

# **KIBOGORA POLYTECHNIC**

## **FACULTY OF HEALTH SCIENCES**

### **DEPARTEMENT OF GENERAL NURSING**

**TOPIC: ASSESSMENT OF NURSES'S KNOWLEDGE AND PRACTICES FOR  
CRITICAL PATIENTS UNDER OXYGEN-THERAPY AT MUGONERO ADVENTIST  
HOSPITAL**

**A research paper submitted in partial fulfillment of the requirements for the Bachelor's  
degree with honor in General nursing science**

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## DECLARATION

### **Declaration by the Candidate**

We, IRADUKUNDA Divin & BYIRINGIRO Aimé declare that this is our own original work and not a duplication of any similar academic work. It has therefore not been submitted to any other institution of higher learning.

All materials cited in this paper which are not our own have been duly acknowledged.

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Date..... Date.....

### **Declaration by the Supervisor**

I declare that this work has been submitted for examination with my approval as KP Supervisor

Supervisor's name: Thérèse UWAMARIYA .....

Signed.....

Date.....

## **DEDICATION**

We dedicate this work to God, and our parents who has encouraged us along the way from the starting to the end. And to our colleague ABAYISENGA Antonyne who have been helped in different way

## **ACKNOWLEDGEMENT**

We are deeply thankful to our valued Supervisor, Mrs. Therese, who continuously help us and tirelessly dedicated a lot of her value time and advice, guidance and give us addition of caring this research. Without her we could not complete my work. May God bless you.

Special thanks to our parents and our brother and sisters, emergence teams of MAH who gave us support and encouragement and understanding during the time of development and production of this research.

## **ABSTRACT**

This study aimed to assess nurse's knowledge and practices for critical patients under oxygen-therapy at Mugonero Adventist Hospital in Rwanda.

Specific objectives were: (1) To assess nurses knowledge for critical patients under oxygen-therapy at Mugonero Adventist Hospital in Rwanda; (2)To describe nurses awareness in practices of oxygenotherapy towards critical patients at Mugonero Adventist Hospital in Rwanda.

Related to research approach and design is descriptive study and chosen method quantitative approaches were used to collect data and total target population was 76. The researcher used a purposive sampling with Sample size of 50 participants. The structured questionnaire distributed to participants and data were analyzed by using the SPSS version with frequency and percentage.

Findings, According to the findings after data analysis in Level of knowledge for oxygen therapy for nurse participants on the study the high number of nurses are in moderate where they has 32% and also according to the awareness in practice there is good result of 63.9%.as Conclusion It has been revealed in our study that the level of knowledge of the nurses regarding oxygen therapy has lower and their knowledge is particularly inadequate in terms of oxygen therapy application methods.as Recommendation: it is recommended that Mugonero Adventist Hospital nurses must be given trainings on Oxygen Therapy and be updated. Hospital protocol must be developed. Oxygen supply and deliver devices should always be adequate and be used properly.

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

**COPD:** Chronic obstructive Pulmonary Diseases

**CPAP:** Continuous Positive Airway Pressure

**ED:** Emergence department

**ICU:** Intensive Care Unity

**KBTH:** Korle-Bu Teaching Hospital

**LPM:** liters per minute

**MAH:** Mugonero Adventist Hospital

**Mrs.:** Missus

**O<sub>2</sub> therapy:** Oxygen therapy

**SAO<sub>2</sub>:** Arterial oxygen Saturation

**SDG:** Sustainable Development Goal

**SPSS:** Statistical Package for Social Sciences

**TB:** Tuberculosis

**UK:** United Kingdom

**WHO:** World Health Organization

## **CHAPTER ONE: GENERAL INTRODUCTION**

### **1.0. Introduction**

This chapter presents the background of the study, problem statement, objectives of the study and research questions, significance of the study, limitations of the study, scope of the study and it ends with the organization of the study.

### **1.1. Background of the study**

Worldwide the nurses lack knowledge of using oxygen administration that can lead cause of death among critical ill patient of 16%. Because of oxygen has an effect on the lung tissue. A high concentration of oxygen could make changes in the lung that causes oxygen toxicity. Production of surfactant is affected by high concentration of oxygen which in turn collapses alveoli. Therefore, these alveoli decrease gas exchange. (Carol et al, 2015)

The critical care nurse must monitor the oxygen treatment and reducing supplemental oxygen as soon as possible to avoid such risks. The target saturation must be tagged in drug chart. Oxygen should be administered by a professionally trained nurse (European Journal of Pharmaceutical and Medical Research, 2016)

In Africa showing that 2 in 10 died because of lacking oxygen. Oxygen was discovered by Joseph Priestley in 1774, and has been available as treatment for hypoxemia and used with significant clinical benefit for over a century, predating antibiotics for pneumococcal pneumonia or pulmonary tuberculosis (TB). It is therefore remarkable that oxygen treatment is still not widely available in low- and middle-income settings that bear by far the greatest burden of death due to lung disease. (Mayhob, 2018)

A research that was conducted in Ghana at Korle-Bu Teaching Hospital (KBTH),has shown that in emergency situations, nurses administered oxygen without doctor's prescription. Nurses initiated Oxygen therapy based on knowledge gained during training and experience. However World Health Organization says that only doctor might order the oxygen therapy and prescribe the dosage, but a nurse will be sent to administration. (Mayhob, 2018)

The study conducted in Iran (2017) demonstrates the level of familiarity nurses working in critical care with certain aspects of O<sub>2</sub> therapy such as indications, necessary measurements, and monitoring during therapy and the identification of delivery devices was fair to a moderate level. In the report, 92.4% and 98.2% of nurses believed that oxygen therapy can be associated with risk and should be recorded in the patient's medical file respectively. (WHO, 2016)

Another study conducted in Egypt in 2018 reported 76%, of the studied sample had unsatisfactory level of knowledge in relation to administering oxygen therapy. While, only 6% and 18% of the studied sample have satisfactory and average levels of knowledge regarding administering oxygen therapy respectively Oxygen therapy is a one of treatment used to manage tissue hypoxia. This increases the amount of oxygen and enables continued breathing. (International journal of Africa Nursing Sciences, 2015)

A mixed study conducted in Denmark in 2018 pointed out, knowledge among emergency nurses, and training through formal emergency education is of significant importance to nurses when learning how to perform the balancing act of handling oxygen to emergency patients. Inter professional collaboration as well as continuous training was also reported to enhance nurse's knowledge and practice concerning Oxygen. (WHO, 2016)

A cross-sectional qualitative study conducted in Saudi Arabia show that shortage of training program was the leading possible associated factor for poor knowledge in a report from .The study also reported that, even though cumulative experience may help, it does not always ensure that patients' treatment is of good quality. (Mayhob, 2018)

A Quasi experimental study conducted in Egypt in 2019 reported 86%, 74%, 94%, and 100% of the studied sample stated that; lack of training courses, lack of equipment/supplies, lack of 11 periodic maintenances and unavailability of standardized protocol for oxygen therapy effect on administration of oxygen therapy to their patients respectively . The study also shows that there is a highly significance differences in nurses knowledge mean score between pre and post implementation of training program regarding oxygen therapy. (Carol et al, 2015)

However, crosses sectional survey from Uganda shows nurses have a knowledge gap in selecting the appropriate oxygen therapy delivery device for children. Most nurses (76%) had adequate knowledge on how to use a concentrator, but the majority did not know how to use a pulse oximeter or administer cylinder oxygen (26). In contrary a cross sectional quantitative Rwandese study conducted in 2017 reported that the mean score of level of knowledge, participants was 87.7%.

Furthermore a study conducted in Eritrea, Asmara in 2019 at Orrota national referral hospital revealed overall about 43.3% of the nurses working in the ED and ICU had good knowledge about Oxygen therapy (Carol et al, 2015)

Nurses often play a major role in oxygen therapy use, not only because they are administering it on a regular basis, but they might also be educating the patient and precautions should be taken during administering oxygen therapy, and nursing interventions regarding administering oxygen therapy respectively. (Mayhob, 2018)

In Kenya 13183 children aged 60 days or more admitted to a district hospital in rural coastal Kenya, 5.3% were hypoxemic; the most frequent final diagnoses among hypoxemic children were malaria (35%), pneumonia (32%), malnutrition (10%) and gastroenteritis (7%) (Carol et al, 2015)

Rwanda is making progress toward attaining of sustainable development Goal (SDG). But there are serious deficiencies in term of education. Access to education has expanded rapidly. Nurses have different levels of education; some are trained at secondary school, others have an advanced certificate in nursing obtained after 3 years of nursing school and there are other nurses who have a bachelor's degree in nursing. Currently, trained nurses at the level of secondary school represent the small number according to others. Actually, there is no precise plan to develop nursing specialists in emergency care, but there are efforts to provide additional training for general practice nurses working in emergency department. (WHO, 2016)

In the study conducted, by (Carol et al, 2015)explain the challenge in Rwanda health sector, according to her, while nursing career has developed by shifting activity for many clinical decisions and activities to nurses an insistent absence of adequately qualified health professionals, poses a major obstacle to increasing the availability and quality of specialized care.

The nurses who are working at Mugonero Adventist hospital facing with poor knowledge about oxygen therapy for critical patient because inadequate material and which are available used inappropriate.

## **1.2. Statement of the problem**

Based on theoretical gaps and on the fact that there is, on our knowledge, there is few research related to oxygen therapy or related knowledge, attitude and practice of nurses for oxygen administration in critical ill patients in our country, the idea comes out to conduct the research related to the interest to this topic coupled with our experience in critical care field and own observation.

One of us have 2 years 'experience working as nurse in emergence at Mugonero Adventist Hospital , towards an appropriate health facility is our main activity. According to our pre-hospital emergency protocol, every critical ill patient whose saturation of oxygen is under 92% measured using oximeter; must receive oxygen, typically with a goal of reversing hypoxemia. Most of time, those critical ill patients are transported to emergency services on our portable oxygen 's cylinders, patients are no longer on oxygen treatment until medical prescription is done due to triage and internal management system. It is a good practice to provide the critical ill patient in emergency condition with oxygen regardless the medical written prescription(Browne & Crocker, 2013:3). Harding et al.( 2015 ) suggests that highly qualified clinicians should evaluate all critically ill patients by measuring pulse, blood pressure, respiratory rate, and assessing circulating blood volume, ABG and anemia (Hardinge et al., 2015:3) but in emergency department the use of ABG is not their practice and remembers that using Pulse oximetry has practical limitation like peripheral vasoconstriction ( in case of hypothermia, cardiac failure, and fluid loss), intense ambient light, patient motion, and fitting etc. Regarding oxygen dispensing method, in the research done by Elmak Nimir university hospital, the result showed ( 58%) based on doctor order selection of appropriate oxygen delivery device (20%) of nurses know based on pao<sub>2</sub>, 10% based on guideline , and 12% patient condition (Mahmoud et al., 2016) at Mugonero Adventist Hospital, nurses only use face mask as high flow systems and we are wondering whether nurses know how important it is to choose different deliveries specific and constant percent of oxygen depending of patient's breathing. The reliable proof suggested that choice of the oxygen supply device, patient, nurse and contextual characteristics impact individually and in

combination on the actual nurses manage oxygen therapy (Eastwood, 2012, pp. 40–44). Apart from this practice at Mugonero Adventist Hospital especially in, emergence service and other services, there were no protocols to guide oxygen therapy also there is low quantity of facial mask associate with low quantity portable oxygen's cylinders. Therefore, nurses have used prior knowledge to administer oxygen. Which can lead to poor management of critical patient under oxygen therapy at Mugonero Adventist Hospital

### **1.3. Purpose of the study**

The main objective of this study is to assess nurses's knowledge and practice for critical patients under oxygen therapy at Mugonero Adventist District Hospital.

### **1.4. Research questions**

What is nurse's knowledge regarding oxygen therapy administration for critical patients?

How is nurse's awareness in practice of oxygen therapy administration for critical patients?

### **1.5. Objective of the Study**

To assess the nurse's level knowledge related to oxygen therapy administration.

To describe nurses' awareness of oxygen therapy practices for critical patients.

### **1.6. Significance of the study**

This study will help the Ministry of Health to increase the strategies of improving the level of education and practice of oxygen administration by nurses will be developed and evaluated eventually.

This research will help the Mugonero Adventist Hospital to assess also the major gap among nurses on oxygen therapy in different departments of MAH for the best practice. This assessment will be possible solutions will also be identified.

### **1.7. Justification of the study**

The problems of oxygen deficiency as well as the need and indications for oxygen therapy were later recognized. Soon, oxygen came to be known as a cure all ‘medicine used for many conditions. It was around second decade of the twentieth century and later that the oxygen therapy was adopted for indications based on firm scientific foundations.( (Singhi S et al, 2006)

Oxygen therapy is the term used for the clinical supplemental oxygen. It is indicated to patients with acute hypoxemia. It is one of the most common drugs used in secondary care in hospital. It is also, an essential component of resuscitation, acute medical care, basic life support, anesthesia and postoperative care (Goharani et al., 2017) this is why this study was needed to improve knowledge of nurses.

### **1.8. Limitation of the study**

This study shall be limited for lacking of participation to answer questionnaire, Delay in getting approval of hospital where we found information in data collection, time, unbiased of research design and sampling technique, and limitation of financial.

### **1.9. Scope of study**

The study was carried out at Mugonero Adventist Hospital. MAH is district hospital located in western province, karongi district. The MAH hospital have staff of 136.among of them 76 are nurses.



## CHAPTER TWO: LITERATURE REVIEW

### 2.0. Introduction

This literature review summarizes on the existing information in nurses level knowledge, and practice regarding oxygen therapy and associated factors globally, regionally and locally. This literature review is organized by socio-demographic factors, organizational factors, healthcare related factors and individual factors.

#### Key terms

**Assessment:** It is an action or an instance of making a judgment about something or the act of assessing something (Carol et al, 2015)

**Knowledge:** is defined a familiarity, awareness, or understanding of something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject (Dictionary, 2010).

**Practice:** the actual application or use of an idea, belief, or method, as opposed to theories relating to it. (WHO, 2016)

**Oxygen therapy:** is a treatment that provides you with extra to breath in.it is also called supplement oxygen.it is only available through a prescription from health care provider.(Association, 2015).

**Nurse:** a nurse is a person within the health care environment focused on the care of individual patients, families, and communities so they may attain, maintain, or recover optimal health and quality of life(Nurses, 2017)

### 2.1. Theory of knowledge of nurses on oxygen administration

Knowledge, regarding nurse using oxgenotherapy are key theoretical concepts used in this study as depicted in the conceptual framework which provides an abstract for the assessment of knowledge of nurses towards oxygen administration for critical patients. According to (Mayhob, 2018)

nurses need high-quality training to develop and maintain the knowledge and skills needed to provide the level of care that those critical ill patients need, which can be difficult to integrate into the nurse's daily activities coupled with material resources management, time, responsibility and patient care while maintaining the patients' health care complications of monitoring. (Mayhob, 2018)

The scope of this study focused assessment of nurse's knowledge and practice of oxygen therapy. Arguments are developed to confirm that Knowledge of oxygen promotes good health practices, improve the well-being and required care. On the other hand, lack of nurse 's proper knowledge of oxygen can affect health practices and may damage the patient health.

## **2.2: Clinical practice for Oxygenotherapy administration**

A study was conducted on omissions and errors in oxygen therapy in Greece. The results of the study revealed that 41% of head nurses believed that oxygen is a gas that improves dyspnea patients. The majority of nurses (88.6%) said that there was no protocol for the treatment of oxygen in the department in which they worked. It was found that the oxygen therapy was generally started, modified and deleted by nurses in the absence of a medical order. The results of the study indicate that educational programs, protocols and guidelines are required to ensure the proper use of oxygen. Omissions and therapeutic errors are commonly found on hospital use of oxygen and the use of nebulizers (Babu, 2018).

Knowledge can be considered as the familiarity of the person with anyone or anything, including information, facts, descriptions, and / or qualifications that a person has acquired through experience or training. It can also be considered as the theoretical or practical understanding of a subject matter (e.g. trauma and emergency). (Mayhob, 2018)

## **2.3: Nurses awareness' on Oxygen therapy or on application of oxygen therapy**

Oxygen therapy requires knowledge and practical competencies concerning oxygen delivery devices, oxygen saturation target based on the risk of type of respiratory failure, patient preferences, and monitoring and interpretation of finding including blood gases in all critically ill patients and cases of suspected respiratory acidosis and hypercapnia. Different methods are used for oxygen therapy. These are nasal cannula, face mask, venturi mask, partial re-breather mask,

non-re-breather mask, oxygen tent, oxygen hood, face tent, tracheal catheter, and nasal catheter. (Mayhob, 2018)

Most of the nurses in oxygen therapy they does not known how much flow patient must receive according to the patient condition especially since they oxygen therapy those patients lonely, the mot of doctors come to the patients who has already received oxygenethapy.as summary most of nurses those not have some understanding in oxygen therapy

#### **2.4: Required material for oxygen therapy**

There are several types of equipment a nurses may use when providing oxygen therapy to a patients like pulse oximeter which is electronic device that measures the oxygen saturation of hemoglobin in a patient's red blood cells normal range in adult is 92-100%,next is oxygen flow meter, portable oxygen supply devices, home portable oxygen concentrator,nasl cannula, high flow nasal cannula, simple face mask(flow rate 6-10l/min),non rebreathe mask(flow rate 10-15l/min)CPAP(continuous positive airway pressure, venture mask,,BiPAP(bi-level positive airway pressure),ambu bag,endotracheol intubation, mechanical ventilator, tracheostomy (WHO, 2016)

#### **2.5: The alerts signs before oxygen administration**

The administration of oxygen must start by assessing patients for oxygen saturation. The initial needs assessment for oxygen therapy is made clinically, considering what we can see when we evaluate the patient, lab findings, and what we can observe about the underlying disease process. (WHO, 2016)

(Carol et al, 2015)show the Nurses 'responsibility on oxygen administration where must pay particular attention to three systems when addressing the potential need for oxygen therapy. Typically, we jump to the respiratory system and look for respiratory signs and symptoms, which may include alteration in rate (tachypnea, bradypnea, or apnea) or depth of respiration (hypopnea), difficulty breathing (dyspnea), and changes in color (pallor or cyanosis). add explain more, neurologic signs and symptoms, as well as cardiac response, can provide important clues that will help direct nurses search for hypoxemia Oxygen administration's knowledge of and the tools used to provide oxygen can also be a challenge to greatest oxygen delivery. (Carol et al, 2015)

It has been demonstrated with the oxygen prescription data, many practical shortcomings exist that lead to poor outcome of patient.

Mc Donald propose change of culture and a clear need to examine obstacles, facilitators, and attitudes toward oxygen and prescription in acute care if we improve practices and minimize damage to groups of susceptible patients. They agree that these interventions can help translate expert guidelines into clinical practice. To facilitate the adoption of best practices and eventually 20 improve clinical outcomes for COPD and other vulnerable groups of patients who are primarily affected by poor oxygen delivery practices (Mc Donald, 2016,) However, there is no agreement on the definition of knowledge, and there are many theories about it (WHO, 2016) . The concept of knowledge explains oxygen administration to the critical ill patients and related myths.

According to (Kavitha and Patel,2015) during their study, conclude that there is a need to update the knowledge of staff nurses, and regular trainings should be integrated into their work schedule.

In the study conducted in 2016 by Ganeshan et al., knowledge of 53 nurses and 40 doctors that worked in intensive care unit of the General Hospital in UK and were active in oxygen prescription, was evaluated. 25% of the physicians and 50% of the nurses could not prescribe the right dose and method of oxygen therapy in cardio respiratory arrest cases.

They concluded that doctors and nurses did not have sufficient knowledge and understanding of oxygen therapy. In a similar study assessed the knowledge of oxygen therapy in seven hospitals in a major city of Greece, in 2017 (Goharani et al., 2017)

The findings showed that the familiarity level of participants with some aspects of O<sub>2</sub> therapy such as its indications, necessary measurements and monitoring during therapy, and identifying delivery devices was on moderate level (Mayhob, 2018)

### **Hazards of Oxygen Therapy**

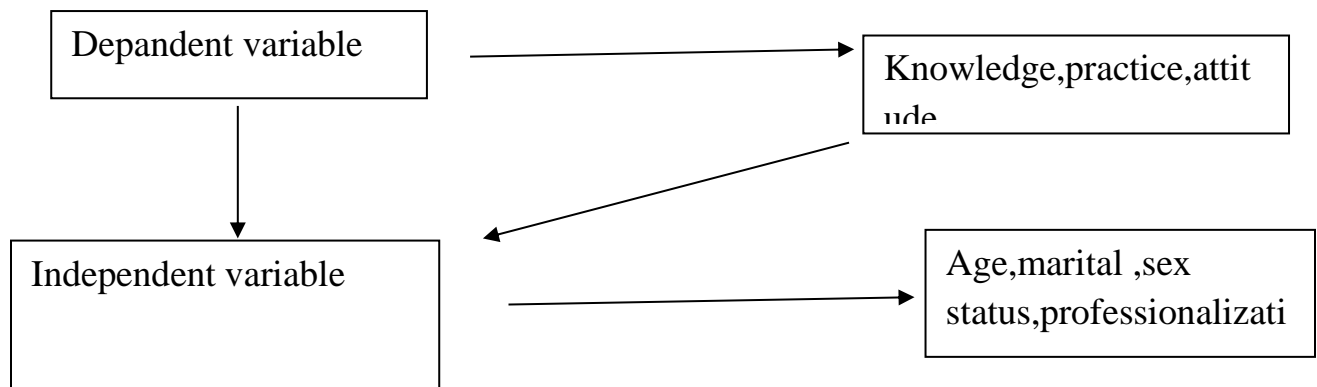
As with all medications, oxygen must be administered safely. Oxygen given in high concentration over many days can result in oxygen toxicity, manifested as changes in lung tissue. (Recall that excess oxygen in newborns can cause vision difficulties.) In some people, increased oxygen concentrations also affect their ventilator drive control mechanisms, which actually weaken the

stimulus to breathe. Therefore, treat oxygen like a medication and administer it with the same care used in administering any medication.

A physician evaluates the client's need for oxygen and writes a specific order for oxygen therapy with the appropriate dosage. Administration of oxygen by mask or cannula is expressed in liters per minute (LPM or L/min); some devices control the specific oxygen concentration to be administered. When using mechanical ventilators, oxygen concentration can be controlled more easily. **Everyone, including the client**, visitors, and others in the unit, must know and follow the necessary precautions when oxygen is administered. If oxygen comes in contact with any combustible material, even a small spark can ignite an explosive (flash) fire. (what-when-how, 2017) .

## 2.6: Conceptual frame work

A conceptual framework is used to understand the place of research and inform the direction of a research project.also uses previous research to determine a theory and methodology for a current research project.



(WHO, 2016)

## **CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY**

### **3.0 . Introduction**

This chapter includes the methodology of the study. It describes the research approach and design, study area, target population, the sample size, sampling strategy, data correction, instrument and ethical consideration.

### **3.1. Research approach and design**

Research approaches are plans and the procedures for research. that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation. (WHO, 2016)

To reach our research objectives, a quantitative descriptive cross section study was conducted with the aim of assessing nurse's knowledge regarding oxygen therapy at MAH. The researcher approached each of them available during data collection period in the selected units requesting for their participation after sufficient explanation of the purpose of the study

### **3.2. Target population**

Target population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusion. The target population usually has varying characteristics and it is known as the theoretical population(Mizner, 2013)

The target population was professional nurses working at the Emergency, Neonatology, operation Room, Pediatrics, and maternity units at MAH. Nurse's qualifications range from: Associated nurses, Diploma Nurses, Bachelor of Nurses. The inclusion criterion has comprised of registered nurses working in the above units for a minimum period of 1 year; and, Nurses agreed to participate in the study. Exclusion criteria has been to have less than one year working experience at the unit, being not registered nurse, being in annual leave during the time of data collection. Nurses not directly involved in the bedside patient care such as nurse managers are also excluded. Total target population will be 76.

### **3.3. Sampling procedure**

Sampling procedure is process of choosing part of a population to use to test hypotheses about the entire population.(Research, 2016)

The researcher used a purposive sampling because it is a simple strategy in which the researcher select people who are considered to be typical of the population and share same characteristics.

### **3.4. Sampling size**

Sample size is a research term used for defining the number of individuals included in a research study to represent a population.(Research, 2016)

Sample size will be 50 participants because others was not part of our study was having under one years of experience and other was working in unselected services

### **3.5. Research instrument**

A Research Instrument is a tool used to collect, measure, and analyze data related to your research interests. A research instrument can include interviews, tests, surveys, or checklists. The researcher instrument we will use in our study is questionnaire.(Research, 2016)

### **3.6. Data collection procedures**

A brief opening to the participants has individually been organized to obtain the consent forms provided by the researcher to eligible participants at work. The researcher allowed nurses with sufficient time to read the consent form and ask questions if any. Signed consent forms have been collected from nurses willing to participate and a copy of the questionnaire has been provided. Each participant has had time to complete the questionnaire in front of researcher.(Research, 2016)

### **3.7. Data analysis**

Data analysis is the process of cleaning, changing, and processing raw data, and extracting actionable, relevant information that helps businesses make informed decisions. (Carol et al, 2015)Data was recorded and analyzed using the SPSS program (Statistical Package for Social Sciences) version 16.

### **3.8. Validity and reliability measures**

To make sure that the tool is measuring what it is supposed to measure, the questionnaire was adapted to the current study. The questionnaire was finalized after the pilot used to test the instrument. A pilot study was conducted with 5 nurses in emergency and operating room unit at MAH hospital to determine the clarity of questions, effectiveness of instructions, completeness of response sets, time required to complete the questionnaire and success of data collection technique.

Pilot subjects were asked to comment on the applicability and appropriateness (validity) of the questionnaire.

## **CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, INTERPRETATION AND SUMMARY**

### **4.0 INTRODUCTION**

This chapter represent data analysis we have been conducted at Mugonero Adventist Hospital we have been used 50 responders and it has 3 section which is demographic characteristics of



responders, Level of knowledge of oxygen therapy for nurse’s participants on the study, nurse awareness in practice oxygen therapy at MAH

#### 4. 1.DATA PRESENTATION AND ANALYSIS

### Section A. demographic characteristic of the respondent

#### A.1: Sex of responders

variable	frequency	percentage
Female	35	69.7%
Male	15	30.3%

Table above represent sex of responders where in 50 responders 35 were female indicate 69.7% and 15 were male indicate 30.3%

#### A.2: Age for respondent

variable <del>Age</del>	frequency	percentage
20-29	15	30%
30-39	24	48%
40-49	10	20%
>50	1	2%

The table above represent ages of responders where in 50 responders 15 was having age 20-29 represent 30%, 24 responders was having ages 30-39 represent 48%, 10 responders was having 40-49 ages indicate 20% and above 50 ages was 1 indicate 2%.

### A.3: Martial status for respondent

variable	Frequency	Percentage
Single	15	30%
Married	32	64%
Divorce	1	2%
widower	2	4%

The table above represent marital status for responders where 15 responders were single represent 30%,32 responders was married represent 64%,1 was divorce represent 2% and widower was 2 represent 4%

### A.4: professional category for respondent

variables	Frequency	Percentage
Associated nurse	2	4%
Diploma nurse	26	52%
Bachelor nurse	20	40%
Masters nurse	2	4%

The table above represent professional category of responder where 2 was associated nurse indicate 4%,26 was diploma nurses indicate 52%,20 was bachelors nurse indicate 40% and 2 was having mastres in nursing which indicate 4%.

### A.5: working experience in the respective unit

variables	frequency	Percentage
1year	3	6%

1-3 years	18	36%
3-6 years	22	44%
6-9 years	15	30%
>10	2	4%

The table above represent working experience of responder 1 year of experience was 3 indicate 6%, 1-3 years was 18 indicate 36%, 3-6 years was 22 indicate 44%, 6-9 years was 15 indicate 30% and above 10 years was 2 indicate 4%

### **Section B. Level of knowledge of oxygen therapy for nurse's participants on the study**

Variables	Responses	Frequency	Percentage
1. Do you know the aim of administration oxygen therapy?	Yes:		
	High	12	24%
	Moderate	16	32%
	Low	10	20%
	No information	2	4%
	No	10	20%
2. Do you know the indication of oxygen therapy?	Very High	4	8%
	High	12	24%
	Moderate	18	36%
	Low	10	20%
	No	6	12%
	Very agree	22	44%

3.do you agree that oxygen treatment is usually not necessary unless the SPO2 is less than 92% ?	Agree	20	40%
	Disagree	6	12%
	No idea	2	4%
4. Do you know the complication of oxygen administration?	Very high	5	10%
	High	12	24%
	Moderate	18	36%
	Low	10	20%
	No	5	10%

According to the table above indicate 32% know the aim of administration oxygen therapy, and also 36% were know the indication of oxygen therapy with moderate .

### Section c: Nurse's knowledge for oxygen therapy practice at MAH

VARIABLE	RESPONSE	FREQUENCY	PERCENTAGE
1.Do you know the difference methods selected for O2delivery ?	YES	42	83.8%
	NO	8	16.2%
2.do you have basic competencies required for oxygen therapy?	YES	38	76.3%
	NO	12	23.7%

3.have you trained on oxygen therapy administration and on good using of oxygen therapy equipment?	YES	15	30.2%
	NO	35	69.8%
4.did you perform well oxygen therapy practice based on indication for oxygen?	YES	38	76.3%
	NO	12	23.7%

According to the table above for knowledge for oxygen therapy practice. The respondent 83,8% know the different methods selected for oxygen therapy and also 76,3% had basic competencies required for delivering oxygen therapy, thus 76,3% perform well oxygen therapy practice based on indications for oxygen therapy delivery. And Nurses awareness in practice oxygen therapy practice at MAH

#### **Section d. nurse awareness in practice oxygen therapy at MAH**

<b>VARIABLE</b>	<b>RESPONSE</b>	<b>FREQUENCY</b>	<b>PERCENTAGE</b>
1.Did you know the oxygen therapy equipment to use on different condition of the patient	YES	32	63.9%
	NO	18	36.1%
2.have you prepare and aware to use the oxygen equipment in which you have	YES	26	52.1%
	NO	24	47.9%

The table above represent 63,9% knowing the oxygen therapy equipment to use on different conditions of the patient, and also 52,1% had awareness and prepared to use the oxygen equipment.

### **4.3. DISCUSSIONS OF FINDINGS**

The result showing that nurses 'level of knowledge regarding oxygen therapy has high score than expected. it was found out in a study conducted by (Babu, 2018) showing that the majority of nurses (88,6% have sufficient knowledge regarding oxygen administration methods. the nurses provide correct answers less frequently for the question regarding indication of oxygen therapy, the aim of oxygen administration and oxygen treatment was usually not necessary unless the spo2 is less than 92%.

There is no significant difference detected between level of knowledge of the nurse having masters nurse,bachelor nurse, diploma nurse or associated nurse.this is an un expected findings with regard to the results of result of our study.

This result indicates that the nurses do not receive sufficient training on oxygen therapy during their undergraduate studies or after they graduate from these programs.In our study, the nurses working in the emergency were found out to have the high knowledge scores compared to those working at internal and surgical departments. It has been remarkably concluded that in the study there is not a significant difference between the knowledge score of the nurses regarding oxygen therapy of those who have and have not been provided with such training.

When we examine the literature, a study conducted by Carol et al,2015 in order to assess the relationship between the training provided for the nurses and their clinical decisions regarding oxygen therapy practices suggests that the knowledge score of the nurses regarding oxygen therapy increased by 24% after they were provided with training on the issue. And this indicates that the content of the training provided for the nurses participating in our study during both academic studies and in-service training is not sufficient.

## **CHAPTER FIVE: GENERAL CONCLUSION AND RECOMMENDATIONS**

### **5.1. Introduction**

The result showing that nurses 'level of knowledge regarding oxygen therapy has high score than expected. it was found out in a study conducted by (Babu, 2018) showing that the majority of nurses (88,6% have sufficient knowledge regarding oxygen administration methods. the nurses provide correct answers less frequently for the question regarding indication of oxygen therapy,

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## **5.2: Conclusion**

It has been revealed in our study that the level of knowledge of the nurses regarding oxygen therapy has lower than expected and their knowledge is particularly inadequate in terms of oxygen therapy application methods.

## **5.3. Recommendation**

### **To Mugonero Adventist Hospital**

It has been revealed in our study that the level of knowledge of the nurses regarding oxygen therapy has lower than expected and their knowledge is particularly inadequate in terms of oxygen therapy application methods

The Hospital should seek trainings regarding Oxygen Therapy for the Nurses especially those working into Department emergence,neonatology,pediatric.Hospital protocol must be developed. Oxygen supply and deliver devices should always be adequate and be used properly. The Hospital should organize regular continuous professional discussion regarding Oxygen Therapy so as to reboot and nurses get updated to Oxygen Therapy updates.

### **Ministry of health**

To encourage the researchers to do the research of knowledge and practice regarding to oxygen therapy in Rwanda.

To equip District hospitals with materials which help nurses in oxygen therapy.

The results of this study should be shared with stake holders such as nurse, administrators, nurse teachers, nurse researchers, nurse clinicians, hospital administrators and the public. This should make the problem of oxygen therapy a public concern.

### **5. 4. Suggestion for further study**

A similar study need to be conducted that and would recruit more nurses from different hospitals, so that the results could be generalized to the entire population of hospitals in Rwanda



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## **APPENDIX I: INFORMED CONSENT**

### **Introduction**

To participate in the research study entitled “**assessment of level knowledge and practice of oxygen therapy among Nurses at Mugonero Adventist hospital**”

You are being asked to be a volunteer involved in a research study mentioned above. This study is conducted at Mugonero district hospital. The researchers of this study are IRADUKUNDA Divin & BYIRINGIRO Aime

### **The purpose of this study**

This study will be aimed on, **assessment of level knowledge and practice of oxygen therapy among nurses at mugonero Adventist district hospital**” and it will show the gaps in **level knowledge and practice of oxygen therapy among nurses at mugonero Adventist district hospital**

### **Where the study is being done and number of people participating.**

This study will be conducted at Mugonero District Hospital.

### **Study procedure**

Before you take part in this study (Replying the questionnaire), the investigator must explain to you and you must be given a chance to ask questions. You must read and sign this informed consent form before you start answering questions in it. You will be given a copy of this consent form to take home with you.

### **Possible risk or side effects and taking part in this study.**

There are no risks you will be exposed to when participating in the study.

### **Confidentiality of study records and study reports.**

Information collected for this study is kept confidentially. However, Mugonero hospital Research Review Committee will receive copies of the study reports related to this study but no participant names or identification details will be used so as to ensure that all participants are protected and their rights are not violated.

## **Informed Consent**

### **Participant consent page**

I certify that I have read or have had read to us the above documents describing the benefits and procedures for the study titled “**assessment of level knowledge and practice of oxygen therapy among nurses at mugonero Adventist district hospital**” and I understand it.

I voluntarily agree to participate in the study.

Date                                      Signature of the participant.                                      Name of the participant.

Date                                      Signature of the witness                                      Name of the witness.

We IRADUKUNDA Divin & BYIRINGIRO Aime certify that the nature and the purpose, the potential benefits and the risks associated with participating in this study have been explained to the above individual.

Date                                      Signature of the researcher.                                      Name of the researcher.

## **APPANDIX II: RESEACH QUESTIONAIRE**

Dear respondent,

We IRADUKUNDA Divin& BYIRINGIRO Aime student of Kibogora Polytechnic Pursuing Bachelor degree in general nursing. I am conducting research on “**assessment of level knowledge and practice of oxygen therapy among nurses at mugonero Adventist district hospital**”. For that pursuit, I kindly request for your opinion and answers to the questions raised in this questionnaire to facilitate my study by ticking the appropriate option. The information obtained shall be used for academic purposes only and shall be treated with confidentiality. It is only through your positive response that this study can be completed successfully.

Thank you for your cooperation and time.

### **I. Demographic characteristics of the responder**

#### **Section A: Please tick the best answer**

- 1. Sex**                      Female/ Male
- 2. Age**                      **A.** 20 – 29 years  
**B.** 30 – 39 years  
**C.** 40 – 49 years  
**D.** > 50 years
- 3. Marital Status**    **A.** Single  
**B.** Married  
**C.** Divorced  
**D.** Widowed

#### **4. Your category of profession is**

- A.** Associated nurses  
**B.** Diploma Nurse

C. Bachelor of Nurse

D. Masters degree

**5. Working experience in the respective unit**

A. 1 year

B. 1 – 3 years

C. 3 – 6 years

D. 6 – 9 years

E.  $\geq$  10 years

**II. Level of knowledge of oxygen therapy for nurse's participants on the study?**

**Respond by Yes or Not**

**1. Do you know the aim of administration oxygen therapy?**

Yes, or not

If yes clarify your knowledge on the following categories

a. High

b. moderate

c. low

d. No information

**2. Do you know the indication of oxygen therapy?**

Yes or not

If yes clarify your knowledge on the following categories

a. Very high

b. High

c. moderate

d. Low



e.No information

**3.Do you know that the patient may need oxygen therapy when he is under condition that disease: Pneumonia;COVID-19; severe asthma attack; Late-stage heart failure; Cystic fibrosis and Sleep apnea.**

**Yes, or not. If yes categorize your level of knowledge on the following categories:**

a.very high

b.Very high

c.Moderate

d. Low

e. No information

**4.Do you agree that Oxygen treatment is usually not necessary unless the SpO<sub>2</sub> is less than 92%.**

a. Very agree

b. Agree

c.disagree

d.no idea

### **III. Nurses knowledge for oxygen therapy practice at MAH**

**1. Do you know the different methods selected for Oxygen delivery?**

Yes, or not

If not justify your response.

**2. Do you have basic Competencies required for delivering oxygen therapy**

Yes, or not

If not, why?

**3. Have you trained on oxygen therapy administration and on good using of oxygen therapy equipments?**

A. Yes

A. No

**4. During oxygen therapy practice do you know nursing guidelines for additional guidance in assessment and monitoring the patient? And Is there a guideline or protocols of oxygen therapy delivery in your working service?**

Yes, or not

If not Justify the response

**5. Did you perform well oxygen therapy practice based on Indications for oxygen therapy delivery?**

Yes, or not.

If not justify your response.

#### **IV. Nurses awareness in practice oxygen therapy practice at MAH.**

**1. Did you know the oxygen therapy equipment's to use on different conditions of the patients?**

Yes, or not.

If not justify your response

**2. Have you prepared and aware to use the oxygen equipment in which you have?**

Yes, or not. If not Justify your response.

**3. For the patients under oxygen therapy do you aware to know the Clinical observations or warning symptoms towards the clients?**

Yes, or not.

**3. Do you aware about the precaution to implement during administering oxygen therapy?**

Yes, or not

**4. Have you Adequate skills to assess the effectiveness of oxygen therapy towards the patients under oxygen therapy?**

Yes, or not

If yes clarify your skills on the following level:

- a. Excellent skills
- b. High skills
- c. Moderate skills
- d. Poor skills
- e. No skills

**5. Do you aware to explain procedure of oxygen therapy to the patient and the reason of water for humidification connected to oxygen machine.**

Yes, or not.

**6. Do you aware to verify if Is there adequate supply of oxygen and delivery systems in your unit? YES, OR NO**

**THANK YOU VERY MUCH FOR YOUR TIME FOR PARTICIPATION**