the need be equipped with adequate knowledge.

Nursing administration

The findings of the study help nurse administration take appropriate measures to provide knowledge to NICU staff nurses in hospital settings regarding the use of hood methods and oxygen hazard Continuous quality assessment can be conducted to improve the quality of education provided to NICU staff nurses in hospital settings.

Nursing research

The study's findings help to motivate and initiate research related effectiveness of informational booklet on knowledge regarding use of hood methods and oxygen hazard among staff nurses in working in NICU.

CONCLUSIONS:

The study concluded that the informational booklet was effective in improving the knowledge of NICU staff nurses regarding the use of hood method and oxygen hazards. Post-test scores showed a significant increase in adequate knowledge compared to pre-test. No significant association was found with type of hospital, but age, gender, religion, education, source of information, NICU experience, and previous knowledge showed significant associations. Overall, the booklet proved to be a useful tool for enhancing nurses' knowledge.

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