UNIVERSITY of RWANDA

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IMPROVEMENT OF NURSING CARE PLAN DOCUMENTATION IN SURGICAL WARD AT KIBOGORA LEVEL TWO TEACHING HOSPITAL

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTER'S DEGREE OF HOSPITAL AND HEALTHCARE ADMINISTRATION (MHA)

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DECLARATION

I, Nyirangeri Pierrine, declare that this capstone dissertation entitled "**Improvement of nursing care plan documentation in surgical ward at Kibogora Level Two Teaching Hospital"** is submitted in partial fulfillment of the requirements for master's degree of Hospital and Healthcare Administration (MHA) at the University of Rwanda, College of Medicine and Health Sciences, School of Health Sciences. It has never been presented to any institution for evaluation nor previously published.

Supervisor's Declaration

I confirm that, to the best of my knowledge:

- The study was carried out and the dissertation was prepared under my direct supervision
- The study was conducted in accordance with the degree regulations
- The capstone dissertation represents the original work of the candidate
- The contribution made to the study by me, by other members of the supervisory team, by other members of staff of the university and by others was consistent with normal supervisory practice
- External contributions to the research are acknowledged

Supervisor, _____ Date _____

Candidate's Declaration

- This capstone dissertation is my own work
- The contribution of any supervisors and others to the research and to the capstone dissertation was consistent with normal supervisory practice
- External contributions to the research are acknowledged

Candidate _____ Date _____

DEDICATION

My dissertation work is dedicated to my family members and friends. It is also dedicated to my colleague nurses at Kibogora Level Two Teaching Hospital in Surgical ward who have supported me throughout the process. My dissertation is also dedicated to my supervisors. I will always appreciate all they have done, especially for helping me in my writing skills and for the many hours of proofreading. I highly dedicate my work to my husband and special thanks are addressed to him for his guidance, encouragement and moral support during the whole academic program. From the bottom of my heart I really appreciate your effort for the success of this dissertation.

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May the Almighty God bless you all abundantly.

ABSTRACT

Background

Nursing care plan is a process by which nurses identify patient's problem and determine their needs to be addressed. The high level of undocumented nursing care plan has been pointed out by evaluation of accreditation done by the Ministry of Health. It was reported that only 40% of nursing care plan were documented. The objective of the project was to improve the rate of documentation of nursing care plan in surgical ward of Kibogora Level Two Teaching Hospital from 40% to 85%.

Methods

The study was done in surgical ward of Kibogora Level two Teaching Hospital. The study was conducted from July 2021 until March 2023.The researcher conducted pre intervention assessment and a post-intervention study to determine the result of the implementation of nursing care plan documentation. In pre-intervention assessment of 261 files were audited as sample size selected randomly from 747. The possible root causes were identified through the fishbone. The root cause analysis was conducted and it was found that lack of training, shortage of the staff nurses and computers are the most leading causes. Intervention was done through training about documentation of nursing care plan and advocacy was done to increase the number of nurses and computers. In post intervention 209 files were randomly selected from 438 files to analyze the impact of intervention on documentation of nursing care plan.

Results

After intervention, the overall nursing care plan documentation is improved from 40 to 80.8%. It shows that nursing assessment was completed at 85.6%, nursing Diagnosis completed at 85.1% and Nursing objectives completed at the level of 84.4%. Nursing intervention at the level of 84.4% and Nursing Evaluation were documented at 80.8% respectively. The contributing factors to the improvement are staff training, increase of staff nurse, increase of computers and more supervision.

Conclusion and recommendations

The findings indicate that staffs training on nursing care plan and regular supervision improve the level of documentation of nursing care. It is recommended to the hospital to use the same strategy to improve nursing care plan documentation in other department of the hospital.

Key words: Nursing care plan, Documentation, Kibogora Level Two Teaching Hospital

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List of acronyms and Abbreviations

CMHS: College of Medicine and Health Sciences

DAF: Director of Administration and Finance

DG: Director General

DNM: Director of Nursing and Midwifery

KLTTH: Kibogora Level Two Teaching Hospital

MHA: Master of hospital and Health care Administration

MOH: Ministry of Health

NCP: Nursing Care Plan

PhD: Doctor of Philosophy

Prof: Professor

RBC: Rwanda Biomedical Centre

RCA: Root cause Analysis

SPSS: Statistical Package for the Social Sciences

UR: University of Rwanda

VCT: Voluntary Counseling and Testing

Definition of key terms

Nurse: A nurse is medical personnel who take care of sick people or any other people with health-related problems. A nurse is registered and licensed by a related health care organization or council. A nurse may work in public or private sector either independently or under the supervision of Physician or another specialized health personnel (2).

Nursing: Nursing is a process of activities which provides autonomous and collaborative care of people with different ages, gender, families, groups and communities. Nursing process is involved in health promotion, prevention, treatment and management of sick persons but also it plays an important role in rehabilitation of disabled people in all settings (3)

Care: Care is concerned with all required activities to improve the quality of life including wellbeing of any living subject (2).

Plan: Plan is provision of detailed activities, materials and resources required to achieve an objective (2)

Nursing care plan: Nursing care plan is a formal process which is used to determine what the needs and provide possible solutions. It is a good channel of communication between medical personnel and other health care providers in order to achieve the desired outcomes (5).

CHAPTER ONE: INTRODUCTION

1.1 Background

Nursing care plan is a process by which a nurse assesses, plans, implements and evaluates the effect of care provided. It is the basis of nursing care to be given to the patient in need (21). However, in different countries worldwide nursing care plan is not well documented (5). According to the literature there are many reports of poor nursing care plan in England (4). A study carried out in Ghana highlighted that, Nursing care plan could not be done by nurses; instead, nursing care is done based on what they perceived the patient needed at the consultation time. In Iran, shortage of medical personnel including nurses (72.7%), lack of time due to heavy work (57.1%) and fatigue (54.5%) have been reported as the most leading factors contributing to poor nursing documentation (5). Inadequate nursing care plan documentation was revealed in the study conducted in Ethiopia (47.8%) (6). In Rwanda, it was reported that nursing care documentation still need improvement and has to be taken into consideration to improve health care delivery (22). At Kibogora Level two teaching Hospital, the accreditation inspection highlighted that nursing care documentation is still at low level of 40% (1).

The project related to improvement of nursing care plan documentation was carried out at Kibogora Level Two Teaching Hospital (KLTTH) which is located in Western Province, Nyamasheke District. KLTTH covers 266352 population from 13 health centers and 15 Health posts (1). KLTTH was established in 1945 as a missionary dispensary and by then it had two qualified nurses treating more than 200 patients per day. Since 1960's it became a full hospital and by 1970 it improved to 110 beds (Kibogora Hospital Report, 2020).

KLTTH is run by Free Methodist Church in Rwanda and it is located in south west of Rwanda on the shores of Lake Kivu. Currently, It has a capacity of 285 beds with 91% bed occupancy (1).

KLTTH accommodates between 200 and 220 hospitalized and between 140 and 220 consultations as outpatients every day. KLTTH conduct an average number of 2,400 mother deliveries, and an average number of 4,000 surgeries are being done annually. In addition, KLTTH is specialized in Endoscopy and an average of 700 gastroscopies are done per year. The Hospital staffs is 251 in total (17 Doctors, 84 nurses, 20 midwifes, 5 allied health professionals, Data manager, Planner, 6 Supervisors of Health Centers, Customer care and 96

support staff from administration) by December 2020. The surgical ward receives 8 new patients on average per day and operates 24 hours a day, 7/7 days. The ward provides basic and advanced surgical procedures which are performed by Permanent and part - time Specialists and General practitioner (1).

Research has shown that, nursing care standards are on the decline due to poor nursing care practice (2). On the other side, all nursing care plan should be recorded and documented to make sure that there is a good communication and collaboration between health workers but also to provide safety of the patient and provide a high quality of care (5).

1.2 Problem statement

From the Evaluation by accreditation team, it was observed that there is high rate of undocumented nursing care plan in surgical ward of KLTTH. Only nursing care plan was documented at the level of 40%. It was reported that most of patients' files do not contain the nursing care plan and the reason behind is not clearly identified. When nursing care plan is not documented, there are some consequences either on patients but also on Health care professionals. The consequences of Undocumented nursing care plan include poor communication between nurses leading to incorrect treatment, poor decisions making compromising patient safety (3). As nurses work in shift, the coming nurse may not be able to recognize what nursing care was done by the leaving nurse, so difficult to know where to start. This might have an impact on the patient's care as he/she may miss some nursing care which could be helpful on the illness of the patient. Resolution of undocumented nursing care is crucial (8). The nursing care plan is the key point to identify priorities of the patient based on the needs (3). After identification of the problem, the researcher conducted a meeting with the staff nurses to assess why nursing care plan is not well done and to see how it can be improved. All nurses agreed that lack of time due to high workload of healthcare workers, lack of training, inadequate knowledge, overcrowding of patients resulting to high bed occupancy rate are the major causes contributing to incompleteness of nursing care plan. It is from the above context that the researcher was motivated to conduct a study on documentation of nursing care plan.

1.3 Hypothesis

- Ho: staff training will not improve the documentation of nursing care plan
- Ha: staff training will improve the documentation of nursing care plan

1.4 General objective

- To improve the rate of documentation of nursing care plan in surgical ward of Kibogora Level Two Teaching Hospital from 40% to 85% from November 2022 to March 2023

1.5 Specifics objectives:

- To increase knowledge on how to document nursing care plan in surgical ward
- To improve the quality and quantity of nursing care plan documentation

1.6 Justification of the project

According to the Ministry of Health in Rwanda, Documentation of nursing care plan is the pillar of health care service delivery. In addition, poor documentation may lead to delays in diagnosis, treatment, inappropriate treatment and omission of care (6). In Health care facilities, Nursing care plan has been pointed out as the standard in need special improvement compared to other standards. In addition, it is considered as the key point of nursing practice (22). It is used to maximize the quality-of-service delivery. It also serves as means of communication between health professionals including nurses, physician, surgeons, etc…. Nursing care plan is a good approach aiming at involving decisions making towards the patient's benefits (8). The surgical ward of Kibogora Level Two Teaching Hospital was chosen for the study because it was the most pointed out by the Accreditation inspection for having a high rate of undocumented nursing care plan.

1.7. Organization of the dissertation

The current dissertation is divided into six main chapters. Chapter one focuses on the setting of the study and its background. Chapter two concentrate on the literature review related to the documentation of nursing care plan worldwide. Chapter three indicates the methodology used from the beginning of the study until the availability of this report. it includes methods and techniques used in collection and analysis of the obtained data. Chapter four presents the findings. Chapter five is concerned with the discussion of the results while chapter six indicates the drawn conclusion and recommendations addressed to stakeholders.

CHAPTER TWO: LITERATURE REVIEW

2.1 Definition and Historical background of nursing care plan

A nursing care plan documents the process used determine what the patient need and helps to provide a holistic care based on the five-step of nursing care plan including nursing assessment, nursing diagnosis, nursing objectives, nursing intervention and nursing evaluation (21). A nursing care plan facilitates communication and collaboration between nurses, patients and other medical personnel (4). Nursing care plan was firstly used by Ellen L. Buell. This was a nurse in public health. In addition, Ellen was instructor at Syracuse University, NY in the 1930s and 40's (21). Then later in 1955, Lydia Hall introduced the new version of nursing care process. Lydia determined the three steps of the nursing process such as observation, administration of care, and validation (21). According to Lydia, Nursing is described as fostering the behavioral functioning of the client (23). Then 6 years later in 1961, Ms. Johnson also revised the Lydia's version and came up with a revised new version of the nursing process which again included the three steps known as assessment, decision, and nursing action (21). Finally, in the same period in 1961, Ida Jean Orlando-Pelletier introduced the version of the nursing process known to nurses today. The new version of Ms. Orlando-Pelletier includes five steps including Assessment, Diagnosis, Planning, Implementation, and Evaluation (21). In 1967, other experts in nursing including Yura and Walsh described the nursing care plan in four steps which included Assessment, Planning, Implementing and Evaluating where assessment and diagnosis are considered as a single step (22). Nowadays, the nursing care plan is defined as an approach used to solve problems by assessing the patient, making the diagnosis, planning for intervention, implementing activities and evaluating the outcome of interventions. Nursing care plan is important for identification of the need, prevention and treatment of any health related problems in order to promote a wellbeing of the human body (23).

2.2 Benefits of nursing care plan

A nursing care plan is used to give orientation on different type of nursing care needed by the patient or family members as well as the community. Nursing care plan mostly focused on standardized, evidence-based and holistic care. To be more effective, it should give continuity of care, in a safety way with high quality of care and compliance. Through nursing care plan all effectiveness assessed and interventions should be recorded and documented appropriately. It is mostly used to promote the level of documentation but also it is serves as

the reimbursement of service delivered (7). The main objective of the nursing care plan is to provide the standard of care by assessing patients and creating plans of action. In addition, it protects nurses legally, and it facilitates the promotion of care to be given systematically (21). Furthermore, once NCP is properly documented, job satisfaction for medical personnel is highly achieved and self-efficacy is raised up (23).

Both patients and nurse benefit from nursing care plan documentation (28). For the patient there is a logical continuity of care where care is given in steps. It prevents omission and duplication of care and increases participation of the patient and family. For the nurse there is Job satisfaction, interest in learning, increase of self-confidence, health workers assignments, practice done in accordance to standards. For the Profession, collaboration is improved and helps people to understand the work of nurse staff. Nursing care plans promotes communication between medical personnel about patient's health condition (28). Integrating nursing care plan documentation into the daily activities of the work in health care setting instead of taking it as single different document or as different task improves the perception level of its value for both patients and service providers (28).

Nursing care plan indicates a continuity of health care service delivery in the patient's record (23). The care plan is a document were completed which identifies the care to be provided. In addition, it shows the planner and the provider of service (22). It serves as a good orientation to provide care in continuity as nurses work in shift. Idias and activities are done in chronological order starting from the assessment phase until the evaluation phase even if it is done by different nurses through handovers (23).

Nurses are required to use integration of assessment, documentation and evaluation of the nursing plan of care for all patients in need of nursing process. The format used for nursing care plan documentation are different from one Health facility to another but what it is important is to include a list of problems identified from the assessment, the drown diagnosis, goals and activities planned for intervention, expected outcome and the approach for implementation as well as evaluation of the outcome (28).

2.3 The five steps of the nursing care plan

Evidence based practice is the corner stone in nursing care plan which includes five-steps allows nurses to think holistically about their patient's needs. During the plan a nurse must use clinical judgment to create a general plan for the day (5).

The nursing care plan allows the nurse to set goals based on the received information but also based on the priorities of the patient. With more experience, the nursing care plan process becomes natural in decision making for patient care (8). The 5 steps include Assessment phase, Diagnosis phase, planning phase, Intervention phase and Evaluation phase (8). The assessment phase includes looking at any subjective and objective data collected in the patient's history. Subjective data could be information a nurse got during nursing hand-over (9). What a Nurse does during the assessment phase is gathering all of this information and make assessment about what is going on. The nursing assessment starts before seeing the patient, but continues throughout the shift (9).

Once the assessment phase is completed, its findings are used to determine some nursing diagnoses which might be taken into consideration when planning for care. From the judgment of nurse staff, nursing diagnosis may be different from medical diagnosis but they complete each other for the success of patient care. Setting the priority is the key point in nursing diagnosis phase to address the needs of the patients (10). Maslow's hierarchy of needs is taken into consideration for prioritization as the patient may have many different problems to address (11). Any information received about the patient may help to anticipate challenges which may arise (10).

After identification of the diagnosis, the planning phase is of crucial importance. Action plan is documented by listing all required activities and timeline in order to achieve the outcome towards the benefit of the patient. Some goals are generated and they should be specific, measurable, achievable, and realistic within the timeline (10). It is advised to set short term goals which can be evaluated within a limited time such as shift by shift but finally which will help to achieve long term goals (11). During the implementation phase, the action plan with suggested intervention activities is implemented to achieve the expected outcome (11). Evaluation phase is the corner stone of nursing care plan as it helps to evaluate the effect or impact of the intervention provided. Evaluation is conducted to assess at what level the goal has been achieved. Evaluation plan as well as indicators are set in advance to ensure that evaluation is successful without any bias or errors (12).

2.4 Level of documentation of nursing care plan

Many studies conducted in England found that there is poor nursing care (4). Another study done in Ghana reported that, nurses were not able to plan for Nursing care; instead, nursing care was given with reference to what the patient needed at that time.

In Iran, personnel shortage (72.7%), lack of time(57.1%) and fatigue (54.5%) was reported to be as the most contributing factors influencing poor nursing documentation (5). The study conducted in Ethiopia found that practice nursing care documentation was inadequate (47.8%) (6).

According to a study conducted on the implementation of nursing care plan in Low-income countries it was found that, nursing care plan implementation was influenced by several factors divided into two categories including individual and management factors (25). Individual factors include poor knowledge of medical teaching staff from the concept of nursing care plan and consequently poor learning by students and nurses. Furthermore, lack of willingness to implement nursing care plan in the clinical practice due to low knowledge is another individual factor (23). Management factors include insufficient infrastructures and equipment for the implementation of nursing care plan, poor knowledge in computer use, high volume of workload, shortage of nurse staff, lack of in- service training in health care facilities, lack of supervision, lack of accountability for the documentation of nursing care plan and lack of support from the healthcare institutions (23).

Nursing theory is the base of nursing care plan which is mostly learnt from nurse education. It includes different approaches of nursing theory and practice (20). However, due to different circumstances it may be to practice care planning documentation (22). Care planning documentation is an important tool to identify all problems of the patient and plan for interventions to solve these problems. Care plans are of big value when kept as the written records (2). Essentially, care planning is the action, while a care plan is a record of that action.

Nursing care plans is based on the assessment of the patient needs instead of focusing on the systematic approach (22). The nursing care plan uses the holistic approach including all aspects of the human body such as social, physical, psychological and spiritual needs to provide a good quality of care (7). The literature indicates that the majority of nurses (96%) reported that through nursing care plan documentation might increase the ability of nurses in provision of high quality of healthcare. However, only 16% of the evaluated files had evidence of care plan documentation (8). The study conducted in Rwanda at the teaching hospitals on 2015. The main challenges and barriers reported are lack of training, lack of knowledge and skills, unavailability of evidence-based practice and shortage of nurses compared to the work (23).

2.5 Interventions and efforts to improve nursing care plan documentation in Rwanda

Different strategies have been implemented by the Ministry of Health in Rwanda not only to reinforce the health system in the country but also to establish the appropriate standards. To achieve this objective accreditation program was initiated. (1). Once all records are documented it will facilitate the diagnosis and treatment of the patient. In addition, it easies communication between medical personnel, it improves patient safety but also decreases medical errors (14). Education and training is a good model of clinical documentation and it has shown improvement of the quality and accuracy of clinical records. Furthermore, it increases awareness of medical staff and the importance of good documentation (5).

CHAPTER THREE: METHODOLOGY

3.1 Design of the study

The current study used a pre and post interventional study design to evaluate the impact of the intervention. The pre-intervention phase was conducted for a period of 3 months starting from July to September 2021. A team was formed to collect the data related to nursing care plan documentation at KLTTH specifically is surgical ward. Then, an evaluation was done to identify the magnitude of the problem which has been used as a baseline data. Furthermore, the root cause analysis was taken into consideration and was conducted by the project team under coordination of the main researcher. After identification of the root cause, the next step was to plan for intervention and its implementation was done under the supervision of the main researcher. Once implementation of the intervention started, it entered and continued as a part of the hospital daily activities. The impact of post intervention was evaluated in March 2023.

3.2 Root cause analysis

3.2.1 Magnitude of the problem

Through Evaluation of the surgery ward by accreditation evaluators, it was recommended that care plan in surgery ward should be improved (1). In addition, the researcher revealed the problem of high rate of incomplete nursing care plan when passing through the files of the patients. Sometimes as a team of surgery ward, we see that the nursing care plan is not done at all, or it is done partially or it is done but its quality is not productive. According to Banamwana who conducted a study in Rwanda about documentation of nursing care plan, it was reported that 96% of nurses agreed that nursing care plan documentation may increase the ability of nurses to give a good quality of care. However, only 16% of the analyzed files had nursing care plan well documented(13). When the nursing care plan is not well done it may have a negative effect on the quality of healthcare as they will be no clear report during the nursing shift.

Measurement of the magnitude of the problem was done through observation and through a questionnaire addressed to nurses in surgical ward. The tool was developed after extensive search and finds that there is no existing tool. Data collection was done for a period of 3months; July, August and September 2021. Every morning, the researcher checked all file of the patients to assess if care plan was done or not for the previous day and night.

Data collection tool have been in form of a table with headings, assessment, diagnosis, objectives, intervention and Evaluation. For each step of nursing care plan data was collected with 3 options either the step is not documented (0), fully documented (1) or partially documented (2). It was found that Nursing care plan was completed at the level of 40%. After data collection and analysis of the dataset the researcher proceeded with root cause analysis to know the reasons related to undocumented nursing care plan. A questionnaire was addressed to all nurses in surgical wards to identify causes of high rate of undocumented nursing care plan. All information received from the files and from nurses were captured through the designed data collection tool. After data collection, the data were analyzed. The collected data helped to identify challenges experienced by nurses in completion of nursing care plan. Then some suggestions and recommendations were drawn in order to improve the completion of nursing care plan in surgical ward.

The study done by Banamwana and Smith reported that there is a need to increase awareness related to the benefit of nursing care plan documentation and evidence-based practice between nurses and other health professionals (7). It is expected that knowledge and skills through training may improve the use of care plan documentation (7).

3.3 Sample

The data was obtained by consulting both the registry and files of patients admitted in Surgery wards since the 1st July until 30 September 2021. During this period 747 files were identified as new patients and were taken as the population of the study. From the population a sample size of 261 was obtained by the use the Yemen's formula.

$$n = \frac{N}{1+N(e)^2}$$

Where **n** stands on behalf of the sample size, **N** is for the Population and e stands for marginal error.

$$n = \frac{747}{1+747(0.05)^2} = 261$$

For the post intervention, the same formula was used to determine the sample size.

Where **n** is for the sample size, **N** stands for Population and e for marginal error.

During the period of evaluation 438 files were identified as the population (N=438)

$$n = \frac{438}{1+438(0.05)^2} = 209$$

3.4 Sampling technique

A simple random sampling method was used to select files for both pre and post intervention evaluation.

3.5 Data collection method

A small, focused team helped to collect the data. Members included nurses of surgical ward. All nurses are more involved in the patient's right, and more involved in surveys to get information related to perception of services by patients and care givers. Typically, the same team conducting the situation analysis were also involved in the root cause analysis.

Data collection was done at Kibogora Hospital in Surgery ward. The researcher used Tally sheet and fish bone diagram and questionnaire for collecting data to verify the root cause. The data collection was done for a period of one month. All nurses working in Surgery ward were requested to voluntarily participate in the study. An information sheet was provided to participants and they were assured about confidentiality.

Participation was voluntary. For the purpose of ensuring anonymity, participants were advised to complete the survey form without any indication of names or any other mark. Participation consent form was signed by participant who voluntarily accept to take part of the study. A developed structured question was distributed to all participants for self - completion. Then after completion, the researcher collected questionnaires to proceed with data analysis.

3.6 Identification of the root cause

3.6.1 Completion rate of Nursing Care Plan

Table 3. 1: Presentation of the results for completion rate of Nursing Care Plan (n= 261)

Steps of Nursing care plan	Fully documented (%)	Partially documented (%)	Not documented (%)	Total
Nursing Assessment	112(42.9%)	9(3.4%)	140(53.6%)	261
Nursing Diagnosis	114(43.7%)	7(2.7%)	140(53.6%)	261
Nursing Objective	113(43.3%)	6(2.3%)	142(54.4%)	261
Nursing Intervention	102(39%)	19(7.3%)	140(53.6%)	261
Nursing Evaluation	24(9%)	11(4.2%)	226(86.6%)	261

The results in table 3.1 about high rate of undocumented nursing care plan in surgical ward indicates that 53,6% of both nursing assessment and nursing diagnosis were not documented at all. Nursing objective and nursing intervention are not documented at the level of 54,4% and 53,6% respectively while Nursing Evaluation is only documented at 9,2%. The baseline results show that the problem of High rate of undocumented nursing care plan in surgical ward is of big concern on service delivery. Documentation is a good way of communication between health professionals and it serves as a handover approach. Poor documentation leads to poor health care. During the situation analysis, the information received was used to identify possible causes of high rate of undocumented nursing care plan in surgical ward.

The brainstorm causal factors for the problem of high rate of undocumented nursing care plan included:

1. Heavy workload of nurses,
2. Lack of time
3. Shortage of staff and inadequate hand over,
4. behavior and lack of accountability
5. lack of knowledge on the importance of completeness of nursing care plan
6. Lack of close supervision by in charges
7. Lack of training on how to complete nursing care plan
8. Staff not oriented to the policy and procedures
9. Insufficient of equipments; eg: Computers, network

Seven possible root causes that were suggested by staff through brainstorming as a barrier of undocumented nursing care plan were summarized in the fish bone diagram (Figure1).

Fish bone Diagram

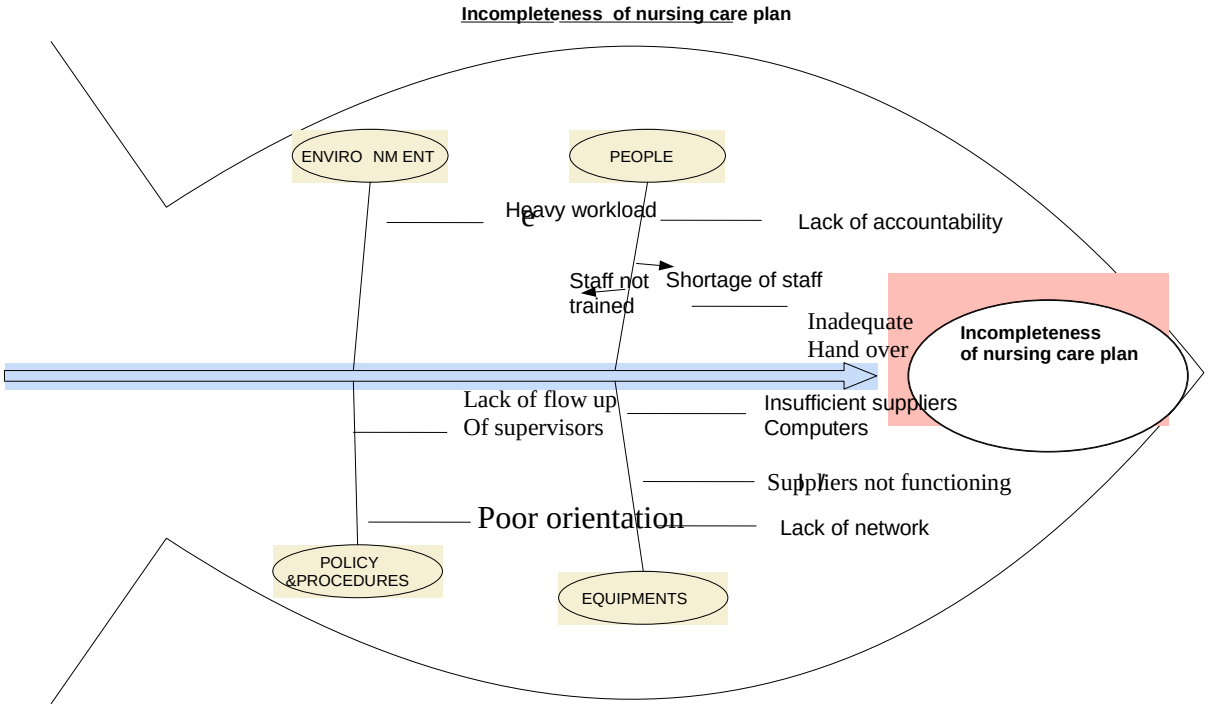

Figure 3. 1: Fishbone for all possible root causes on incompleteness of nursing care plan

3.6.2 Verification of root causes

To find root causes or the primary sources of the High rate of undocumented nursing care plan, the researcher started with the leading causal factors and the researcher was interested to know the reason behind. Root causes might mostly be found in the most leading causes. For the researcher, it was necessary to go deep until almost all responses have been listed.

3.6.2.1 Availability and functionality of equipment (Computers)

Within the surgical ward there are only 2 computers while all documentation should be done electronically. Shortage of Equipment is observed.

3.6.2.2 Shortage of the staff

The surgical ward of Kibogora Level Two Teaching hospital has 12 nurses including one who is acting as the in charge of the ward. The eleven Nurses are divided into 3 groups. Along 24 hours; group 1 works during the day shift, group 2 works at night shift and group3 is off duty. 5 nurses work during the day, 3 nurses during the night and 3 remaining are off duty.

The surgical wards is divided into 5 sections including Men's ward, Female's ward, Intensive care unit, Dressing unit and Billing unit. Considering the number of patients admitted in surgical wards, considering the number of units and activities to be done, it is observed that there is a shortage of staff nurses. The standards nurse patient ratio is 1:7 but at Kibogora the ration is around 1:28.

3.6.2.3 Nurses knowledge on documentation of Nursing care plan

Although, all nurses have a high level of education, 50% are trained at Advanced Diploma Level and 50% trained at Bachelor's level. They have reported that they still have a gap about documentation of nursing care plan either due to lack of training when at school or due to lack of refresher training after recruitment. This may be taken as the root cause.

3.6.2.4 Environment

The surgical ward has 42 beds with very limited space while sometimes it can accommodate more than 70 patients. This leads to overloading of the ward where two patients may be on one bed with caregivers. The clouding of the ward may have impact on the documentation of

3.2.3.4.1. Lack of supervision

During data collection period, it was found that the supervision system is in place in surgical ward for 24 hours/7days. during a day head of department is supposed to check for completeness of all file for day shift and for night shift; in addition to that head of department make a monthly task assignment and delegate one team leader in each shift to make a daily task assignment and make a follow-up of these tasks so that they must be responsible and accountable of their performed task. However, due to many responsibilities, supervision is not done regularly and the supervision from the Administration is rare. So, this may be the root cause of poor documentation of nursing care plan.

3.6.3 Root cause analysis Result

Root cause analysis (RCA) was conducted to discover the root causes of problems in order to identify appropriate solutions. A structured questionnaire was given to 12 nurses working in Surgical ward. They had time to complete the questionnaire and then return them back for analysis. The questionnaire asked about demographic information and reason for undocumented nursing care.

3.6.3.1 Socio-Demographic characteristics of surgical ward staff

The table 3.2 helps to verify the root cause related to the knowledge of nurses based on their level of education as well as their working experience. It shows that Nurses at KLTTH are adults enough with a high level of education and enough working experience.

Table 3.2 shows that 33.3% of nurses who work in surgery ward are still young aged between 20 and 30 years old. The majority of nurses in surgery ward are female with 83.5%. According to their qualifications, no one is working with a secondary certificate or Master's degree. Bachelor's degree and advanced diploma are represented equally at 50% for each level. 83.5 percent of nurses have experience of more than 5years working as nurses. All nurses 100% reported to work 2 shifts where one team start the work from 7:00am until 5:00pm while the other team start from 5:00pm until 7:00am.

Table 3. 2: Socio Demographic characteristics of surgical ward staff

Age	**Frequency**	**Percentage**
20-30years	4	33.3
31-40 years	2	16.5
41-50 years	3	25
>50 years	2	16.5
Total	12	
Gender		
Male	2	16.5
Female	10	83.5
Qualification		
Secondary certificate (A2)	0	0
Advanced Diploma (A1)	6	50
Bachelor's degree (A0)	6	50
Master's degree	0	0

Working experience		
0-2 years	0	0
3-5 years	2	16.5
>5 years	10	83.5
Number of shifts		
1 shift	0	0
2 shifts	12	100
3 Shift	0	0

3.6.3.2 Reasons of undocumented nursing care plan

Table 3. 3: Reason of undocumented nursing care plan

Item	yes	No
1. People		
Shortage of staff	10 (83.3)	2 (16.6)
Inadequate knowledge on documentation of NCP	6 (50%)	6n (50%)
Ignorance due to lack of accountability	7 (58.3%)	5 (41.6)
Have you been trained on Nursing care plan when at School	8 (66.6%)	4 (33.3%)
Have you been trained on Nursing care plan after recruitment while orientation	2 (16.6%)	10 (83.3%)
2. Equipment/material		
Suppliers/medication not available	4 (33.3%)	8 (66.6%)
Insufficient of computers	10 (83.3%)	2 (16.6%)
Slow network	5 (41.6%)	7 (58.3%)
3. Policy and procedure		
Inadequate follow up of supervision	8 (66.6%)	4 (33.3%)
Inadequate hand over communication	7 (58.3%)	5 (41.6%)
4. Environment		
Overcrowding of ward (overload work)	10 (83.3%)	2(16.6%)

Table 3.3 shows that shortage of staff nurse (83.3%), lack of training after recruitment (83.3%), insufficient computers (83.3%), Inadequate follow up of supervision (66.6%) and overcrowding of ward (overlord work) (83.3%) are the major contributing factors to the level

of high incompleteness of nursing care plan in surgery ward at Kibogora Level Two Teaching Hospital.

3.6.3.8 Summary of the possible root cause

The fishbone diagram technique was used to combine brainstorming and mind mapping to disclose the cause and effective relationship between underlying problem of undocumented nursing care.

The fishbone helps to identify possible causes for undocumented nursing care that might not otherwise be considered by directing the team to look at the categories and think of alternative causes.

Table 3. 4: Verification of root causes of uncompleted nursing care plan

No	Possible causes	Available	Not available	Comments
1	Over clouded of ward (Registry of patients)	X		Ratio of Nurse to patients is beyond the standard
2	Shortage of staff (list of Nurses and daily schedule)	X		Not enough according to nurse rate by patients
3	Equipment/Insufficient of computer	X		Not enough
4	Lack of network	X		Internet is not permanent
5	Inadequate knowledge and lack of experience	X		Staff need more training, only 2 of them have certificate
6	Insufficient Follow up of supervision	X		Not done regularly
7	Inadequate handover		X	There is no communication book
8	Environment: over clouding	X		Surgical ward is too small and crowded of patients
9	Behaviour/Lack of accountability		X	some of nurses reported to be demotivated but no way proves it.

Table 3. 5: Summary of root cause analysis

According to the standard the ratio is 1 nurse for 8 patients in ward. However, at KLTTH the ratio is 1 nurse for 28 patients in surgical ward. Shortage of staff is accepted as the root cause.

There are only 2 computers within the surgical ward to be used 12 nurses which can lead to poor documentation of Nursing care plan as all files are electronic. The root cause is accepted. Behavior and lack of accountability is rejected because all nurses showed the willingness to complete their task. Inadequate knowledge and lack of experience including lack of training was taken as the root cause because the majority of nurses reported that they have not been trained about documentation of nursing care plan. Environment and inadequate handover were rejected as they have very little influence on the documentation of nursing care plan. Insufficient follow up and supervision was accepted as the root cause because there is no proof indicating that supervision is done.

No	Possible causes	Evidence	Decision	Reason
1	Shortage of staff	the standard nurse patients ratio is 1: 8 but at KLTTH the ratio is more than 1:28	Accepted	The shortage of nurses can be one of factors which leads to poor documentation of NCP.
2	Equipment/Insufficient of computer	The surgical ward only has 2 computers while NCP and all other activities should be recorded electronically	Accepted	Computers are mandatory to document nursing care plan
3	Behaviour/Lack of accountability	Few of nurses are unwilling to document nursing care plan	Rejected	Most of nurses are willing to document NCP
4	Inadequate knowledge of staff and lack of experience and lack of training	Only 2 nurses reported to have certificate of training in nursing Care plan documentation	Accepted	Training if crucial to be able to document NCP
5	Environment/Over clouded of ward	The occupancy rate is 115%, most of the time there are 2 patients on 1 bed plus 2 care givers while the size of the ward is too small	Rejected	Size of the ward may not be under control of the researcher. Once there is enough staff and equipment overclouding may not be a big concern
6	Insufficient Follow up of supervision	No available record, checklist nor supervision plan	Accepted	The supervision will help to ensure that nurses accomplish their task including NCP documentation
7	Inadequate handover	Handover is done verbally on bedside	Rejected	Handover is done only it can simply be improved.

Table 3.5 indicates that shortage of staff leading to overload is reported at a high level as the root cause of incompleteness of nursing care plan. Some of nurses have never been trained about Nursing care plan at school as well as after recruitment. In addition, the majority still need to have more training as many of the respondent don't have any certificate related to Nursing care plan. This challenge is addressable and it is accepted for resolution.

3.7 Intervention

Strategies were identified to address the root cause and find solutions. A detail comparative analysis was conducted as indicated in decision matrix.

3.7.1 Possible intervention/Alternative solutions

Refresher training for the surgery wards staff on completion of nursing care plan
Increasing supervision to make sure documentation is done timely and efficiently
Recruitment of new staff to allow time for documentation of nursing care plan
Requisition of computers for documentation.

3.8 Comparative Analysis

The comparative analysis is coming from the brainstorming of the project team

1. **Comparatives analysis by cost**

Intervention	cost	score	comment
Refresh training for the surgery ward staff on documentation of nursing care plan	Cost will be covered by the hospital. There is a line reserved for trained within the Hospital's budget	4	Because of 83.3% has no trained it will be a good intervention for reducing incompleteness of nursing care plan with low cost.
Recruitment of new staff	Cost is covered by the MoH. The hospital will only make a request to appoint new nurse so this will be in charge of government/district budget.	2	Here there is no cost for hospital because, hospital will make a request to MoH to appoint new nurses so this will be in charge of government/district budget
Increasing supervision	No additional cost	5	This solution can have a positive impact because when supervision is enough and planned, nurses will work by acknowledging that their work is being supervised so that they can fill everywhere to be filled with no cost
Requisition of 1 computer	This amount will be found from the budget of the hospital from the line of purchasing equipment.	1	Once addition computers are available it will facilitate the documentation of nursing care plan.

2. Comparatives analysis by time

Intervention	Time	Score	Comment
Refresh training the surgery ward staff on documentation of nursing care plan	1 weeks	5	It will not long time because the document and trainers is there and it will not need external trainers
Recruitment of new staff	6months	3	It will take long time because of recruitment system
Increasing supervision	2months	4	This will take much time because the supervisor may not get enough time by supervising every thing
Requisition of computers	3 months	2	It may be computers are not available in store, it will continue process.

3. Comparatives analysis by feasibility

Intervention	**Feasibility**	**Score**	**Comment**
Refresh training the surgery ward staff on documentation of nursing care plan	Surgery ward staff accept and nursing department is agreed for this refresh training	4	Refresh training is feasible as it does not require more expenses, trainers are available, trainees are available and committed to attend the training, teaching materials are available and the cost is very low.
Recruitment of new staff	The administration of Kibogora Hospital will collaborate with the MOH for new staff recruitment.	2	Recruitment of staff is possible as it is done by the ministry of health through HRH and it does not require any cost from the hospital. Only the hospital administration will provide the request with evidence and support document. However, it may take time with the recruitment process
Increasing supervision	Supervisors are willing to improve the supervision and staff are committed to improve documentation	3	Supervision will be done easily by the head of department in collaboration with DNM
Requisition of new computers	One computer may not be a problem for the hospital even it may be available in the store if not it will be bought	4	1 computer may be available but as it requires the procurement process it may take some time to be feasible.

4. Comparatives analysis by impact

Intervention	Impact	Score	Comment
Refresh training for the surgery ward staff on documentation	Once all nurses will be trained and had enough knowledge and skills, it will be easy for documentation of Nursing care plan	5	Refresher training will have a positive impact as all of those who reported that they have never been trained nor had a short training will get enough knowledge and skills.
Recruitment of new staff	Recruitment of new staff will decrease the work load and allow time for documentation	2	If more Nurses are recruited, the work load will be reduced and they will have a time for completing nursing care plan.
Increasing supervision	Increase of supervision will put more pressure on nurses to document the nursing care plan	4	More supervision will have a positive impact on completeness of nursing care plan as nurses will be aware that if something goes it will have a negative impact on their performance contract.
Requisition of computers	Having an additional computer will facilitate the documentation without delay	3	Already the surgery ward has 2 computers which are used for different activities, mostly for patient's registration, report preparation and billing. By having the 3rd computer, it will be an advantage and a good opportunity as it will be reserved for nursing care plan completion.

Table 3. 6: Decision matrix

From the root cause analysis four main causes were identified including lack of training on NCP documentation, shortage of the staff, lack of supervision and shortage of computers

Strategic Alternatives	Cost	Time	Feasibility	Impact	Total
Refresh training on NCP documentation for the surgery ward staff	4	5	4	4	17
Recruitment of new staff	2	3	5	2	12
Increasing supervision	5	4	3	4	16
Requisition of 1 computer	1	2	2	3	8

Reference to the comparative analysis, Refresher training for the surgery ward staff on documentation of nursing care plan has the highest score (17) and it was taken as the priority for implementation. Refresh training is feasible as it does not require more expenses or external trainers or additional teaching materials. Trainees were available and committed to attend the training, teaching materials were also available and the cost is very low. It could not take a long time and once all staff are trained it could give a positive impact on documentation of nursing care. For the sustainability of the intervention refresher trainings would be done regularly every six months. This would be a good opportunity to integrate new staff who may be allocated in surgical ward either as a new recruited nurse or as a rotated nurse. However, it may happen that a training is done but nurses are not willing to document nursing care plan, by that the combination of training and the second possible resolution which is to increase supervision (16 score) will be applied.

3.8.1 Intervention strategies

Training the surgery ward staff on documentation of nursing care plan

The majority of nurses reported that they have never had any training related to completeness of nursing. So, Training of all nurses might give a positive impact. This was taken as the priority to address.

Based on root cause analysis, shortage of surgery ward staffs had shown negative impact on documentation of nursing care plan. So, recruitment of 2 additional new nurses might resolve the problem of incompleteness of nursing care plan. If surgery ward staff is enough and the equipment or computers are not sufficient, this also caused the problem of incompleteness of nursing care plan. An additional 1computer might be enough to solve the problem. Kibogora Level Two Teaching Hospital is no longer using hard copy files for patients; all of them are electronic reason why there is a need of more computers. Increasing supervision might have a positive impact because when supervision is enough and planned, nurses could work by acknowledging that their work is being supervised so that they can fill everywhere to be filled.

3.9 Implementation Plan

To achieve our objective of increasing the rate of documentation of nursing care plan in surgery ward at KLTTH from 40% to 85% by March 2023, the implementation plan was adopted.

3.9.1 Details of activities done

The implementation Gantt's chart of the program involved different activities. The first activity was to determine the appropriate time for training, look on the schedule where there are no other programmed meeting, workshop or training but also look at the availability of the meeting room and make booking of the room. The second activity was to invite the target group which was the surgical ward nursing team. It was a good opportunity to discuss with them about the training, when it will be done, how it will be done and explain the expected outcome which was to increase the rate of completed nursing care plan.

The third activity was to discuss with Director General of the hospital (DG), Director of Administration and Finance (DAF) and the Director of Nursing and Midwifery (DNM) about modalities of training and logistic materials but also, we discussed about its impact.

The fourth activity was to identify and collect tools such as Power point presentation, pen, not books, marker, water for refreshment, coffee break and lunch. The fifth activity was implementation of intervention where the training was done for a period of 3 days. Two days were concerned with theory with power point presentation and more discussion. Then the following days, more practice was done. Participants were working on file of patients in the electronic system to familiarize with completing nursing care. Then after, they continued with fully completing nursing care plan. Furthermore, supervision, monitoring and evaluation were conducted for better improvement but also to maintain the sustainability of the project.

3.9.2 Monitoring and Evaluation Plan

Monitoring was done regularly as the process goes on to assess if the objectives are being meet but also to assess challenges and help to overcome them. Researcher in collaboration with DNM monitored if every nurse is able to complete nursing care plan effectively and timely.

3.10 Measures

The number of surgical Nursing care plan documentation (outcome indicator) was measured to evaluate the outcome and impact of the intervention. The documentation of each of the five components of nursing care plan was also measured. The number of nurses trained has been measured as process indicator and its impact on expected outcome of the intervention. Number of computers as well as number of nurse staff was also evaluated as the contributing factors to the increase of completeness of nursing care plan.

3.11 Data analysis procedure

The software SPSS version 20.0 for windows and the Microsoft Excel 2010 were used to analyze the data, where descriptive statistics was used to summarize results related to the increase of nursing care documentation. The results were presented in the form of frequency distributions, percentages and tables.

3.12 Ethical consideration

The ethical clearance was received from the Directorate of Research and Innovation at the University of Rwanda, College of Medicine and Health Sciences. In Addition, the researcher got approval from hospital Director General for conducting the files audit and allows collection of all needed data.

CHAPTER FOUR: RESULTS

4.1 Collection of indicator information

The indicator information was collected by the researcher. Firstly, the data collection sheet was prepared in form of table with 5 main columns indicated Nursing assessment, diagnosis, objectives, interventions and Evaluation. Then each column was divided into 2 sub-columns indicating if activity is completed or not completed in patient's file. Rows corresponded with dates starting from 23 January 2023 until 20 March 2023. The data were collected every morning at 8:00am before starting the daily work. The data collected in the morning evaluated the previous day and night. As it was a part of monitoring, the research used to ask nurses on duty who did not complete NCP what was the challenges and reminded them to complete NCP as much as they can. During monitoring phase, Education and training continue for better improvement in Completion of Nursing care plan. On the 20th March 2023 a general evaluation was done by the researcher in collaboration with DNM and all nurses of Surgical ward to find together the results of the project.

4.2 Completeness of Nursing Care Plan

The table 4.1 shows the level of completeness of nursing care plans within patient's files after implementation. It shows that nursing assessment was completed at 85.6% (<0.001), nursing Diagnosis completed at 85.1% and Nursing objectives completed at the level of 84.4% (<0.001). Nursing intervention and Nursing Evaluation were completed at the level of 84.4% (<0.001) and 80.8% (<0.001) respectively. The overall nursing care completeness is found at 80.8% (<0.001). From the current study, the p-value was found to be below 0.001 in all the subjects evaluated. The pre-established significance level was 5%, and the statistical evidence showed that the quantity and quality of nursing care plan documentation was improved in the post-intervention files.

Table 4. 1: Results of Pre intervention (N=747) and Post Implementation (N=438)

Activity	Completeness Pre-implementation (Sample size=261)	%	Completeness after implementation (Sample size=209)	%	Change %	P-value
Nursing Assessment	112	42.9	179	85.6	42.7	<0.001
Nursing Diagnosis	114	43.7	178	85.1	41.4	<0.001
Nursing Objectives	113	43.3	177	84.7	41.4	<0.001
Nursing Intervention	102	39	176	84.4	45.4	<0.001
Nursing Evaluation	24	9	169	80.8	71.8	<0.001
Overall completeness		40	169	80.8	40.8	<0.001

4.4 Indicators

Table 4.2 shows that nursing care plan completeness was improved from 40% to 80.8% after implementation. This was achieved due to the increase in number of nurses trained in nursing care completeness, increase of staff number, more supervision and increases of equipment including computers.

Table 4. 2: Indicators

Indicators	Pre-intervention	Post-intervention
Completeness of NCP	40%	80.8%
Nurses trained in NCP	16.6%	100%
Number of nurses in Surgical Ward	12	14
Number of computers	2	3
Supervision	Done temporally	Done regularly

CHAPTER FIVE: DISCUSSION

5.1 Discussion of the project results

The results of the present study are in line with a study conducted by Karp et al who reported that the documentation of nursing care plan should indicate the clinical content in relevance to the location and the status of the patient's condition (27). Another study reported that NCP enables adequate recording of patient's health condition and improvement status, Also NCP documentation indicates needs and responses to provided care. In addition, it supports and facilitates clinical reasoning, collaboration and communication among healthcare providers to ensure the logical continuity of healthcare (24). Results of the project after implementation show a good improvement in documentation of nursing care plan in patient's file. The implementation of the project seems to be successful as the majority of nursing care plan is well documented. The present result is higher than the result from the study of Karp et.al who found that the percentage of complete documentation was very low. The same study indicated that some adjustments are still needed to reach a higher level of nursing care plan documentation (27). It was also reported that training of nurses in terms of nursing care documentation was very helpful. The importance and benefits of educational interventions was also verified in the same study to measure the quality and quantity of nursing care records during the pre- and post-intervention period (27). This study reported that improvement of the quality of nursing care documentation and its visibility was very important (25). The present study is in agreement with the application of new concepts in Nursing care plan by the use of outcome and impact indicators to set goals for the patient, the family or the whole community and environment. Baseline results are always measured at the first assessment and the progress is also measured at for every new assessment (25).

5.2 Factors contributing to the success of the Implementation

The modalities of the training including logistic materials were provided by the administration of KLTTH. In addition, the teaching materials including power point presentation were prepared on time. Furthermore, the Director of nursing and Midwifery contribute a lot to the running of the training by providing some presentation and sharing the advantages of documenting Nursing care plan. In general, the training was done smoothly and 100% of nurses in Surgical ward attended the training. After training, all nurses committed to implement what they learn from the training. Another factor was related to advocacy done for surgery ward department for increasing the number of staff nurse.

Two additional nurses were recruited and once they started, the workload was reduced which gives time to complete nursing care plan. After integration of those nurses also a short training was organized for them so that they might be at the same page as their colleagues in terms of completing nursing care plan. Factors related to equipment was also addressed and advocacy was done. During an implementation there was an addition one desktop computer and one Ipad. Currently, the surgery ward uses 3 desktops and 2 Ipads which facilitate the reporting activities including nursing care plan. Monitoring and supervision were also another key element contributing to the improvement of completeness of nursing care plan. Every morning, the researcher conducted a monitoring of activities to assess the level of completeness of nursing care from the previous day but also it was a good opportunity for motivating all nurse staff. Furthermore, supervision done by the researcher in collaboration with the Director of Nursing and Midwifery was another way to encourage and wake up all nurses about completion of nursing care plan.

5.3 What could be done better?

The objective was achieved at 80.8% while the target was 85%. Improvement is still needed. Currently, all 3 desktops are distributed in 3 halls of surgery whereas there are 4 halls. If the surgery ward gets one more additional computer, it may be possible to allocate those computers in different rooms of surgery ward so that each nurse allocated in any room will have a computer to complete nursing care plan without moving to the other hall otherwise there is a risk of forgetting. Furthermore, it could be helpful if the Nurse in charge of Surgery wards get a desktop in the office to facilitate the activity of monitoring and Evaluation. As all files are electronic it could be easy to pass through all files and give the feedback to any nurse who did not complete nursing care correctly. In the same line with the study by Karp et al. (2021), in comparison to conventional hard paper documentation, it was found that electronic health records have an importance of producing very clear and legible data that facilitate coders, computational analyses and research study related to healthcare service (26). However, it was found to be difficult to develop an effective system to document the NCP in the area of health services and nursing information and technology. Structural problems such as lack of data standardization, safety mechanisms that prevent the user from progressing without completing every item, lack of adequate training and resistance to the adoption of these systems are pointed out as factors that affect quality and usability and should be addressed (26).

Moreover, one additional nurse is still needed to decrease the workload of nurses so that they have enough time for documentation otherwise sometimes nurses concentrate on providing nursing care just to save the patients and finally finish by lacking time to complete nursing care plan. As consequence in medical field any activity which is not written it's not done.

5.4 Lesson learnt

The lesson learn is decision making and always having a plan B so that when Plan A fails for any reason, plan B can be adopted. Another lesson is to be patient and never give up in case something is not being in the planed way. Also, collaboration and good communication as well as team work was found to be the key of success. Furthermore, the researcher learnt that monitoring of the implementation should start immediately as long as the implementation starts. The research found that there are some staff nurses who have resistance to change. For instance, during implementation some of the nurses were not willing to complete all steps of nursing Care plan. They used to complain that it takes a long time to complete nursing care plan electronically within the system. However, with strong motivation and explanation about its importance, they accepted to move from the routine to the new approach of nursing care documentation. Lesson learnt is never give up, just keep trying and try different option; any time objectives might be achieved.

5.5 Challenges met during Implementation and how they were overcomed

The appropriate time for training was identified, the conference room were booked and invitation were given timely to nurse participants. However, during implementation period some challenges happened. For instance, one morning we were supposed to start the training but most nurses were invited to attended another training outside of the administrative District. It was challenging to postpone the training and compensate with the next day when they were back.

Another challenge is that the training was done in parallel with the usual work of taking care of patients admitted in Surgical ward which means that all nurses could not attend the training at the same time. Training and work were done in shift by alternating morning and afternoon. Another challenge was related to unavailability of the conference hall. Although, it was booked very early, on day the Researcher was informed that the conference room could not be available because the Hospital was having special visitors. To overcome that problem, The researcher has to work hard and took decision to do the training in the surgical ward just

using the briefing room. The room was not comfortable for the training but it was done smoothly and the objective of the day was achieved. Another challenge was the cut off of electricity when the researcher was presenting. As a solution the Presenter continued just using the machine but without projecting the power point but after some time the Generator was switched on and the power came back and the presentation continued with power point projection.

In terms of practice, observation shows that the training was very helpful because the majority of nurse were committed to document all nursing care plan including Nursing assessment, Nursing diagnosis, expected outcomes, Nursing interventions and Nursing evaluations. Only few of nurses reported to have difficult in documentation of nursing care because they are not good in computer use. As a solution, the researcher increased the mentorship and monitoring for them. Then, progressively also they catch up and get familiar with the computer use.

The current study found the same challenges as it was also reported in the study conducted in Iran; Factors related to the management system and some individual factors were found to be a source of barriers for nursing care documentation. Those factors contribute to the nursing process and cause challenges in implementation of the process (29). Poor knowledge and skills related to the implementation of the process has been found to be the most important contributing factor preventing an effective implementation of the process and nursing care documentation. The monitoring and evaluation done by the researcher in collaboration with DNM seem to be beneficial and motivating to the staff to overcome the challenge. Other challenges observed are in the same line as the ones reported in the study conducted in India including resistance to change, mindset, habit and routine (31). Fair of making mistakes, unwillingness to take risk or look for alternative strategies, decision making without sufficient data and failure to evaluate effectiveness of nursing actions were observed in the current study as it was found in the literature (28).

Challenges about the lack of understanding of the true meaning of the nursing care plan were observed. For some nurses, the nursing care plan and nursing is considered to be the same. The same challenge was reported in a systematic review study conducted in Iran (32). Steps of nursing care plan are also challenging in recording and documentation. It was found that despite awareness of the need for registration of nursing care plan, interventions, and outcomes, nursing records could not be completely recorded.

In order to simplify the process of nursing care recording and documentation, an introduction of electronic files through the use computers and appropriate software has been initiated. The use of computers and relevant software has been introduced as an approach to reduce the time and simplify the process of recording.

5.6 Limitation of the project

The main limitation of the project is that the project was implemented by the researcher who had other duties and daily responsibilities. Combining both the project with other responsibilities was challenging. The second limitation is related to the financial status. The project was implemented without any sponsorship. In addition, the researcher could not have access to the budget of the Hospital nor to the recruitment process. Otherwise, if it was so, the research could plan for a study visit for instance in another hospital where nursing care plan is were completed. Another limitation is related to the period of evaluation which was done within few days after training while changes may require some time to occur. The same limitation was reported in the study of Karp et al who highlighted that the data were immediately collected after training while changes in the clinical practice may require more time to develop and to have an impact (24). Furthermore, in agreement with the limitation met by Karp et al (27). It is possible some level of bias may be observed, since the researcher is one of the medical personnel within the healthcare system, the same hospital, exactly in the same surgical ward and may involuntarily interfere with the evaluation process of the outcome.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Nursing care plan is an essential medical tool in health care service delivery; it helps to minimize medical legal issues and promote patient‟s rights. The completion rate of nursing care at Kibogora Level Two Teaching Hospital was very low in pre intervention period, this because staff were not oriented to hospital policy regarding nursing care plan documentation, lack of training, shortage of nurse staff, insufficient equipment and poor handover between health professionals. Clinical staffs were not accountable on any malpractice by not completing nursing care plan. The intervention included staff training and presentation on existing Nursing care plan policy, advocacy to increase the number of staff and computers and increase of supervision. The implementation of the project showed a positive impact with effective improvement of documentation level of nursing care plan. The results of this research confirmed the study hypothesis. There was an increase in Nursing care plan documentation in all files evaluated. It was also possible to observe the effectiveness of the interventions, proving that team training and the deployment of a new staff, with more functionalities, are factors that contribute to improve the quality of the NCP documentation.

6.2 Recommendations

Based on the results of the study, considering the identified root causes of low completeness of nursing care plan, it is recommended that Kibogora Level Two Teaching Hospital should continue the monitoring and evaluation of completeness of nursing care plan in order to maintain the sustainability of the achievement from the present project.

It is also recommended that the same strategic problem solving used in this project might be applied in other quality improvement project for better quality of care. Training of nurses in terms of nursing care plan documentation is the key factor for improvement. Training should be organized regularly for refreshment especially for new recruited nurses. This assessment strategy might be applied in research studies to assess the quality of nursing records and audit processes, enabling adjustments to the NCP documentation by means of educational interventions. These analyses might allow for periodic feedbacks to be offered to the nurses, in order to constantly support them in the practice of critical thinking and clinical reflection.

It is recommended the Policy makers to integrate Nursing care plan with checklist into the electronic recoding system to facilitate documentation of nursing care plan. It is also recommended to future researchers to conduct further research in other discipline of KLTTH as well as in other health facility settings in order to improve nursing care plan documentation for the benefit of patients. Educators in Nursing schools are recommended to give more credits on nursing care plan documentation as the key factor for good health service delivery.

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Appendices

Information letter and questionnaire

Dear Sir/ Madam,

Greetings!

This questionnaire is for the purpose of helping Mrs. Pierrine NYIRANGERI who is a postgraduate student in Masters of Hospital and Health Care Administration at University of Rwanda. Its purpose is to obtain the information that will assist her fulfill a partial requirement for Master's Degree at this University. The title of the study is "**IMPROVEMENT OF NURSING CARE PLAN DOCUMENTATION IN SURGICAL WARD AT KIBOGORA LEVEL TWO TEACHING HOSPITAL"**

Within this context, I would like to request you to participate in this study by answering the questionnaires. Kindly do not leave any option unanswered. Any data you will provide shall be for academic purposes only and no information of such kind shall be disclosed to others. Please there is no need of indication of your names or any of your identification.

Thank you.

Yours faithfully,

Questionnaire

Part I: <u>Demographic characteristics of the respondents</u>

Gender (Please Tick):

__ (1) Male

__ (2) Female

Age: -------

Qualifications:

(1) Secondary School Certificate (2) _____

(2) Advanced Diploma (A1) _____

(3) Bachelors (A0) _____

(4) Masters _____

Other qualifications _____

Nursing work experience:

-0-2 years
- 2-5 years
- Above 5years

Weekly work hours (indicate the number of hours per a week):_____
Length of shift:

- 1 shift
- 2shift
- 3shift

Part II: <u>Reason of high rate of undocumented nursing care plan</u> (Tick the appropriate answer yes/no)

Item	yes	No
1. People		
Shortage of staff		
Inadequate knowledge on documentation of NCP		
Ignorance due to lack of accountability		
Have you been trained on Nursing care plan when at School		
Have you been trained on Nursing care plan after recruitment while orientation		
2. Equipment/material		
Suppliers/medication not available		
Insufficient of computers		
Slow network		
3. Policy and procedure		
Inadequate follow up of supervision		
Inadequate hand over communication		
4. Environment		
Overcrowding of ward (overload work)		

Nursing care Plan Documentation data set

S/N	Nursing assessment	Nursing Diagnosis	Nursing objective	Nursing interventions	Nursing Evaluation

0= Not documented

1= Fully documented

2= Partially documented