

Healthcare Provision in Understanding the Diseases Pathophysiology and Patients' nursing Care A Case Study of Boguila Health Facility in the Central African Republic

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1. INTRODUCTION

A man cannot become a competent healthcare provider without the full knowledge of diseases pathophysiology, and the physician without pathophysiology flounders along in an aimless fashion, never able to gain any accurate conception of disease¹

Professional nursing requires a substantial knowledge base of Human Pathophysiology when making decisions in patient care, so a foundational knowledge of Human Pathophysiology (HP) is critical to the success of nursing students²

Patients are today continuously looking for good quality services from health professionals. Professional nurses are expected to render quality care to fulfil the patients' healthcare needs through understanding the pathophysiology and nursing care based on patient's condition. Poor nursing care has led to several litigations and the loss of patients' lives. It is essential to explore professional nurses' viewpoints regarding quality nursing care³

Correctly prioritizing patients care is an essential good practice. A nurse with multiple patients' needs to determine the order that they will be seen. If a patient present with multiple symptoms the nurse must know which to address first. Understanding pathophysiology is essential for critical thinking required by nurse to prioritize and deliver patient care it will allow the nurse to recognize the critical changes in the patient's status and aid in making the correct judgements in the clinical settings⁴.

Only by understanding the essentials of nursing care is it possible to respond to the commitment to institutional excellence⁵.

Nurses are the first point of contact for most patients entering a health care facility. If the patient's medical condition allows for them to communicate, the first thing nurses do is collect their information. Maintaining detailed records about a patient's medical history and symptoms is among a nurse's most crucial responsibilities. Nurses are also trained in evaluating and assessing patients. Without an accurate assessment of a patient's condition, it's difficult to determine a proper course of treatment. Aside from the risks to patient safety, inaccurate assessments can also waste valuable time and resources. To make correct assessments, nurses apply the study of pathophysiology⁶

Nurses use pathophysiology to assess what stage health conditions — such as a bacterial infection or a wound — have progressed to, which ultimately informs treatment.).

Applying pathophysiology in nursing care allows nurses to understand the various stages and manifestations of an illness or injury, which is vital to determine the proper course of treatment. The following are examples of health conditions where nurses and other health care providers may apply the concepts of pathophysiology to understand a patient's condition⁶.

Nurses who understand pathophysiology can provide higher quality patient care. Various pedagogical strategies make it unclear which practice meets the challenges of teaching pathophysiology⁷

Pathophysiology is the term used to describe changes at cellular level caused by disease or injury. Healthcare professionals need an understanding of cellular biology as well as anatomy and physiology to understand how normal bodily function is affected by disease processes⁸

Knowledge is a subjective measure of quality nursing care, and is often criticized by patients because a patient hospitalized for surgery may receive excellent health care with good outcome but may be dissatisfied with the interpersonal care received from nurse as well as the food and facilities provided. Therefore knowledge with nursing care however is increasing recognized as an important dimension of quality nursing care⁹.

Excellence and Power in Clinical Nursing Practice. Menlo Park, CA: Addison-Wesley; 1984) described nursing knowledge as the culmination of practical experience and evidence from research, which over time becomes the "know-how" of clinical experience. This "know-how" knowledge asset is dynamic and initially develops in the novice critical care nurse, expands within competent and proficient nurses, and is actualized in the expert intensive care nurse. Collectively, practical "know-how" and investigational (evidence-based) knowledge culminate into the "knowledge of caring" that defines the profession of nursing⁹

Almost everything we do in nursing is based on our knowledge. In 1984, Benner (From Novice to Expert: Excellence and Power in Clinical Nursing Practice. Menlo Park, CA: Addison-Wesley; 1984) described nursing knowledge as the culmination of practical experience and evidence from research, which over time becomes the "know-how" of clinical experience. This "know-how" knowledge asset is dynamic and initially develops in the novice critical care nurse, expands within competent and proficient nurses, and is actualized in the expert intensive care nurse. Collectively, practical "know-how" and investigational (evidence-based) knowledge culminate into the "knowledge of caring" that defines the profession of nursing. The purpose of this article is to examine the concept of knowledge management as a framework for identifying, organizing, analyzing, and translating nursing knowledge into daily practice. Knowledge management is described in a model case and implemented in a nursing research project¹⁰

Healthcare workers are expected to provide the best possible care for each patient. The growing complexity resulting from longer life expectancy and increasing number of patients, along with continuously rising healthcare costs, is creating a demand for high quality standards and efficiency in nursing practice¹¹

Knowledge management-based nursing care has a positive effect in preventing healthcare associated infections (HAIs). Therefore, nursing professionals can utilize key strategies of knowledge management to support clinical decision making, reorganize nursing actions, and maximize patient outcomes¹²

2. Background

In April 2014, the Central African Republic, specifically in the Ouham prefecture, District of Nanga-Boguila, the security became more precarious in the north towards the Chadian Border, as well as towards the west due to multiple armed groups staying in this region which limits the population to have access to care. There is chronic and acute food insecurity, which further deteriorate during the "lean season". This increases the number of malnutrition cases seen in June-Aug, overlapping with the seasonal Malaria peak. This insecurity status, healthcare staff of Boguila do not benefit from training since the tragedy. Before the tragedy, the healthcare services were provided by the international staff and trained national staff. Training for continuous professional development was one of the responsibilities of international staff. However, the international staff left the area to Bossangoa and the national staff kept maintaining health services under projects as skeleton team with indirect supervision of Bossangoa as national staff, 75% of healthcare providers are first-aiders. In Central

African Republic, the nurse-aids are personnel who finished secondary school in any option different from nursing, for instance education, literature, etc. able to speak basic French and receive onsite or bedside nursing training to take care of patients. The system of using nurse aids was for responding to the primary healthcare needs in villages of the Central African Republic due to shortage of nurses countrywide. This kind of healthcare staff members triggered researchers to assess their level of healthcare provision in understanding the diseases pathophysiology and patients 'nursing care, considering their low level of education in nursing profession as 75% are nurse-aids.

3. METHOD

This study was *descriptive design*. Descriptive design was used to help researchers to systematically obtain information to describe the situation of healthcare provision in understanding the diseases pathophysiology and patients 'nursing care at Boguila health facility, in Central African Republic ⁸.

Place:

The study was undertaken in the Health center of Boguila, located in the Health District of Nangha-Boguila consists of 6 health zones with 34 Health facilities, Ouham prefecture. It is one of 16 prefectures of the Central African Republic. The city of this prefecture is Bossangoa, and its landscape is about 32,100km² with 430,506 inhabitants.

Population and sample size

The research population was Nurse-aids working in one selected health center of district of Nanga Boguila, in the Central African Republic. The research participants have been working in OPD, Nutrition, Vaccination, TB/HIV , minor surgery, and maternity. **Yamane formula: $n = N/(1+N(e)^2$, was used to calculate the sample size, which equals to 19 nurse-aids; where n=sample size, N: Population size which is equal to 20 nurse-aids, $e =$ "standard "error with 0.05 which reliability level of 95% or $e =$ level of precision; always set the value of 0.05.**

The formula application

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The formula application

$$n = 20 / (1 + 20(0.05)^2)$$

$$n = 20 / (1 + 20(0.0025))$$

$$n = 20 / (1 + 0.05)$$

$$n = 20 / 1.05$$

$$n = 19.04$$

$$n = 19$$

Sampling method

The researcher used simple random sampling, each member of population was equally likely to be chosen as part of the sample through the method of lottery⁹ by which the researcher numbered each member of population in a consequent manner, writing numbers in separate pieces of paper. These pieces of papers have been folded and mixed into a box. Lastly, samples have been taken randomly from the box by choosing folded pieces of papers in a random manner. As N was equal to 20 and n equal to 19, only the participant who choose number 20 has been excluded and definitely the researchers remain with 19 participants (simple size) as mentioned above and participated voluntarily.

Validity and reliability

The researchers conducted Pre-testing of 5 subjects (nurse-aids) from nearest health center located in Nangha Boguila District by a Questionnaire using a Likert Scale showing levels or DEGREE of healthcare provision in understanding the diseases pathophysiology and patients 'nursing care "1. Insufficient, 2. Fair; 3. Good, 4. Very good; 5. Excellent"the questionnaire has been previously presented to Medical team management. The questionnaire was developed in English then translated in French as the participants are French speakers. The respondents approved that the questionnaire was clear, the minor typing and errors of language translation have been corrected and cleared.

Data collection

The data has been collected by introducing the study in different services, Distribution of questionnaires randomly distributed to 19 participants then there was a Collection of answered questionnaires. Duration of data collection was 4 weeks.

Data analysis

Qualitative and quantitative Analysis uses Graphical tool "graphs. After receiving an ethical clearance from Ministry of Health, Boguila Health District the verbal consent has been obtained from study participants after description of the purpose of the study. The data has been anonymous and all data has been stored confidentially and securely.

The questionnaire was made to capture information about the healthcare provision in understanding the diseases pathophysiology and patients 'nursing care at Boguila health facility, in Central African Republic.

4. Results

Understanding the diseases pathophysiology and patients 'nursing care for the patients affected by the following conditions

Anemia		HIV & opportunistic infection		Wounds dressing		Conjunctivitis	
19	%	19	%	19	%	19	%
Insufficient .2	11%	2	11%	2	11%	2	11%
3 fair	16%	5	26%	5	26%	1	5%
good3	16%	3	16%	2	11%	6	31%
Very good 7	39%	4	21%	6	32%	3	16%
Excellent 4	21%	5	26%	3	16%	7	37%

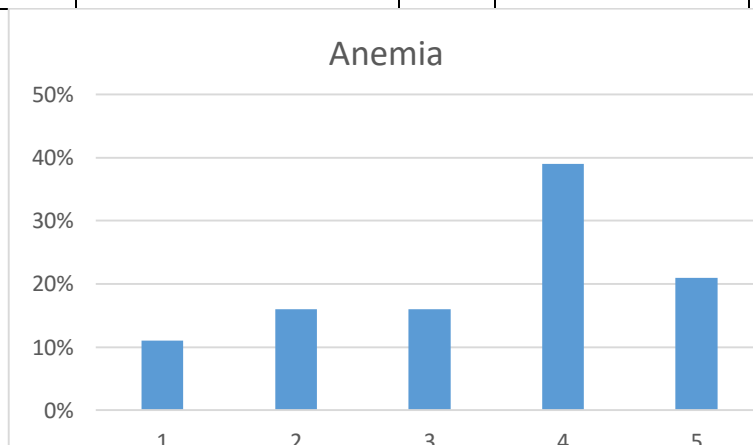


Fig 8. understanding of the pathophysiology and nursing care of patients suffering from Anemia

Legend: 1. Insufficient, 2. Fair ; 3. Good , 4. Very good ; 5. Excellent

It is found that high number of respondents (39%) reported that they had a very good understanding, followed by 21% who had excellent understanding, 16% had good understanding, 16% had fair understanding and 11 % insufficient understanding of pathophysiology of anemia and nursing care provision for the patients suffering from anemia.

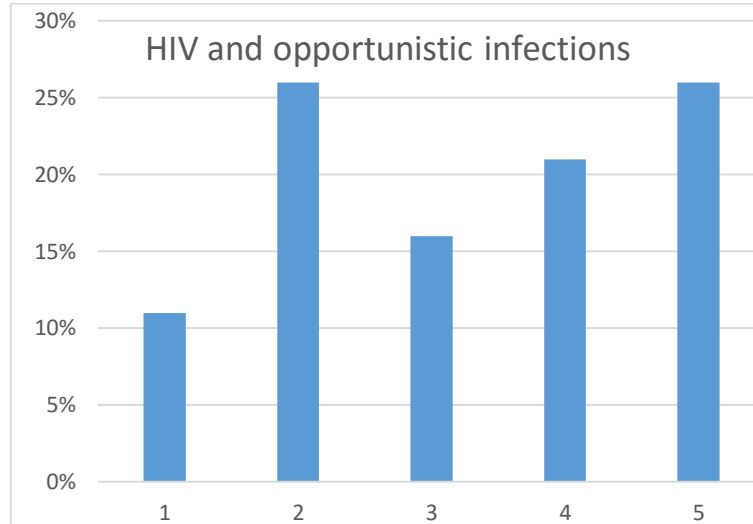


Fig 9. understanding of the pathophysiology and nursing care of patients suffering from HIV and opportunistic infection

From the figure above the results shown that 26% were at excellent level, 21% were very good, 16% were good, 26% were fair and 11% were at insufficient level in understanding of the pathophysiology and nursing care provision for the patients suffering from HIV and opportunistic infection,

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good; 5. Excellent

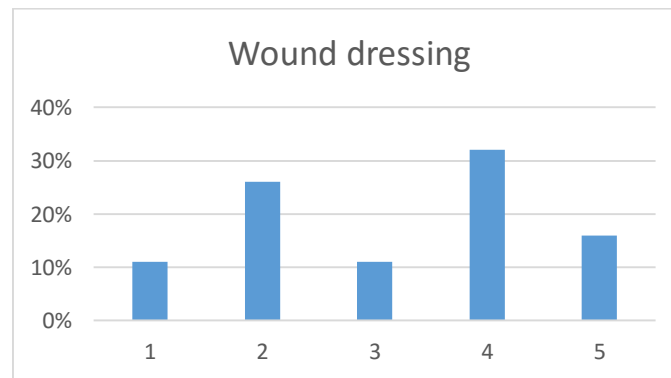


Fig 10. understanding of the pathophysiology and nursing care of patients suffering from wound

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above the results shown that 16% were at excellent level, 32% were at very good level, 11% were at good level, 26% were at fair level, and 11% were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for the patients suffering from wound dressing

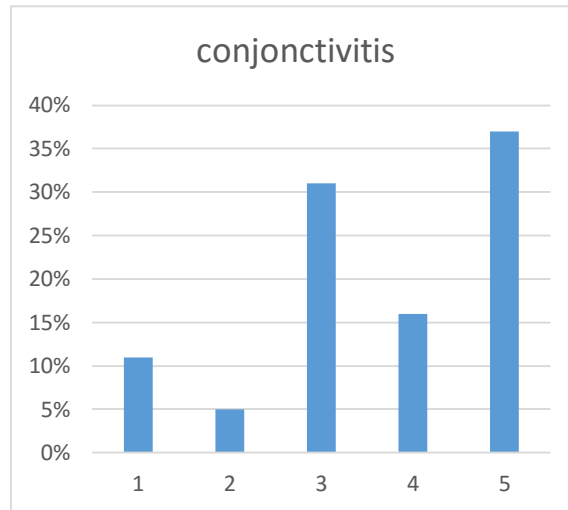


Fig 11. understanding of the pathophysiology and nursing care of patients suffering from conjunctivitis.

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above, the results shown that 37% were at excellent level, 16% were at very good level, 31% were at good level, 5% were at fair level and 11 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from conjunctivitis.

Gastro-enteritis		Measles		Meningitis		Fungal infections		Gastritis	
19	%	19	%	19	%	19	%	19	%
Insufficient 3	16%	3	16%	4	21%	2	11%	2	11%
Fair 3	16%	5	26%	3	16%	4	21%	4	21%
Good 1	5%	3	16.00%	2	10%	2	11%	2	11%
Very good 7	37%	5	26%	7	37%	7	37%	6	32%
Excellent 5	26%	3	18%	3	16%	4	21%	6	5%

Sexual based violence		Syphilis&IST		Snake bites	
19	%	19	%	19	%
Insufficient 3	16%	3	16%	5	26%
Fair 5	26%	5	26%	4	21%
Good 2	11%	3	16%	5	26%
Very good 5	26%	8	42%	3	16%
Excellent 5	26%	4	21%	2	11%

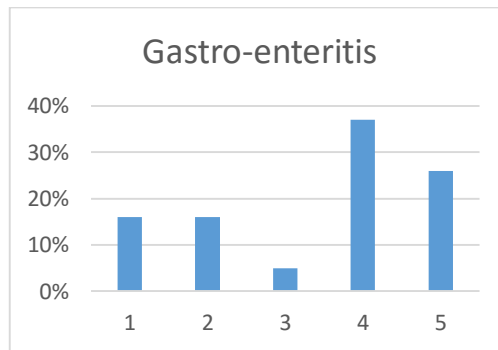


Fig 12. understanding of the pathophysiology and nursing care of patients suffering from Gastro-enteritis

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above, the results shown that 26% were at excellent level, 37% were at very good level, 5% were at good level, 16% were at fair level and 16 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from gastro-enteritis.

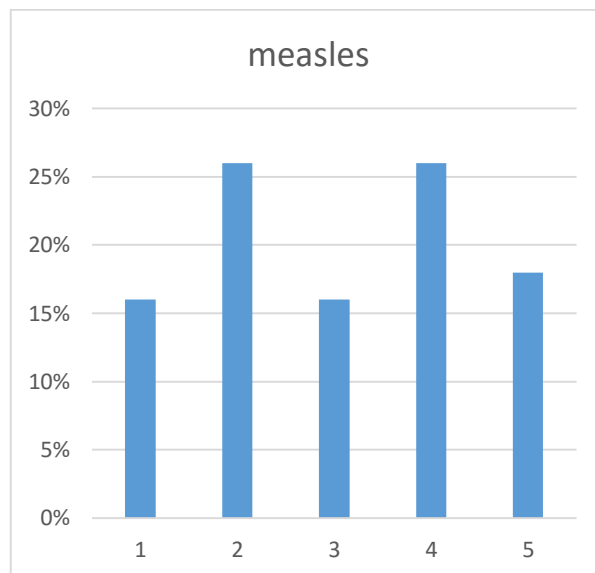


Fig 13. understanding of the pathophysiology and nursing care of patients suffering from measles

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above, the results shown that 18% were at excellent level, 26% were at a very good level, 16% were at good level, 26% were at fair level and 16% were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from measles.

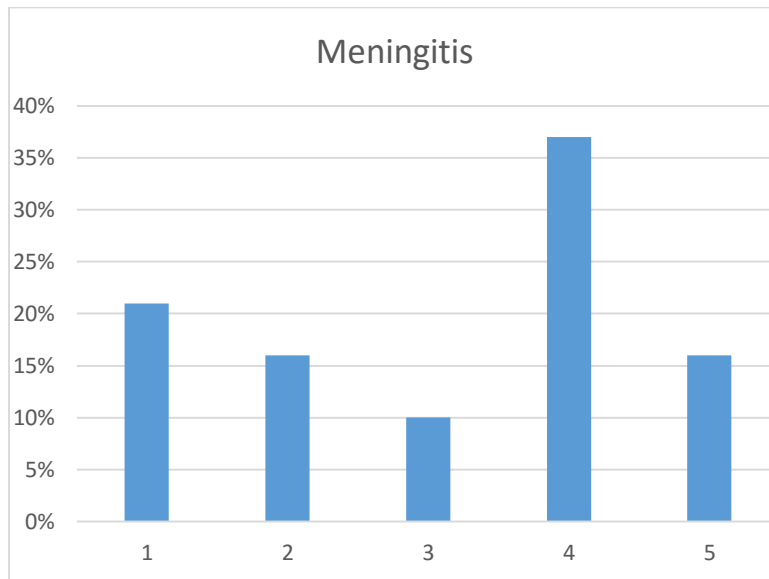


Fig 14. understanding of the pathophysiology and nursing care of patients suffering from meningitis

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above, the results shown that 16% were at excellent level, 37% were at very good level, 10% were at good level, 16% were at fair level and 21 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from meningitis.

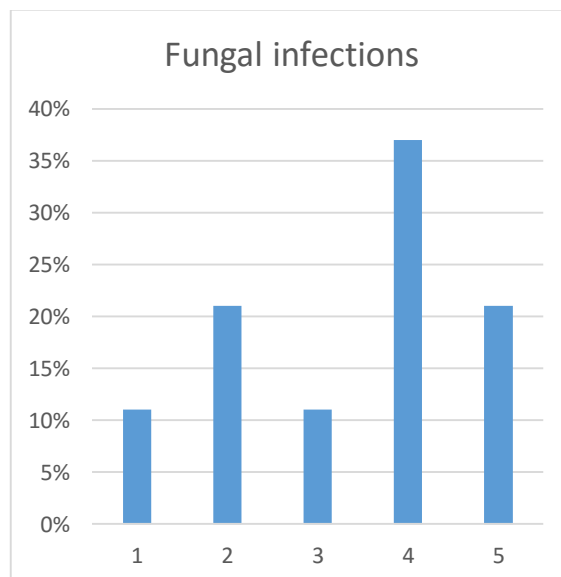


Fig 15. understanding of the pathophysiology and nursing care of patients suffering from fungal infections

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above, the results shown that 5% were at excellent level, 32% were at very good level, 11% were at good level, 21% were at fair level and 11 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from fungal infections.

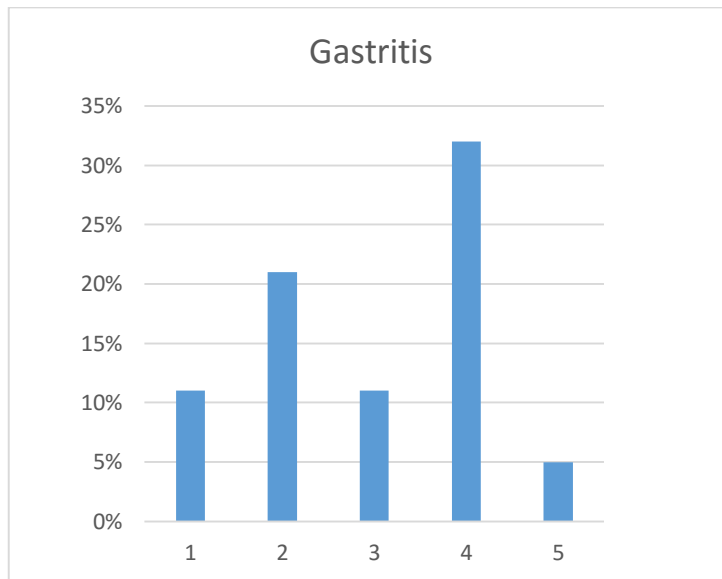


Fig 16. understanding of the pathophysiology and nursing care of patients suffering from Gastritis

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good ; 5. Excellent

From the figure above, the results shown that 5% were at excellent level, 32% were at very good level, 11% were at good level, 21% were at fair level and 11 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from gastritis.

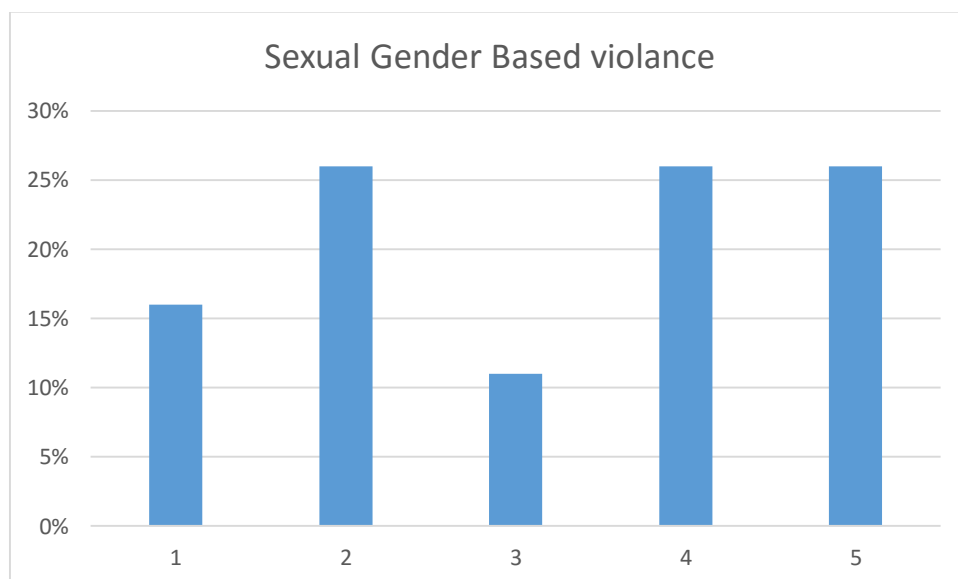


Fig17. understanding of the pathophysiology and nursing care of patients victim with Gender based violence.

Legend: 1. Insufficient, 2. Fair; 3. Good, 4. Very good; 5. Excellent

From the figure above, the results shown that 26% were at excellent level, 26% were at very good level, 11% were at good level, 26% were at fair level and 16 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for victims with gender based violence.

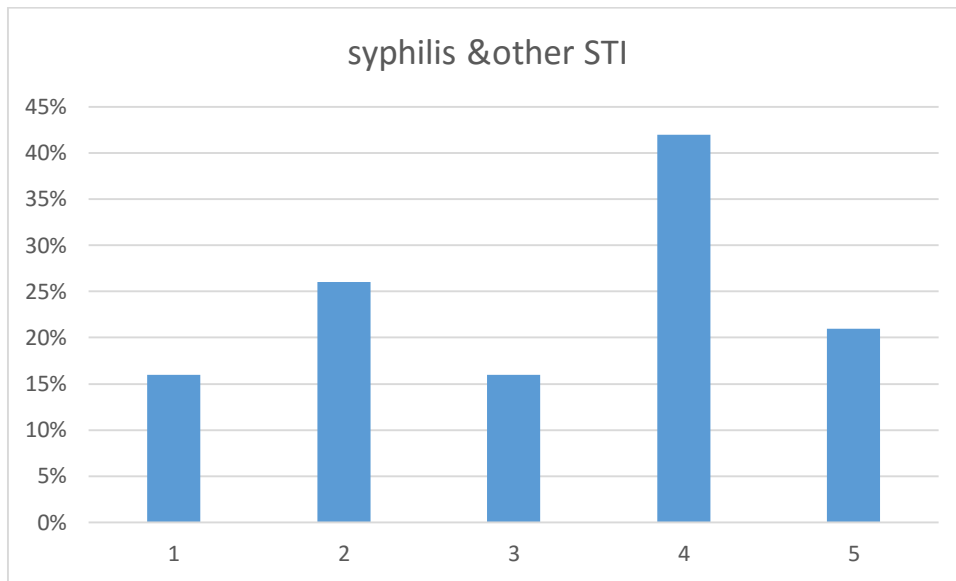


Fig.18. understanding of the pathophysiology and nursing care of patients victim with syphilis and other STIs.

Legend: 1. Insufficient, 2. Fair; 3. Good , 4. Very good ; 5. Excellent

From the figure above, the results shown that 21% were at excellent level, 42% were at very good level, 16% were at good level, 26% were at fair level and 16 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for victims with syphilis and other STIs.

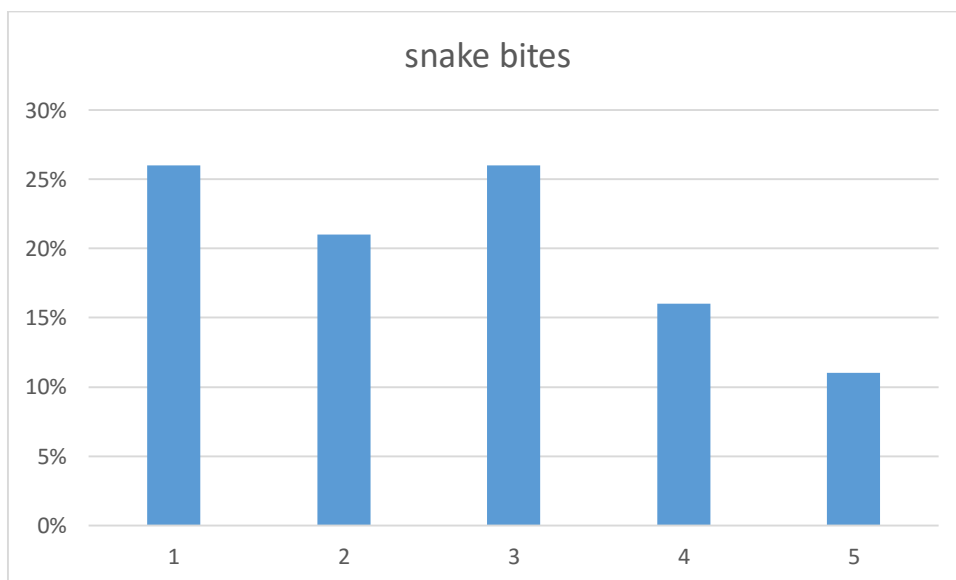


Fig19. understanding of the pathophysiology and nursing care of patients with snake bites.

Legend: 1. Insufficient, 2. Fair; 3. Good , 4. Very good ; 5. Excellent

From the figure above, the results shown that 11% were at excellent level, 16% were at very good level, 26% were at good level, 21% were at fair level and 26 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for victims with syphilis and other STIs

5. Discussion

Based on findings, high number of respondents 39% reported that they had a very good understanding, followed by 21% who had excellent understanding, 16% had good understanding, 16% had fair understanding and 11 % insufficient understanding of pathophysiology of anemia and nursing care provision for the patients suffering from anemia. The similar study conducted in Australia shown that the Nurses who had participated in formal training around iron deficiency(anemia) in the last 5 years demonstrated a significantly higher knowledge score (4.2 ± 2.1) compared with those who had not or were not sure about their formal training status (3.7 ± 1.9 , $p=0.035$). Knowledge around the understanding of functional iron deficiency or anemia was limited¹³

Our results indicate that high number of nurses aids are knowledgeable about understanding of the pathophysiology and nursing care provision for the patients suffering from HIV and opportunistic infection as 26% were at excellent level, 21% were very good , 16% were good only 26% were fair and 11% were at insufficient level this reflects to the results of the similar studies conducted in “HIV/AIDS: an exploration of the knowledge, attitude, infection risk perceptions, and willingness to care of nurses “shown that The mean score for HIV/AIDS knowledge was 79.6%, with knowledge related to disease transmission pathways earning the highest score and knowledge related to HIV/AIDS protective measures earning the lowest. Participating nurses with higher knowledge scores held a more positive attitude toward HIV/AIDS ($p < .001$), a lower perceived risk of HIV/AIDS infection ($p < .001$), and a higher willingness to care for HIV/AIDS-positive patients ($p = .001$). In addition, those participants who had received in-service HIV/AIDS education training earned higher willingness-to-care scores ($p = .046$)¹⁴.

It is clear from the findings of this review and from additional studies that the understanding of the pathophysiology and nursing care provision for the patients suffering from wound is limited as the results shown that 16% were at excellent level ,32% were at very good level ,11% were at good level, 26% were at fair level, and 11% were at insufficient level in terms of. The same results were found in the study conducted in Scotland to be the case both in the generic sense but also in more specific areas of wound care practice (e.g. pediatrics)¹⁵. In our study it has been shown that high number of nurses-aids were knowledgeable about the pathophysiology and nursing care provision for patients suffering from gastro-enteritis as reported 26% were at excellent level, 37% were at very good level, only 5% were at good level and 16% were at fair level and 16 % were at insufficient level in understanding the pathophysiology and nursing care provision for patients suffering from gastro-enteritis.

The study conducted in Brazil shown that The nursing experience in the care of patients with meningitis, in the emergency sector, was shown to be permeated by the accomplishment of interventions, feelings, and knowledge about the symptoms¹⁶, the version of our study shown that high number of nurse aids were equipped in terms of understanding of the pathophysiology and nursing care provision for patients suffering from meningitis as 16% were at excellent level, 37% were at very good level, 10% were at good level, only 16% were at fair level and 21 % were at insufficient level .

The results from this study also shown that 5% had excellent knowledge, 32% had very good knowledge , 11% had good knowledge , 21% had fair knowledge and 11 % had insufficient knowledge in terms of understanding of the pathophysiology and nursing care provision for patients suffering from fungal infections those findings reflects to the results of the study conducted about Assess knowledge regarding Fungal infections among adolescent girls in selected area of Kollam located in **southwestern India** : The data reveals that 3% of the sample had excellent knowledge, 53% had good knowledge ,37% had average knowledge and 7% of the sample had poor knowledge when they were tested by using a knowledge questionnaire¹⁷.

It has been obviously found in this study that 5% were at excellent level, 32% were at very good level, 11% were at good level, 21% were at fair level and 11 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for patients suffering from gastritis these findings are almost similar with the results from the study to assess the knowledge on gastritis among 2nd year B.Sc nursing students in Sree Balaji College of Nursing, Chennai by which The result revealed that 2(3.4%) had adequate knowledge, 34(56.6%) of students had moderate adequate knowledge and 12(24%) had inadequate knowledge about

gastritis, which throws light on need for arrangement of special classes for the students and also need for assessing the students periodically¹⁸

From the figure above, the results shown that 26% were at excellent level, 26% were at very good level, 11% were at good level, 26% were at fair level and 16 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for victims with gender based violence. This has been found in the study conducted in Rwanda “healthcare workers’ knowledge on gender based violence and utilization of services in kacyiru sector, RWANDA” The findings revealed that 45.4% have average (medium level) knowledge about the concept of gender violence, 36.2% have low level of knowledge, while 18.4% have a high level of knowledge. Majority have low level of confidence in their practice (56.3%)¹⁹

It has been shown that 21% were at excellent level, 42% were at very good level, 16% were at good level, 26% were at fair level and 16 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for victims with syphilis and other STIs. According to the study “Health students’ knowledge of sexually transmitted infection and risky behaviors before participation to the health promotion program” revealed that Overall, 180 HS (83.3%, 95% CI 78–88) had a good knowledge of HIV transmission modes. However, 13 Health Students (6%) believed that there was a risk of HIV transmission by kissing²⁰.

It has been found that 11% were at excellent level, 16% were at very good level, 26% were at good level, 21% were at fair level and 26 % were at insufficient level in terms of understanding of the pathophysiology and nursing care provision for victims with snake bites, in the study conducted about “Assessment of knowledge about snakebite management amongst healthcare providers in the provincial and two district hospitals in Savannakhet Province, Lao PDR” its results revealed Among 119 participants, 27.7% and 45.4% had an adequate knowledge of snake identification and management of snakebites, respectively. Approximately 59% could correctly identify symptoms of envenomation, and 19.3% expressed confidence in treating snakebites. Study participants who had received training achieved significantly better snake identification results compared to those without training, with an OR of 2.54 (95% CI: 1.02–6.28)²¹

6. Recommendations

The researcher recommended the trainers to provide the following training to the Boguila nursing staff:

Training provision on pathophysiology of measles and its management.

Training provision on the HIV pathophysiology and nursing care of patients suffering from HIV and opportunistic infection, sexual transmission infection, gastritis, snake bites, syphilis, fungal infections, meningitis, anemia.

7. Conclusion

The present study was aimed to assess the healthcare provision in understanding the diseases pathophysiology and patients ‘nursing care provision at Boguila health facility, in Central African Republic. Overall, the findings of this study provide important insights into understanding the level of knowledge of nurses-aids from Boguila health center in understanding the pathophysiology of the diseases and patients ‘nursing care provision for top diseases found in that health center. The study concluded that most of nurse-aides had limited knowledge in understanding pathophysiology and patients ‘nursing care provision related to mentioned diseases. This study was limited to exploring the level of nurse-aids to understand the diseases pathophysiology and patients ‘nursing care provision at Boguila health facility however it may not give a whole or total picture(topics) in details that nurse-aides’ need to improve their knowledge in terms of understanding pathophysiology and patients ‘nursing care provision. The investigators propose future studies to mention those topics in order to provide specified training to the healthcare team of Boguila project.

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How to cite/reference this article: Charles Twagirayezu, Mitti Richard Kasopa Anastazio, Bwalya O. Ibrahim, Healthcare Provision in Understanding the Diseases Pathophysiology and Patients' nursing Care A Case Study of Boguila Health Facility in the Central African Republic, *Asian. Jour. Social. Scie. Mgmt. Tech.* 2024; 6(4): 77-90.