



NURSE'S KNOWLEDGE, ATTITUDE AND PRACTICE TOWARD THE ADMINISTRATION OF OXYGEN THERAPY TO THE CRITICALLY ILL PATIENTS

Anees Khan^{1*}, Humaira Saddique², Syeda Sidra Tasneem³

Abstract

Background: Oxygen in human life is playing very important role and it is a drug which is used extremely universally and practiced by medical specialties in a large amount. Supplemental Oxygen is deliver for respiratory failure patients and its widely used in critical care areas. **Objective:** To assess the nurse's knowledge, attitude and practice towards administration of oxygen therapy to the critical ill patients. **Methodology:** A descriptive cross-sectional research study design was used. **Results:** The study reported that the nurses have moderate knowledge were 78 (49.7%) and with positive attitude were 80(51.0%), The practice of nurses were poor 92(58.6%). **Conclusion:** The study concluded that the majority of nurses having moderate knowledge, positive attitude and poor practices regarding administration of oxygen therapy to the critical ill patients.

Key words: Administration of oxygen therapy, knowledge, attitude and practice.

^{1*}Student BSN (Generic), Department of Nursing, The Superior University, Lahore, Pakistan

²Assistant Professor, Department of Nursing, The Superior University, Lahore, Pakistan

³Director of Nursing, The Superior University, Lahore, Pakistan

***Corresponding Author:** Anees Khan

Email Address: oneeskhan8250@gmail.com

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INTRODUCTION

Oxygen in human life is playing very important role and it is a drug which is used extremely universally and practiced by medical specialties in a large amount (Elhaj, 2022). Supplemental Oxygen is deliver for respiratory failure patients and its widely used in critical care areas (Demilew, Mekonen, Aemro, Sewnet, & Hailu, 2022). According to world health organization (WHO) oxygen is the fundamental source and it is effective drugs for the critical ill patients who has admitted in a hospital (Bizuneh, Getahun, Melesse, & Chekol, 2022). The Proper administration of oxygen therapy achieve positive health outcomes and misuse of oxygen therapy is badly effect the patient health condition (Zelege & Kefale, 2021). Oxygen therapy is very effective medicine to maintain the critical ill patient condition (Bizuneh et al., 2022). The basic responsibility of the ICU nurses to administer oxygen and provide care to the critical ill patients. Nurses play important in the recovery and to improve the condition of critical ill patients (Bunkenborg & Bundgaard, 2019). The administration of oxygen therapy is very helpful and have positive outcomes for patient on mechanical ventilation in ICU (Helmerhorst et al., 2014). Worldwide the 16% of critical ill patient suffer from death due to lack of nurses knowledge about oxygen therapy (IRADUKUNDA, 2022). The study in Asia mentioned that the 51% of nurses carry a prescribed oxygen protocol. The 82.3% of most nurses have idea about the managing and accessing the oxygen therapy. The study in Pakistan identify that the 57.3% of nurses have follow the WHO guidelines about oxygen therapy (Memon, Aziz, Memon, Aziz, & Hussain, 2022). The normal respiratory rate is disturbing by hypoxemia (deficiency of oxygen in blood mainly in arteries). The knowledge of nurses is play a part to identify Hypoxemia which is recognizing by mental status changes (confusion, coma, disorientation, lethargy, impaired judgment, agitation), shortness of breath, change in heart rate, increase in blood pressure, dysrhythmias, cool extremities, central cyanosis (late sign) and diaphoresis (Dede Tisei, 2018). Attitude of the nurses is mostly dependent on the better practices. The attitude regarding administration of oxygen therapy refers to the nurse's beliefs and feeling towards the use of oxygen therapy as a medical intervention. (Martin & Grocott, 2013). The lung tissue is harm by oxygen so it is necessary to Observing the patients while oxygen administration. The high concentration of oxygen is make the alveoli collapse and create oxygen

toxicity (Nakane, 2020). The practice of nurses to be consider as crucial element while administration of oxygen therapy. It is important to consider various factors and parameters to ensure the safe and effective delivery of oxygen towards the critical ill patients. The practices of the nurses are commonly effect by knowledge. (Nippers & Sutton, 2014). The administration of oxygen is different system that are based on high-flow system, low-flow system, and reservoir system. (Badiger, John, Fearnley, & Ahmad, 2015). The hospital inpatients at any given time will be receiving oxygen 15-17% and the ambulance patients during transit about 34% receive oxygen (Kane, Decalmer, & O'Driscoll, 2013). The used of supplemental oxygen in specific time and appropriate amount can prevent the heart and lung diseases according to world health organization (WHO) guidelines (Diab, Ali, Abed, Elasrag, & Ramadan, 2022). The different studies are revealed that the nurses are faced difficulties regarding the correct dose, duration and flow rate of different devices while administration of oxygen therapy. Oxygen is a very crucial element for the survival of human life. The proper flow rate of oxygen is decrease the mortality and morbidity rate of the patients. The excess delivery of oxygen therapy is very danger on the patient condition outcome like oxygen toxicity. Nurses are not fully aware of the dose, duration and flow rate of different devices of oxygen therapy, this ultimately affects the patient outcome. So the study aim is to assess the nurse's knowledge, attitude and practice regarding administration of oxygen therapy towards critical ill patients.

METHODS

A descriptive cross sectional study design was conducted to assess the nurse's knowledge, attitude and practice towards administration of oxygen therapy to the critical ill patient. The purposive sampling techniques was used. Population was staff nurses of Emergency, CCU, ICUs, Medical and surgical ward of tertiary care hospital Lahore. The setting of the study was Tertiary care hospital Lahore. Duration of this study was 9 months. Study sample was 157 calculated through slovin's formula. An adapted questionnaire of knowledge, attitude and practice was used to gather the information from the study sample. Data was gather from all staff nurses working in Emergency, medical ward, surgical ward, CCU and ICUs departments. Data was collected an adapted questionnaire of knowledge, attitude and practice towards administration of

oxygen therapy to the critical ill patients. After collecting data, the data was compute analyze by software program (SPSS) version (22). The ethical consideration was followed which is organize by the superior university department of nursing. The

participant all the confidentiality was ensure any participant who are not willing to participate can be withdraw from the study at any time. There will be no potential harm and potential benefits for the study.

CHAPTER ANALYSIS

Variable	Category	Frequency%
Age	21-25 years	53 (53%)
	26-30 years	67 (67%)
	31-35 years	36 (36%)
	36-40 years	1 (1%)
Gender	Male	24 (24%)
	Female	133 (133%)
Marital Status	Single	83 (83%)
	Married	74 (74%)
Experience	1-5 years	68 (68%)
	6-10 years	65 (65%)
	10-15 years	23 (23%)
	Above than 15 years	1 (1%)
Qualification	Diploma in Nursing	84 (84%)
	Post RN	66 (66%)
	BSN (Generic)	7 (7%)
Department	ICU	55 (55%)
	CCU	49 (49%)
	Emergency	26 (24%)
	Medical wards	24 (24%)
	Surgical Wards	3 (3%)

Table no 1. Demographic characteristics

This demographic table shows that majority of age group with 25-30 years. Majority population were female. The Majority with single marital status. Majority of nurses with 1-5 years' experience. Majority with Diploma in Nursing. Majority of nurses working were in ICUs.

Table 2: Knowledge questionnaires

Majority of the Participants have poor knowledge regarding "oxygen is like any other medication". Majority of the Participants have good knowledge

regarding "Hazards of oxygen therapy oxygen toxicity". Majority of the Participants have good knowledge regarding "The normal flow rate of nasal cannula 1-6L/m". Majority of the Participants have good knowledge regarding "ABG used in titration in OT". Majority of the Participants have good knowledge regarding "Supplemental oxygen flow should be titrated to maintain adequate oxygen saturation by appropriate arterial blood gas values".

Questions	Respond	Frequency %
Oxygen is like any other medication	True	30 (30%)
	False	127 (127%)
Hazards of oxygen therapy oxygen toxicity	True	128 (128%)
	False	29 (29%)
The normal flow rate of nasal cannula 1-6L/m.	True	125 (125%)
	False	32 (32%)
ABG used in titration in OT	True	106 (106%)
	False	51 (51%)
Supplemental oxygen flow should be titrated to maintain adequate oxygen saturation by appropriate arterial blood gas values	True	156 (156%)
	False	1 (1%)

Table 3: Attitude questionnaires

Majority of the participants were negative attitude regarding “Continuous oxygen administration is more beneficial than intermittent oxygen therapy”. Majority of the participants were positive attitude regarding “Since oxygen is a

drug administration to the patient is not safe and also it is very dangerous”. Majority of the participants were positive attitude regarding “Humidification is the best practice to prevent dryness of mucus membrane of upper respiratory tract causing soreness”.

Questions	Respond	Frequency%
Continuous oxygen administration is more beneficial than intermittent oxygen therapy	Disagree	1 (1%)
	Agree	78 (78%)
	Neutral	29 (29%)
	Strongly agree	49 (49%)
Since oxygen is a drug administration to the patient is not safe and also it is very dangerous	Strongly disagree	78 (78%)
	Disagree	64 (64%)
	Neutral	4 (4%)
	Agree	11 (11%)
Humidification is the best practice to prevent dryness of mucus membrane of upper respiratory tract causing soreness.	Strongly disagree	1 (1%)
	Neutral	17 (17%)
	Agree	86 (86%)
	Strongly agree	53 (53%)

Table 4: Practice questionnaires

Majority of the participants were good practice regarding “Pulse oximeter monitoring is affected by patient motion or fitting”. Majority of the participants were good practice regarding “Humidification device use in flow rate more

than 5 L/M”. Majority of the participants were good practice regarding “If SpO₂ is >92-94% decrease FiO₂ by 1 liter in case nasal cannula and 10% by mask”. Majority of the participants were negative practice regarding “OT devices do not require routine replacement on other patient”.

Questions	Respond	Frequency%
Pulse oximeter monitoring is affected by patient motion or fitting	Done	102 (102%)
	Not done	55 (55%)
Humidification device use in flow rate more than 5 L/M	Done	102 (102%)
	Not done	55 (55%)
If SpO₂ is >92-94% decrease FiO₂ by 1 liter in case nasal cannula and 10% by mask	Done	154 (154%)
	Not done	3 (3%)
OT devices do not require routine replacement on other patient	Done	96 (96%)
	Not done	61 (61%)

DISCUSSION

Majority of Participants respond to false option to the question that the “oxygen is like any other medication” were 127(80.9%). Majority of Participants respond to true option to the question that the Hazards of oxygen therapy oxygen toxicity were 128%(81.5%). Majority of Participants respond to true option to the question that The normal flow rate of nasal cannula 1-6L/m was 125(79.6%). Majority of Participants respond to true option to the question that the ABG used in titration in OT were 106(67.5%). Majority of Participants respond to true option to the question that the Supplemental oxygen flow should be titrated to maintain adequate oxygen saturation by appropriate arterial blood gas values were

156(99.4%). Majority of the nurses were Agree 78(49.7%) to the question “Continuous oxygen administration is more beneficial than intermittent oxygen therapy”. Majority of the nurses were strongly Disagree 78(49.7%) to the question since oxygen is a drug administration to the patient is not safe and also it is very dangerous”. Majority of the nurses were agree were 86(54.8%), to the question “Humidification is the best practice to prevent dryness of mucus membrane of upper respiratory tract causing soreness”. Majority of nurses select the Done option were 102(65.0%), regarding “pulse oximeter monitoring is affected by patient motion or fitting”. Majority of nurses select the Done option were 102(65.0%), regarding “humidification device use in flow rate

more than 5L/M". Majority of nurses select the Done option were 154(98.1%), regarding "if spO₂ is > 92-94% decrease FiO₂ by 1 liter in case nasal cannula and 10% by mask". Majority of nurses select the Done option were 96(61.1%) regarding "OT devices do not require routine replacement on other patient".

CONCLUSION

The current study concluded that the knowledge was moderate and practice regarding administration of oxygen therapy to the critical ill patients was poor and the attitude was positive. This is the need of the time to educate nurses and conduct trainings programs for enhancing the knowledge and improving the practice of nurses regarding oxygen therapy administration to the critical ill patients.

LIMITATION

The current study used cross-sectional study design to identify the knowledge, attitude and practice of administration of oxygen therapy

RECOMENDATION

The current study investigate level of knowledge, attitude and practice regarding administration of oxygen therapy. The future researcher can work on the enhancement of knowledge and practice to conducted experimental study by which they can asses knowledge and practice to give the intervention for enhancement of knowledge and practice towards administration of oxygen therapy among nurses.

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