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**ASSESSMENT OF THE EFFECT OF SBAR COMMUNICATION TRAINING
ON INTERPROFESSIONAL TEAM COLLABORATION IN RWANDA**

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October 2019



**EFFECT OF SBAR COMMUNICATION TRAINING ON
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BY

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218000495

A dissertation submitted in partial fulfillment of the requirements for the degree of
**MASTER OF SCIENCE IN NURSING (EDUCATION LEADERSHIP AND
MANAGEMENT)**

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October, 2019

DECLARATION

I hereby declare that this dissertation submitted in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE** in **NURSING**, at the University of Rwanda/ College of Medicine and Health Sciences, is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of the information quoted or cited.

Date and signature of the student

.....

Authority to submit the dissertation

Surname and first name of the Supervisor: Ms. Rebecca L. White

In my capacity as a supervisor, I do hereby authorize the student to submit his dissertation

Date and signature of the supervisor/ co-supervisor

.....

DEDICATION

I dedicate this Dissertation to my wife NyiratungaAphisant, to my parents, families, brothers, Beloved sisters, my classmates, relatives, and friends. You are the source of my achievement.

ACKNOWLEDGMENTS

The completion of this work would not have been possible without the contribution of the different individuals for guidance and support in various ways. First and foremost, I thank the Almighty God for his love and protection. I would like to express my very great appreciation to Dr. Darius Gishoma, Ms. Rebecca White, and MSN for their assistance, guidance, support, and encouragement which greatly contributed to the completion of the project.

We address a special thanks to the Government of Rwanda, the Ministry of Education and the Ministry of Health for their support.

I would like to offer my special thanks to UR-CMHS managers and faculty who's strived to plan, run the master program in nursing.

Incredible thanks go to all classmates for their genuine cooperation, moral, physical support during the course of study. Their willingness to share experience and knowledge has been of great value.

A special thanks to all my relatives, families, friends, for their motivation and encouragement to finish this study, may the Almighty God bless all.

I finally express my gratitude to each and everyone who might in one way or another contributed to the successful completion of my studies and this project in particular.

ABSTRACT

Background: Teamwork in clinical settings and especially in the emergency department requires straightforward, clear and consistent communication as well as good collaboration between health workers. Communication increases teamwork and quality of care and enhances patient safety. Lack of concise communication between healthcare providers impacts patient care safety, leads to misdiagnosis increases delays in treatment and medication errors, increases patient morbidity and mortality. Evidence from the research is also consistently recommending programs enhancing interprofessional collaboration among healthcare workers.

This research aims to examine the effect of Situation Background, Assessment, and Recommendation (SBAR) communication education on the competencies of interprofessional team collaboration among registered nurses working in the emergency department at the University teaching hospital of Kigali (CHUK).

Methodology: This research used a one-group pre-test/post-test research design. This study was conducted on thirty registered nurses working in the emergency department at CHUK. Self-Administered questionnaires were completed prior to and after the training, an evidence-based communication skills program was conducted on the use of the SBAR communication tool. Univariate analysis was used to evaluate the association between communication and some demographic characteristics whereas paired t-test was used to test whether there is a significant improvement in communication after the intervention.

Results: Results of this study indicate that there is a statistically significant improvement of the nurses' competencies of inter-professional collaboration after SBAR communication education ($p(T>t) = 0.0002$).

Conclusion: This study concludes that SBAR communication education for emergency nurses increases their communication skills and may thus increase the care to patients.

Keywords: SBAR communication, partnership, coordination, cooperation

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LIST OF ACRONYMS AND ABBREVIATIONS

AITCs: Assessment of Inter-professional Team Collaboration Scale

CHUK: University Teaching Hospital of Kigali

IHI: Institute for Health Improvement

IOM: Institute of Medicine

IPTC: Inter-professional Team Collaboration

JACO: Joint commission

MEWS: Modified Early Warning Score

MoH: Ministry of Health

SBAR: Situation Background, Assessment, and Recommendation

WHO: World Health Organization

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CHAPTER 1.GENERAL INTRODUCTION

1.1 INTRODUCTION

Inter-professional team collaboration's competencies are essential to achieve better patients' diagnosis outcomes (Raymond and Harrison, 2014). Its competencies include coordination, cooperation, and partnership. These competencies are influenced by the communication strategies between health care providers.

Numerous researches revealed that miscommunication accounts for more than 70 percent of all patients' treatment errors(Reimer *et al.*, 2018)&(Reimer *et al.*, 2018). By trying to alleviate miscommunication issue among various health care providers, health organizations and countries adopted the situation Background, Assessment, and Recommendation(SBAR) communication tool in the early twenties which was implemented by US submarines military and later adopted by the aviation industry as their communication toolkit (Panesar *et al.*, 2016). Later on, world health organization, Royal College of Physicians of London, and the UK National Health Service recommended the use of SBAR tool in health care (Raymond and Harrison, 2014). Various studies were conducted on the contribution of that tool to alleviate the practice errors of health providers. Fortunately, there is a consistent testimony of the contribution of SBAR to health outcomes of patients but there are some significant differences in the reported level of contribution (Stewart and Hand, 2017).

Although the SBAR communication tool is doing better to rescue most patients' life in some countries and some countries seem to resist adopting its utilization. The most recent statistics indicate that SBAR is being used only in the UK, USA, Europe, and Australia and very few Low and Middle-Income Countries (Raymond and Harrison, 2014).

In the frame of this study, the researchers conducted training on the use of SBAR communication tool among registered nurses working in the emergency department at University Teaching Hospital of Kigali and explored the capacity to engage in inter-professional collaboration among nurses after the training.

1.2 BACKGROUND OF THE STUDY

Poor quality communication between healthcare providers is a barrier to healthcare safety and challenges effective healthcare practices with inter-professional team collaboration. Limited communication or poor-quality communication impacts patient outcomes and may result in increased patient morbidity and mortality. Ineffective communication does not enhance the workplace or build team spirit, but delays treatment increases medication errors, leads to misdiagnosis, and increases patient morbidity and mortality (Müller *et al.*, 2018).

In the late nineties, the leading cause of death was errors, 70% of these errors have a cause related to communication failures (Stewart and Hand, 2017). The issue of medical errors spurred the IOM to introduce SBAR, a succinct, efficient structured communication method to reduce errors arising from miscommunication. These reported figures have been increasing to date according to the recent research of Stewart & Hand, (2017). His study found out that in 2015, deaths due to medication errors were 5 times higher than in 1999. Although there are no available figures for the different geographical regions of the world including the Rwandan context, deaths due to medication errors figures are always higher in countries with low and medium income(Singh *et al.*, 2017).

In alleviating the issue of deaths due to medication errors, health care practitioners adopted the so-called “SBAR”(ACT Academy, 2017). This is a foundational component to formalize communication between healthcare providers. The U.S. Navy originally developed SBAR as a communication technique used on nuclear submarines in the late 1990s. (Kostoff *et al.*, 2016).

In research conducted in South Africa in 2017, SBAR adoption in the health sector was found to improve communication among health care providers and reduce deaths due to treatment errors. This study revealed a 41 percent increase as reported by nurses who participated in the study(Nagammal *et al.*, 2016).

The use of SBAR communication has acquired significant testimonies to improve the health care providers' collaboration which leads to improve in patients' safety. These stress international health organizations to put their attention to the use of this new communication toolkit. They further recommend every health care provider to use it to rescue the lives of many patients as a result of practice errors(Müller *et al.*, 2018).

1.3 PROBLEM STATEMENT

There is strong evidence from the research literature that lack of inter-professional interactions compromises the delivery of safe and effective healthcare. Furthermore, interprofessional collaboration training, especially SBAR seems to improve the delivery of healthcare and results in better healthcare. The World Health Organization (WHO) recommends to implement a standardized approach to hand-over communication between healthcare providers and supported SBAR as an essential tool to increase communication and IPTC between healthcare providers

Despite the recommendation of implementing Situation-Background-Assessment-Recommendation (SBAR) in healthcare, very few African countries have started to use SBAR Tool. There are also very few studies evaluating the effect of SBAR tool on staff members' perception of communication, inter-professional collaboration attitudes as well as the impact on patient outcomes, thus the study adds new knowledge to the subject area. This study aims to assess the use of SBAR in the Rwandan context.

The SBAR toolkit sounds promising to ensure better health outcomes through effective inter-professional team collaboration, but the lagging countries show the rise in treatment failure due to miscommunication which leads to increased mortality rate and morbidity rate. In most situations, researches revealed that more than 70 percent of treatment failure resulted from poor communication. This highlights the importance of effective communication (which SBAR tool proves to help to achieve) to ensure inter-professional team collaboration and better patients' treatment outcomes(Clapper and Ching, 2019).

It is in this regards the author decided to train Rwandan health practitioners starting from nurses the use of SBAR tool to effectively communicate patients' information. If it turns out to help in rescuing patients' life, the author shall recommend other African countries to put their attention to it for the sake of the citizens' welfare.

1.4 OBJECTIVES OF THE STUDY

1.4.1 THE AIM OF THE STUDY

The study aims to implement SBAR communication training for nurses working at CHUK and assess its effect on inter-professional team collaboration's competencies among nurses at CHUK.

1.4.2 SPECIFIC OBJECTIVES

1. To assess the effect of the training using the SBAR communication tool on Nurses' coordination competences.
2. To assess the effect of the training using SBAR communication tool on Nurses' cooperation competences
3. To assess the effect of the training using SBAR communication tool on Nurses' Partnership competences

1.4.3 RESEARCH QUESTIONS

1. To what extent will SBAR communication training improve Nurses' coordination competences at CHUK?
2. To what extent will SBAR communication training improve Nurses' cooperation competences at CHUK?
3. To what extent will SBAR communication training improve Nurses' partnership competences at CHUK?

1.4 STUDY SIGNIFICANCE

The results of this research study may have a great benefit to CHUK as well as institutions where communication between employees matters particularly in the health sector. The study will help health care providers for instance nurses in Rwanda and elsewhere to improve their collaboration and alleviating the treatment failure as a result of miscommunication. In addition, once the SBAR tool proves to be effective to improve the communication among nurses at CHUK, it will reduce the length of stay at hospitals as well as other side effects from mistreatment as a lack of proper information.

The evidence from this study will motivate the resistance countries either to adopt the SBAR communication or not.

1.5 OPERATIONAL DEFINITIONS

Inter-professional Team Collaboration (IPTC) highlights teamwork as a negotiated agreement between professionals; valuing the expertise and contributions of each team member and their contributions to the patient care plan(Sangaleti *et al.*, 2017).

A **team** is defined as “a group of people working together to achieve a common purpose for which they hold themselves mutually accountable (Franklin *et al.*, 2015).

Evidence-based practice (EBP) is defined as the use of the best clinical evidence in making patient care decisions, and such evidence typically comes from research conducted by the nurses and other healthcare professionals. Evidence-based practice is defined as the conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients(Melnyk *et al.*, 2014).

SBAR Communication: includes situation, background, assessment, and recommendation. The situation must include the presenting problem or current status of the patient. The background is the patient’s medical history before the patient arrived at your facility or department. Assessment includes a complete set of vital signs, the patient’s level of pain, and any recent changes. The recommendation is the summary as defined by the healthcare provider and interventions or further assessment, plans or needed interventions(Clapper and Ching, 2019).

Cooperation is a voluntary arrangement in which two or more entities engage in a mutually beneficial exchange instead of competing.

Coordination is the process of organizing people or groups so that they work together properly and well. The important term job satisfaction: it is simply how content an individual is with his or her job

1.6.STRUCTURE/ORGANIZATION OF THE THESIS

This thesis is composed mainly of six chapters. The first chapter discussed the general introduction to inter-professional team collaboration and SBAR communication. Chapter 2 will

summarize the findings of previous researchers on the relationship between Inter-Professional Team Collaboration and SBAR. In chapter 3, the methodology used for analyzing Inter-Professional Team Collaboration and SBAR communication among participated nurses will be discussed. While in chapter 4 results of the analysis are presented. The discussion of findings is presented in chapter 5 while conclusions are drawn at the end of this thesis.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The literature review for this research study used online search engines such as Hinari, Pub Med, Cumulative Index to Nursing and Allied Literature (CINAHL) complete, Cochrane Library, and Google Scholar. The key search terms were: SBAR, communication, nursing, communication improvement, medical errors prevention, and control, physician-nurse relations, professional competence/standards, quality improvement, nurse communication, shift reports, handoffs, discharge planning, inter-professional team collaboration, and interdisciplinary collaboration, and patient safety.

2.2 THEORETICAL LITERATURE

In contrast to the empirical study, theoretical literature is essential to review different researchers while working on the literature review. Such an article contains facts and information derived from other theoretical sources new inferences may be drawn from the compilation of all literature pieces. However, the information and hypothesis are already existent. The literature review is a compilation of all the relevant data in order to produce coherent results. No experimental work may be conducted and the results come out of already existing theories in a systematic manner. As theory provides the foundation for most research endeavors, (Grant and Osanloo, 2014) argued that theory also provides the grounding for literature reviews. It was indicated that research develops from the researcher's implicit or explicit theory, depending on whether the research effort is quantitative or qualitative. In either case, the theory is the key driver to research efforts and literature reviews. Literature reviews must be able to provide a clear theoretical framework Osanloo,(2014) so that others can build upon one's literature review, providing further support for or against the theoretical framework.

The Situation, Background, Assessment, and Recommendation (SBAR) as a communication format in healthcare is communication in both written and face to face communication. Communication as an informational exchange among all persons includes body language, verbal tone, and overall attitude(Stewart and Hand, 2017). A key to the success of SBAR implementation is effective communication among staff; improved communication between nurses impacts patient care safety and enhances IPTC. Despite these challenges, the US-based

Joint Commission (JACO) and most healthcare organizations agree on the fundamental concepts to providing safe and effective patient care is communication, collaboration, and coordination between disciplines (Townsend-Gervis, Cornell and Vardaman, 2014).

2.2.1 THEORY OF COMMUNICATION

Hildegard Peplau, the first theorist in nursing explored nursing communication and nurse-patient relationships. Senn, (2013) stated that Peplau's theory of interpersonal relations is a landmark theory in nursing, which places emphasis on reciprocity in the interpersonal relationship between nurses and patients. The interpersonal relations concept provides a contextual framework for understanding many of the challenges in interpersonal communication. Verspuy and Ong interpersonal relations theory related to nursing practice and communication supports interpersonal skills and remains a fundamental conceptual framework in nursing practice (Reeves *et al.*, 2017).

In this theory, nursing as a professional entity highlights quality communication as a central key element to the understanding of our rapidly changing healthcare environment and increasing IPTC (Matziou *et al.*, 2014). Communication is an integral part of nursing, a medium through which nurses relate with patients, therefore effective communication skills would have a positive impact on the quality of healthcare output. This review of the literature indicates that the use of effective communication skills in health care settings does not only benefit patients it also benefits healthcare providers in the aspect of their and job satisfaction and health(Ellison, 2015).

Nursing practice requires not only scientific knowledge but an additional effective interpersonal communication, intellectual and technical abilities, and skills. Hence, effective interpersonal and communication skills between health care providers and patients are one of the most significant factors for improving patients' satisfaction, compliance and overall health outcome(Bramhall, 2014).

Kourkouta and Papathanasiou,(2014)argued that being able to communicate effectively with others is at the heart of every patient care experience. Effective communication remains a key factor in the improvement of interpersonal relationships and subsequently the improvement of the patients' care and the quality of patients' recovery. The nurses' deep understanding of the effective communication skills, roles, and barriers in the communication process affects the

outcomes of healthcare provided and could a central aspect of achieving holistic and patient-centered care (Bramhall, 2014).

In regards to this theory, this researcher hypothesizes that SBAR will contribute to the improved IPTC. SBAR communication education will augment and support quality healthcare delivery and allow clear accurate consistent communication, and support nursing through improved healthcare delivery(Stewart and Hand, 2017).

2.3 EMPIRICAL LITERATURE

The empirical literature is the research using empirical evidence. It is a way of gaining knowledge by means of direct and indirect observation or experience. Empiricism values such research more than other kinds. Empirical evidence (the record of one's direct observations or experiences) can be analyzed quantitatively or qualitatively. Quantifying the evidence or making sense of it in qualitative form, a researcher can answer empirical questions, which should be clearly defined and answerable with the evidence collected (usually called data). Research design varies by field and by the question being investigated. Many researchers combine qualitative and quantitative forms of analysis to better answer questions that cannot be studied in laboratory settings, particularly in the social sciences and in education(McKim, 2017).

A research was conducted in the Netherlands to evaluate the use of SBAR; it was found that it is a good tool to lessen earlier deterioration of patients. It used 47 trained and 48 untrained nurses to see if SBAR can really be the way to go to ensure effective communication at hospitals. The research concluded that there is a difference of 19 percent in earlier patients' treatment among trained nurses against untrained nurses. Overall, trained nurses perform well in delivering good care to the patient and increase team collaboration (Nagammal *et al.*, 2016).

The same research indicated significant improvements in the medical background handovers (31%), allergy status validation (14%), and a four percent decline in the verbal endorsement of instructions for inpatient care Nurses' satisfaction with handoff interactions were enhanced (12%). The study also concluded that a well-implemented SBAR could be led to immediate patients' care. Moreover, continuing education and sensitization to the use of SBAR among health care providers is essential (Nagammal *et al.*, 2016).

2.4 CRITICAL LITERATURE REVIEW AND RESEARCH GAPS

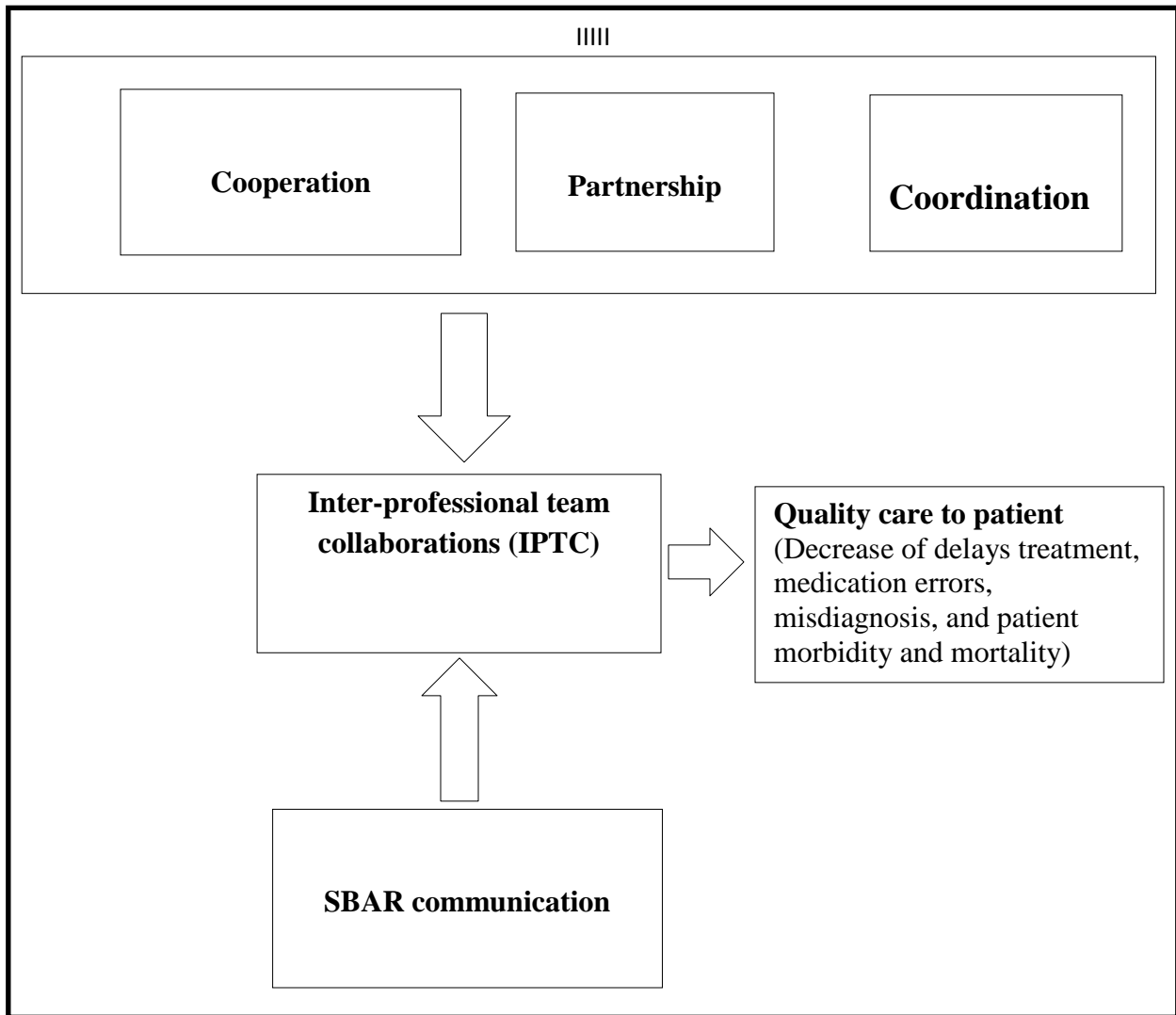
The literature review found no research highlighting SBAR communication implementation in the Rwandan healthcare context. There is little evaluation of inter-professional team communication and collaboration in Sub-Saharan Africa to support a concise nurse-physician interface during emergent time-sensitive situations.

Rwandan nurses at the community level as the primary care providers must make many important health care decisions for the patients starting at the rural health clinics (Panesar et al. 2016). SBAR enhanced communication abilities will support nurses to be more at ease to ask for consults from primary healthcare centers and will enhance the quality of patient care even at the rural level. Several strengths were noted across most studies as the SBAR communication tool had a positive influence on communication and increased the completeness of patient reports or descriptions between providers. The use of the SBAR communication tool showed versatility and allowed adaptation in many areas of healthcare settings. The research samples that received the SBAR training was primarily nurses, and in one study it was explained that SBAR training was just for nurses. The SBAR tool allowed strong communication collaboration for healthcare providers as well as increased comfort with reporting for nurses to physicians when patient safety and deterioration was evident(Shahid and Thomas, 2018).

2.5 CONCEPTUAL FRAMEWORK

The conceptual framework for this study is adapted from(Ong *et al.*, 2019).It is also based largely on literature sources describing two main concepts for this study: a) SBAR Communication and b) Inter-professional collaboration. The specific insights for the conceptual framework gained from this literature are illustrated in Figure 2.1

Figure 2-1: Conceptual Framework



Source: Adapted from (Ong et al, 2019)

In order to achieve high patients' safety, health care providers need to ensure inter-professional team collaboration. The effective inter-professional collaboration among health practitioners depends on a set of interprofessional collaboration competencies: these are coordination, cooperation, partnership. This is where SBAR communication as a standard and effective tool of communication comes in to enhance health practitioners' collaboration and alleviate treatment failure as a consequence of miscommunication. The SBAR standardized communication tool is structured around 4 features (a situation, background, assessment, and recommendation) to optimize effective communication. The use of a standard tool of communication to effectively communicate patients' information between nurses and physicians improves professional collaboration and then lead to the high quality of patients' care(Matziou *et al.*, 2014).

CHAPTER 3: RESEARCH METHODOLOGY

3.1. INTRODUCTION

This chapter presents methods and process that was used to conduct this study includes research design, research approach, research setting, population, sampling, sampling strategy, sample size, data collection procedure, data analysis, ethical considerations, data dissemination, limitations, and challenges.

3.2 RESEARCH DESIGN

This is an intervention study design. In this technique, inter-professional team collaboration indicators' data were collected among nurses in the emergency department at CHUK before and after the intervention (SBAR training).

3.3 INTERVENTION (SBAR TRAINING)

Situation, Background, Assessment, and Recommendation is a structured method recommended by the World Health Organization (WHO) to hand-over communication between staff and manages critical information that requires immediate attention and action (Raymond et al, 2014). The use of the SBAR technique is based on concrete cases and help to answer the following questions:

- **S-Situation:** What is going on with the patient?
- **B-Background:** What is the clinical background or context?
- **A-Assessment:** What do I think the problem is?
- **R- Recommendation:** What would I do to correct it?

The fulltime nurses working in accident and emergency department nurses followed the SBAR communication education adapted to their contexts. This study assessed the contribution of SBAR communication on inter-professional team collaboration.

3.4 RESEARCH SETTING

This study was conducted at CHUK which is in Kigali, Rwanda. CHUK is a teaching facility for the University of Rwanda. As the primary main referral facility, it serves a population of 12.5 million. CHUK is organized into divisions; one division supports the clinical areas and the

second division is non-medical. CHUK's clinical service includes surgery services for all ages, pediatrics, urology, orthopedic surgery, ophthalmology, and dentistry. Also, CHUK has specialized services clinics in Nephrology, Cardiology, Pneumology or Pulmonary, Dermatology, Endoscopy, and Endocrinology.

3.5 POPULATION

The study participants were the available nurses working at CHUK. The number of nurses employed at CHUK is approximately 300 nurses. This researcher focused on the nurses employed full time in the emergency department (N=33).

3.6 SAMPLING

Given that the targeted population was too small (33 nurses), the researcher decided to use the "Total population sampling approach". the total Population Sampling in full(TPS) is a technique where the entire population that meets the criteria is included in the research being conducted and is more commonly used where the number of cases being investigated is relatively small(Etikan et al, 2016).

However, only 30 nurses out of 33 nurses were able to participate in both pretest data collection, trained and participate in post-test data collection. Thus all the analyses are based on the responses on 30 nurses.

3.7 INCLUSION CRITERIA

Sampling inclusion criteria for participants were employed nurses at the Emergency department of CHUK, aged 21 years or over and working as a registered nurse. They must be able to complete the tool and be available to have tool completion in one to two weeks of post-SBAR training.

3.8. EXCLUSION

The study exclusion criteria are non-nursing persons and nurses less than 21 years in the emergency department.

3.9 VALIDITY AND RELIABILITY OF RESEARCH INSTRUMENTS

The validity of a tool has many dimensions; it refers to the extent to which a tool subjectively appears covering the concepts it is supposed to measure (Mohajan, 2017). Validity was guaranteed by presenting the data collection tool to the experts to judge its suitability of the tool. For the purpose of this study, content validity and face validity are considered. Starting with face validity which refers to the subjectivity appearance of a tool suitable to measure the construct of interest, it was assured by presenting the tool to experts who approved it prior to research implementation. For the content validity, it was assured by making sure that all of the study objectives are covered in the subsection of our data collection tool. Content validity is summarized in table 2.

To test the validity of the tool the researcher conducted also a pilot study in the Surgical department before starting, questionnaires were given to 5 nurses (17% of the sample size) at the end of the pilot study the researcher asked the respondents for any suggestion or any necessary corrections to improve instrument further. No suggestions for collection were given by the participants. With regard to reliability, it is the extent to which a data collection tool can produce repeatable and consistency results (Romero morales et al 2017) (Mohajan, 2017). For the purpose of this study, the data collection tool to be used is originally in English and the results were found to be reliable.

Table 3.2 Table of content validity

Objective	The concept in the Framework	Relevant questions addressing objectives
1. To assess the effect of the training using the SBAR communication tool on Nurses' coordination competences.	Individual level	Questions 1,2,4,5,8 and 18
2. To assess the effect of the training using SBAR communication tool on Nurses' cooperation competences	Individual-level, Institutional level, Interpersonal level,	Questions 11,13,14,16,17,20,21 and 22
3. To assess the effect of the training using SBAR communication tool on Nurses' Partnership competences	Individual level, Institutional level, Interpersonal level	Questions3,7,9,10,12,13,15,19,23

3.10 DATA COLLECTION PROCEDURE

After ethical clearance of the study from the CHUK research committee, the research approached nurse's managers and explained about the research's aims and data collection process. With her approval the researcher was present in the morning staff to distribute questionnaires to the nurses on day duty, the data were collected in two phases on the same nurses using same questionnaire. The questionnaire adopted the Assessment of Inter-Professional Team Collaboration scale II (AITCs II) Tool which is designed and validated as a useful tool to evaluate IPTC was used to collect baseline data. After the end of this task data were entered in SPSS25 for future reference and analysis.

The following step was to train the same nurses how to use SBAR tool (see appendix 4) while informing their peer practitioners about patients' information. The training took 2 weeks, 2 sessions per week. 1 Session lasted 1 hour. By working together with the hospital, all nurses (30) participated in baseline data collection completed all sessions.

The researcher himself trained nurses. The assessment of understanding was done using teach back technique which is an agreed effective method to assess comprehension(Ha Dinh *et al.*, 2016).

The same data on nurses' perspectives of inter-professional team collaboration were collected on the same nurses after one week following the end of the training. Therefore, data from those 2 phases were merged together to proceed to data management and analysis.

3.11 DATA MANAGEMENT

The consent forms and data collection tools have been kept in a private room with a locked cupboard to ensure data security and privacy of information. After entering data in a computer, it has been locked with a personal password; the data backup was done on flash-drive to ensure security of information. The stored data will be archived for five years and then hard copies of the research will be destroyed.

3.12 DATA ANALYSIS

Data was analyzed using the Statistical Package for the Social Sciences (SPSS2525) and STATA15. Raw data from continuous variables were grouped into categories.

Descriptive analyses were also performed to understand the demographic characteristics of respondents (gender, age, working experience and education level) and the assessing the existing relationship between inter-professional team collaboration and demographic factors.

In addition to descriptive analyses, paired t-test was used to test whether there an overall significant improvement in inter-professional team collaboration. Further, the same test of improvement was performance individually on inter-professional team collaboration indicators (partnership, coordination and cooperation). Sub-indicators were considered to estimate the level of partnership among nurses whereas other sub-indicators were considered to estimate the level of coordination among nurses. The same as partnership, also sub-indicators were considered to estimate the level of cooperation among nurses.

Table 3-1:sub-indication used to evaluate the level of inter-professional team collaboration

Indicators		
Partnership	Coordination	Cooperation
Patients and provider inclusion	Apply unique definition of ITP	Member power sharing
Listen to patients' wishes	Equal work distribution	Member respect and trust
Member participation in treatment	Encourage open communication	Member honest and openness
Coordination of patients' care and social services	Use of standards conflicts resolution	Member make changes based on reflective reviews
Member uses consistent communication	Focus on patients' needs	Team considers mutual satisfaction
Member participation in goal setting	Transparency leader election	Team understand the limitation of each other
Encourage each other to improve patients' care	Inclusion of patients in members meeting	Team considers shared knowledge
Patients' relatives inclusion		Establish a sense of trust

3.13 ETHICAL CONSIDERATIONS

The study proposal was approved by the Institution Review Board of the University of Rwanda, College of medicine and health sciences. Authorization to collect the data was also obtained from the Kigali University Teaching Hospital Research committee. The participants were briefed on the voluntary nature of their participation in the study and necessary information was provided on study objectives and how to complete the questionnaires before beginning. Furthermore, anonymity and confidentiality was considered as before answering the questionnaire each participant signed the consent form. mentioning of participants' names was prohibited the researcher indicated them to use name initials only. The participants were informed that they are free to drop out of the study in case they felt like doing so.

3.14 DATA DISSEMINATION

This study results will be shared with the staff and management team at CHUK, with the UR school of nursing and midwives and the Rwandan Ministry of Health. This researcher will submit presentations to national and international conferences and write for publication in peer-reviewed journals.

3.15 LIMITATIONS AND CHALLENGES

This study faced some challenges. One of them is financial means that would be used to hire research associates to help me gather information to nurses and physicians from other departments or even from other hospitals to allow comparability of results and increase precision at the same time. The study reached only 30 nurses from urban areas only. Therefore, it is difficult to generalize the findings to the entire nursing population of Rwanda. Moreover, it was difficult to get probabilities in favor of inter-professional team collaboration given that nurses have been trained on SBAR or not.

In addition to a small population, this study did not evaluate the contribution of SBAR to the survivorship and recovery of patients as the main aim of the work of nurses and doctors. The author recommends future researchers to look at that angle.

CHAPTER 4: DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

This chapter summarizes the results of the analyses. Both descriptive and paired t-test were performed across different indicators of inter-professional team collaboration. The research is purposely conducted to investigate the effect of SBAR communication training on IPTC with the nurses at CHUK in the accident and emergency.

4.3 DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS

In order to analyze the effect of SBAR communication training on IPTC research participants' demographics such as sex, age, education level, and position held were collected.

Descriptive statistics of the sample included gender as 60% (N=18) were female and 40% (N=12) were male. The majority of participants (63.3 %) were aged between 30 and 35 years. As far as the educational level is considered, 66.7% (20) have a diploma education, and 33.3 % (10) have a bachelor's or master's degree. Lastly, 63.3 % (19) had working experience between 6 and 10 years. Table3 displays the details:

Table 4-1:Demographic characteristics of participants

Variables	Levels	Gender		Total
		Female	Male	
Age(Years)	30-35	11	8	19
	36-40	2	3	5
	>40	5	1	6
	Sub-total	18	12	30
Education Level	Bachelor's	5	5	10
	Diploma	13	7	20
	Sub-total	18	12	30
Experience (Years)	1-5	5	3	8
	6-10	10	9	19
	>10	3	0	3
	Sub-total	18	12	30

4.4 OVERALL EVALUATION OF EFFECT OF SBAR COMMUNICATION TRAINING

The difference in overall mean score before and after SBAR communication training was evaluated using the paired t-test. The p-value of **0.0002** which is greater than any value of significant level indicates that the intervention (training) had a significant impact on the improvement of communication at the accident and emergency department. Table4 displays the details:

Table 4-2:Overall test of difference in average score between before and after SBAR training

Variable	N	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	t	df	p-value
Overall-posttest	30	91.36667	0.871626	4.774092	[89.58399, 93.14934]	4.1050	29	0.0002
Overall-pretest	30	81.53333	2.466667	13.51049	[76.48843, 86.57823]			
Difference	30	9.833333	2.395438	13.12035	[4.934113, 14.73255]			

4.5 EVALUATION OF CONTRIBUTION OF PERFORMANCE ACROSS DIMENSIONS

4.5.1 PARTNERSHIP

The difference in the average score was tested based on scores for partnership sub-indicators only. Table 4. 3 summarize the results of the analysis. Based on the p-value of 0.0000 in the same table, we can conclude that partnership were increased after SBAR communication training intervention.

Table 4-3: Test of difference in average scores for partnership indicator

Variable	N	Mean	Std. Err.	Std. Dev.	[95% Conf.Interval]	t	Dt	p- value
Partnership- posttest	30	34.96667	0.4635776	2.539119	[34.01854, 35.91479]	6.8786	29	0.0000
Partnership- pretest	30	28.76667	0.7266414	3.979979	[27.28052, 30.25282]			
Difference	30	6.2	0.90134	4.936842	[4.356553, 8.043447]			

4.5.2 COORDINATION

The same as a partnership, Table6 indicates also that the coordination was significantly improved after SBAR communication training.

Table 4-4: Test of difference in average scores for coordination indicator

Variable	N	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	t	df	p-value
Coordination-posttest	30	35.3	.2801888	1.534657	[34.72695, 35.87305]	4.7948	29	0.0000
Coordination-pretest	30	30.13333	1.085678	5.946505	[27.91287, 32.35379]			
Difference	30	5.166667	1.077549	5.901977	[2.962832, 7.370501]			

4.5.3 COOPERATION

Unlike partnership and coordination indicators, Table7 indicates that at either 5% or 1% level of significance, we can conclude that there is no difference in average score before and after SBAR communication training for cooperation indicator (p=0.0920).

Table 4-5: Test of difference in average scores for cooperation indicator

Variable	N	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	t	df	p-value
cooperation-posttest	30	21.1	.5238013	2.868978	[20.02871, 22.17129]	1.7428	29	= 0.0920
cooperation-pretest	30	22.63333	1.033333	5.6598	[20.51993, 24.74674]			
Difference	30	-1.533333	.8798293	4.819024	[-3.332786, .2661197]			

4.6 ASSESSING THE ASSOCIATION BETWEEN COMMUNICATION AND SOCIAL DEMOGRAPHIC CHARACTERISTICS

The section evaluated the existing association between communication status (The level of communication after SBAR communication training grouped as improved if the overall score increase or not improved if the overall score reduced or remain the same). We evaluated this for overall scores and for each and every inter-professional team collaboration indicator (coordination, Partnership, and cooperation). However, Table8 indicates that at alpha =5% or 1% there is no significant relationship between inter-professional team collaboration and demographic characteristics. This could be explained by the fact that the numbers of participants fall within each are very few which hard for test statistic to discover patterns.

Table 4-6:Univariate analysis of communication status and demographic characteristics of participants

Variable	Levels	Communication Status		Total	Chi-square(P-value)
		Improved	Not improved		
Gender	Female	16	2	18	3.7578(0.053)
	Male	7	5	12	
	Sub-total	23	7	30	
Age (Years)	30-35	14	5	19	2.6970(0.260)
	36-40	3	2	5	
	>40	6	0	6	
	Sub-total	23	7	30	
Education	Bachelor's	6	4	10	2.3292 (0.127)
	Diploma	17	3	20	
	Sub-total	23	7	30	
Experience (Years)	1-5	6	2	8	1.0199 (0.601)
	6-10	14	5	19	
	>10	3	0	3	
	Sub-total	23	7	30	

CHAPTER 5. DISCUSSION OF RESULTS

5.1 INTRODUCTION

This chapter discusses the findings from the study and makes comparisons with what was found in similar studies like presentations of results and also discussion was done according to the objectives of the study.

5.2 FINDINGS FROM THE STUDY AND THEIR SIMILAR STUDY

This study sought to assess the effect of SBAR communication on IPTC among nurses at CHUK. Three research questions were considered to achieve the overall research objective. The main research question was: “*At what extend SBAR communication training can improve Nurses’ inter-professional collaboration competences at CHUK?*”. On the basis of the study results, SBAR training found to have a significant effect on IPTC (Pr (T > t) = **0.0003**). This confirms the plausibility of Ong and colleagues' (2019) model of interprofessional team collaboration. This result is an indication that the use of the SBAR tool while passing patients’ information can improve inter-professional team collaboration and lessen treatment failure in hospitals.

Several studies have similarly concluded that implementing the communication tool SBAR among pharmacy students(Kostoff *et al.*, 2016) ,anesthetists(Randmaa *et al.*, 2014) neonatal nurses and doctors(Raymond and Harrison, 2014), Nurses and Physicians(De Meester *et al.*, 2013) ,physicians and nurses working in perinatal services department surgical hospitals wards . In the study done by (Shahid and Thomas, 2018), results showed that SBAR has not only improved communication between professionals but also improved the safety climate and reduced incidents caused by communication errors.

De Meester and colleagues studied the effect of SBAR on the incidence of serious adverse events (SAE's) in hospital wards. They trained 425 nurses from 16 hospitals and the SBAR elements were checked before and after the training in two different years. After the training, they found an increased perception of effective communication and collaboration in nurses (from 58 (range 31–97) to 64 (range 25–97); $p < 0.001$), an increase in unplanned intensive care unit (from 13.1/1000 to 14.8/1000) admissions and a decrease in unexpected deaths (from 0.99/1000 to 0.34/1000) admissions. For his point of increase in communication, his finding does agree with

this study findings except for the cooperation competency(De Meester *et al.*, 2013). The disagreement found could be linked to the low sample size for this study.

Narayan, (2013)has added also that SBAR does not only improve inter-professional team collaboration but also reduces the rehospitalization of patients while increasing their safety.

However, some research findings revealed that the effect of SBAR on inter-professional team collaboration is little or unclear. One of them is Müller *et al.*, (2018) who in a short period confirm the existing effect of SBAR on both inter-professional team collaboration and reduction in patients' transfers as well as patients' hospitalization but their study revealed that in the long period the effect vanishes. This agrees also to this study for a short term period. However, further researches are needed to investigate the long term period relationship between the two.

The study also examines different competencies of interprofessional team collaboration given that SBAR training has been implemented or not. In this, the second, third and fourth research question was used to guide the process. The second research question concerned with coordination competency and it is entitled to: "*At what extend SBAR communication training can improve Nurses' coordination competences at CHUK?*"

The results for this specific objective indicate that the use SBAR communication tool has a significant effect on the improvement of the coordination among health care providers ($\text{Pr}(T > t) = \mathbf{0.0000}$). In other words, the tool easier the coordination between nurses bypassing patients' information effectively. This confirms the plausibility of previous researchers' findings on the role of SBAR communication on coordination among nurses and physicians (Wagner, 2018).

The second IPTC competency considered is cooperation as guided by the third research question: "*At what extend SBAR communication training can improve Nurses' cooperation competences at CHUK?*". This question sought to see whether SBAR communication can help health care providers to listen to everyone and value the viewpoints of all team members and to contribute everyone own views. Unlike coordination competency, the results show that the use of SBAR communication doesn't have any significant contribution to the overall cooperation level among health practitioners ($\text{Pr}(T < t) = \mathbf{0.0460}$).

This result converses with the literature. Testimonies from different studies and research findings revealed that the use of SBAR communication significantly improves cooperation. This might be caused by the study's small population which makes it difficult to learn possible patterns among data. However, the significance was confirmed for the third IPTC competency: partnership (Pr (T > t) = **0.0000**). This competency underlines the ability to create open and respectful relationships in which all members work equitably together to achieve shared outcomes. This result confirms the plausibility of (Reimer *et al.*, 2018).

The author tried to see whether the findings of this study are linked to any social demographic characteristics of questioned nurses but it turns out that there was insufficient evidence to prove any difference in results for any indicator considered (age, education level, working experience, and gender). However, this difference was significantly observed in previous researchers like (Dawod, Ali and Bahaaldeen, 2018) and (Eng, Kin and Mani, 2017).

The author regards this as the drawback of including fewer nurses in the study. This makes difficult for any statistical test of equality of scores on SBAR elements to discover every possible pattern across the social demographic pattern. This was cost-effective to the author and the results are promising for a large study sample.

Overall, the use of the SBAR communication tool proved to be a beneficial tool to improve interprofessional collaboration competencies among nurses employed full time in the emergency department at CHUK. The tool positively impacted nurses' competences and actions towards interprofessional collaboration. While there are many strengths to this study, it is not without limitations. Future studies could use large samples and follow up study in order to see if the change observed have been sustained after a given period of time. The results of our study are reported for a single group of Nurses with no control group to serve as a benchmark for comparison.

We would also recommend the use of the SBAR tool not only among nurses but also among other healthcare professionals such as doctors, pharmacists, etc. In this study, nurses reported that using the SBAR communication tool enhanced their ability to collaborate and agree on patients' care when speaking to their colleagues. This has potential implications for improved patient care and safety. However, our study has not explored the relationship between improved

inter-professional collaboration and patients' outcomes. Moving forward, these limitations could be addressed by other studies and the use of the SBAR communication tool will continue to improve interprofessional collaboration among healthcare providers in LMICs.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter provides a conclusion basing on the presented and discussed results as well as providing recommendations for improving the identified gap.

6.2 CONCLUSION

This study sought to assess the effect of SBAR communication on inter-professional team collaboration at CHUK. The study used 30 nurses to operate at CHUK in an emergency to evaluate their professional team collaboration competencies. The data were collected in two phases: one before the SBAR training another after the SBAR training.

As expected, the results of analyses revealed that SBAR communication can help to improve the IPTC among health nurses and physicians. In the same way, SBAR communication was found also to influence the overall level of partnership and coordination among nurses and physicians. However, this positive relationship was not obtained for cooperation competency. Moreover, there is no difference in any inter-professional team collaboration competencies among different demographic characteristics.

Therefore, based on these findings the author outlines recommendations in the following section.

6.3. RECOMMENDATION RESEARCH

Following the outcomes of this study, the author recommends the following:

- **Practice:** The ministry of health to initiate the use of SBAR communication in all hospitals start from the departments that receive critical patients to lessen the treatment failure resulted from miscommunication.
- **Education:** The ministry of education to incorporate this program into the current program used to train nurses and physicians.
- **Research:** Research organizations as well as individual researchers to extend this research to the large scale practitioners to test the generalizability of these findings to the whole Rwandan health practitioners or even beyond.

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A.APPENDICES

A. 1. Test of reliability of data before intervention

Item	N	Sign	item-test correlation	item-rest correlation	Average interitemcovariance	alpha
Gender	30	+	0.2087	0.1744	.2588647	0.8974
Age	30	+	0.3013	0.2471	.2540018	0.8970
Education level	30	+	0.0358	0.0017	.2625641	0.8990
Experience	30	+	0.0828	0.0408	.2615561	0.8991
Patients and provider inclusion	30	-	0.1644	0.0852	.2584934	0.9019
Listen to patients' wishes	30	+	0.3450	0.2944	.2527816	0.8961
Member participation in treatment	30	+	0.5739	0.5243	.2412166	0.8919
Coordination of patients' care and social services	30	+	0.2294	0.1712	.2564032	0.8984
Member uses consistent communication	30	+	0.4934	0.4363	.2442087	0.8937
Member participation in goal setting	30	+	0.5211	0.4643	.2425252	0.8932
Encourage each other to improve patients' care	30	+	0.5707	0.5158	.2396569	0.8920
Patients' relatives inclusion	30	+	0.3167	0.2283	.2498426	0.9001
Member power sharing	30	+	0.7842	0.7466	.2253687	0.8860
Member respect and trust	30	+	0.7118	0.6731	.2343943	0.8886
Member honest and openness	30	+	0.7791	0.7493	.2325164	0.8872
Member make changes based on reflective reviews	30	+	0.7494	0.7210	.2372591	0.8886
Team consider mutual satisfaction	30	+	0.7591	0.7263	.2327427	0.8875
Team understand the limitation of each other	30	+	0.6731	0.6346	.2383024	0.8898

Team consider shared knowledge	30	+	0.6860	0.6466	.2366331	0.8894
Establish a sense of trust	30	+	0.4226	0.3764	.2504156	0.8948
Apply unique definition of ITP	30	+	0.6128	0.5637	.2384898	0.8910
Equal work distribution	30	+	0.6246	0.5832	.240824	0.8910
Encourage open communication	30	+	0.7531	0.7094	.2259416	0.8869
Use of standards conflicts resolution	30	+	0.6796	0.6400	.2371105	0.8896
Focus on patients' needs	30	+	0.6578	0.6081	.2342175	0.8898
Transparency leader election	30	+	0.5439	0.4678	.2356676	0.8939
Inclusion of patients in members meeting	30	+	0.4490	0.3731	.2429885	0.8959
Test scale (Before intervention)					.2431477	0.8967

A. 2. Test of reliability of data after the intervention

Item	N	Sign	item-test correlation	item-rest correlation	Average interitemcovariance	alpha
Gender	30	+	0.2190	0.1335	.0306596	0.6610
Age	30	-	0.3054	0.1674	.0294925	0.6606
Education level	30	+	0.3330	0.2550	.0297188	0.6530
Experience	30	-	0.1007	-0.0034	.0318408	0.6722
Patients and provider inclusion	30	+	0.2146	-0.0210	.0322865	0.7069
Listen to patients' wishes	30	+	0.5804	0.5111	.0271724	0.6325
Member participation in	30	+	0.6051	0.5532	.0277878	0.6357

treatment						
Coordination of patients' care and social services	30	+	0.4222	0.3845	.0301291	0.6529
Member uses consistent communication	30	+	0.2724	0.1759	.0300866	0.6581
Member participation in goal setting	30	+	0.4769	0.4188	.0289195	0.6450
Encourage each other to improve patients' care	30	-	0.1384	0.0747	.0313316	0.6638
Patients' relatives inclusion	30	-	0.3720	0.2331	.0284951	0.6535
Member power sharing	30	+	0.4730	0.3741	.0276463	0.6400
Member respect and trust	30	+	0.6636	0.6117	.0269036	0.6287
Member honest and openness	30	+	0.7089	0.6856	.0288559	0.6423
Member make changes based on reflective reviews	30	-	0.3278	0.2618	.0299805	0.6538
Team consider mutual satisfaction	30	-	0.3388	0.2740	.0299169	0.6532
Team understand the limitation of each other	30	+	0.1988	0.0922	.0308294	0.6650
Team consider shared knowledge	30	+	0.1550	0.0915	.0312255	0.6629
Establish a sense of trust	30	+	0.2651	0.1894	.0303413	0.6575

Apply unique definition of ITP	30	-	0.4097	0.3129	.0285376	0.6465
Equal work distribution	30	+	0.1945	0.0955	.0308647	0.6642
Encourage open communication	30	-	0.4464	0.2326	.0268541	0.6629
Use of standards conflicts resolution	30	-	0.1839	0.0317	.0313316	0.6769
Focus on patients' needs	30	+	0.0553	-0.0730	.0327392	0.6826
Transparency leader election	30	-	0.7746	0.7085	.0229779	0.5978
Inclusion of patients in members meeting	30	-	0.4598	0.3751	.0282122	0.6424
Test scale (After intervention)					.0294495	0.6636

A.3. Consent Form

Introduction

Lack of concise communication between healthcare providers impacts patient care safety, improving communication methodology may enhance inter-professional collaboration among healthcare workers. The study participants are emergency room nurses at the primary referral facility in Kigali, Rwanda. An evidence-based communication skills program entitled Situation, Background, Assessment, and Recommendation (SBAR) will be evaluated regarding Inter-professional team collaboration (ITC).

Purpose of the Study

Is to implement SBAR communication education and training and pre and posttest Interprofessional Team Collaboration perspectives.

Voluntary Participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all the services you receive at this clinic will continue and nothing will change. If you choose not to participate in this research project, you may change your mind later and stop participating even if you agreed earlier.

Confidentiality

The information that we collect from this research project will be kept confidential. Information about you that will be collected during the research will be put away and no-one, but the researchers will be able to see it. Any information about you will have a number on it instead of your name. Only the researchers will know what your number is, and we will lock that information up with a lock and key. It will not be shared with or given to anyone except [name who will have access to the information).

If you have any questions you may ask them now or later, even after the study has started. If you wish to ask questions later, you may contact any of the following

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked to have been answered to my satisfaction. I consent voluntarily to participate as a participant in this research.

Print Name of Participant _____

Signature of Participant _____

Date _____

Day/month/year

A. 4. Assessment of Inter-Professional Team Collaboration scale II (AITCS-II)

The AITCS is a diagnostic instrument that is designed to measure the inter-professional collaboration among the team members. It consists of 23 statements considered characteristics of inter-professional collaboration (how team works and acts). The scale items represent three elements that are considered to be key to collaborative practice these subscales are:

(1) partnership (2) cooperation (3) coordination

Scoring AITCS

Respondents indicate their general level of agreement with items on a 5- point rating scale that ranges from 1= never, 2= rarely, occasionally, 4= most of the time, to 5 = always.

Demographic information

Please check the category you belong to:

Gender: Male Female **Age:** ____year

Employment Status: FT PT Casual

Educational Preparation

- Certificate Bachelor's degree
- Diploma Master's Degree
- Other (specify): _____

Please check one of the following discipline categories:

- Pharmacy Paramedics
- Clinical Kinesiologist Dental Assistant
- Physician (Medicine) Social Worker
- Nursing: Registered Nurse Nursing: Practical Nurse
- Other (please specify) _____

Years in practice (since achieving license to practice): _____ years with your current team: _____

Instructions:

Note: Several terms are used for the person who is the recipient of health and social services. For the purpose of this assessment, the term ‘patient’ will be used. While acknowledging other terms such as ‘client’ ‘consumer’ and ‘service user’ are preferred in some discipline’s jurisdictions.

Please **circle the value** which best reflects how you currently feel your team and you, as a member of the team, work or act within the team.

1	2	3	4	5
Never	Rarely	Occasionally	Most of the time	always

Scoring of the AITCS-II Practitioner

1. Add ratings (on the 5- point scale) together for each subscale as follows:

Partnership (8 items)

when we are working as a team all off my team members.

1	include patients or provider in setting goals for care	1	2	3	4	5
2	listen to the wishes of their patients when determining the process of care chosen by the team	1	2	3	4	5
3.	meet and discuss patient care needs	1	2	3	4	5
4.	coordinate health care and social services (e.g. financial, occupation, housing, connections with community, spiritual) based upon patient care needs	1	2	3	4	5
5.	Use consistent communication with to discuss patient care between providers	1	2	3	4	5
6.	Are involved in goal setting for each patient	1	2	3	4	5

7.	encourage each other and patients and their families to use the knowledge and skills that each of us can bring in developing plans of care	1	2	3	4	5
8.	work with the patient and his/her relatives in adjusting care plans	1	2	3	4	5

Cooperation (8 items)

When we are working as a team all of my team members----

9.	share power with each other	1	2	3	4	5
10.	respect and trust each other	1	2	3	4	5
11.	are open and honest with each other	1	2	3	4	5
12.	make changes to their team functioning based on reflective reviews	1	2	3	4	5

13.	strive to achieve mutually satisfying resolution for differences of opinions	1	2	3	4	5
14.	understand the boundaries of what each other can do	1	2	3	4	5
15.	understand that there are shared knowledge and skills between health providers on the team	1	2	3	4	5
16.	establish a sense of trust among the team members	1	2	3	4	5

Coordination (7 items) total possible rating is from 1 to 35

When we are working as a **team** all of my team members

17.	apply a unique definition of <i>Inter-professional collaborative practice</i> to the practice setting	1	2	3	4	5
18.	equally divide agreed upon goals amongst the team	1	2	3	4	5
19.	encourage and support open communication, including the patients and their relatives during team meetings	1	2	3	4	5
20.	use an agreed upon process to resolve conflicts	1	2	3	4	
21.	support the leader for the team varying depending on the needs of our patients	1	2	3	4	5
22.	together select the leader for our team	1	2	3	4	5
23.	openly support inclusion of the patient in our team meetings	1	2	3	4	5

Thank you for completion of this questionnaire!

A. 5. Approval E-mail for TOOL Usage

From: Carole Orchard <corchard@uwo.ca>

Subject: RE: AITCS tool request

Date: September 24, 2018 at 4:59:05 PM GMT+2

Hello Rebecca,

Would you please ensure you are only using the items found now in the AITCSW-II for practitioners. This is only 23-items. They are all included already but please delete the other items before using. I am attaching the new version. I am also attaching the paper published for this work. Please do not copy or share it as there is currently a publication embargo on it until next January. However, you will need to psychometrics for the ethics. The student version is now a different instrument. If you wish to also collect data from students let me know so that I can provide the other version. I hope this is helpful. You of course are welcome to use the instrument. We only request a set of cleaned data once the study is completed. We use these data sets for further psychometric testing and improvement of the instrument.

Carole

From: Rebecca White [<mailto:greekbecky1@gmail.com>]
Sent: Monday, September 24, 2018 9:30 AM
To: Carole Orchard <corchard@uwo.ca>; FaustinCmhs 2017/2018 <gatokgt@yahoo.com>
Subject: AITCS tool request

Dear Dr. Orchard,

I am supervising an MSN student at the University of Rwanda. We would like to use the AITCS tool in a small sample of nurses at the referral hospital in Kigali Rwanda post SBAR training as a step to future IPE programs. This would be completed over the next few months with full IRB approval from the University of Rwanda.

Sincerely,

FaustinGatare and Rebecca White

Appendix: 6 SBAR Communication Format

SBAR format

Date/time: _____ / _____	
S	<p><u>Situation</u></p> <p>I want to tell you about (patient name and location) _____</p> <p>The patient's code status is : _____ code status modified code Do not resuscitate</p> <p>The patient's main problem is : _____</p> <p>I have just assessed the patient personally:</p> <p>Vital signs are: B/P _____ Pulse _____ Respiration _____ Temperature _____</p> <p>I am concerned about:</p> <p>HR<40 HR>130 SBP<90 mmHg SBP>200 mmHg RR>30 RR<8 Spo2<90%</p> <p>Bleeding onset seizures Temp>104F Temp<96 mental status change family concerned</p> <p>Other _____</p>
B	<p><u>Background</u></p> <p>Current diagnosis: _____</p> <p>Patient's mental status is :</p> <p>Comatose, combative or agitated, stupor us and not talking, possible not able to swallow, eyes is closed, alert and oriented to person, place and time, confused and cooperative, confused and non-cooperative , not respond to stimulation, confused and non-cooperative.</p> <p>The skin is:</p> <p>Extremities are warm, extremities are cold, warm and dry, pale, diaphoretic</p>

	<p>The patient is : on oxygen Not on oxygen</p> <p>Currently on _____ (l/min) Oxygen sat____% oxygen history: _____(1/min)sat ____(%)</p>
A	<p><u>Assessment</u></p> <p>This is what I think the problem is:1)_____2)_____3)_____</p> <p>OR</p> <p>The problem seems to respiratory</p> <p>I do not know what the problem is, but the patient is deteriorating</p>
R	<p>Recommendation</p> <p>Order tests: ABG CBC BMP BNP INR PTT Blood cultures X2 CXR EKG CT head without contrast other _____</p> <p>Airways: oral airway Bag/mask NT suction Bi-pap intubation</p> <p>Circulation: IV bolus Vasopressors Blood</p> <p>Medications: -----</p> <hr/> <p>Protocols: stroke symptom protocol Acute coronary syndrome Hypoglycemia protocol</p> <p>Other: transfer to critical care unit patient to be see</p> <p>Talk to the patient or family about code status</p>