

Benefits of a Mentorship Program on Interprofessional Collaboration in Obstetric and Neonatal Care in Rwanda: A Qualitative Descriptive Case Study

Assumpta Yamuragiye^{1*}, Jean Pierre Ndayisenga^{2,3}, Aimable Nkurunziza^{2,3}, Olive Bazirete², Marie Chantal Uwimana²

¹*School of Health Sciences, University of Rwanda, Kigali, Rwanda*

²*School of Nursing and Midwifery, College of Medicine and Health Sciences, University of Rwanda, Kigali, Rwanda*

³*Arthur Labatt Family School of Nursing, Faculty of Health Sciences, University, London, Ontario, Canada*

***Corresponding author:** Assumpta Yamuragiye. School of Health Sciences, University of Rwanda, Kigali, Rwanda.
Email: assumpta1@gmail.com, ayamurag@uwo.ca.

Abstract

Background

Interprofessional collaboration (IPC) contributes to optimum patient outcomes. The Training, Support, Access Model for Maternal, New Born, and Child Health (TSAM – MNCH), a project initiated as an innovative model for Rwanda, has provided a mentorship program to improve the quality of emergency obstetric and neonatal care (EmONC) including IPC. However, no research has been conducted to understand the impact of that mentorship on IPC practice.

Study objective

To identify the impact of the TSAM mentorship on IPC practice in Rwanda from the perspective of hospital managers where TSAM mentorship was implemented and healthcare professionals (HCPs) participated in the mentoring program.

Methods

A qualitative descriptive case study was conducted in five district hospitals in the Northern Province of Rwanda. Interviews were conducted with hospital directors and twenty-five HCPs mentees. Data were recorded, transcribed verbatim, and analyzed to identify emergent themes.

Results and discussions

Four themes emerged: a) experience with IPC and TSAM mentorship; b) benefits of TSAM mentorship on IPC, c) challenges with mentoring programs, and 4) suggestions to improve TSAM mentorship.

Conclusion

The findings indicated an increase in self-confidence and awareness of responsibilities, which contributed to the improved working relationship among the team involved in EmONC.

Rwanda J Med Health Sci 2023;6(1):71-83

Keywords: Mentorship, Interprofessional collaboration, Rwanda

Introduction

Interprofessional collaboration (IPC) is an important aspect to consider in delivering emergency obstetric and neonatal care (EmONC) as patient outcomes rely on the collective efforts of various health practitioners collaborating to provide quality health care services.[1] IPC is a practice where two or more healthcare professionals work together to improve client's health outcomes by considering the client at the center of care.[2] The World Health Organization (WHO) has advocated for IPC in healthcare settings because effective IPC improve patient care and outcomes, reduces medical errors, reduces inefficiencies and healthcare costs, improves staff relationships and improves job satisfaction. [3] In obstetrical and neonatal care services, IPC aims to reduce maternal and neonatal mortality rates. However, failure in effective collaboration between medical doctors and midwives but also other obstetric care teams, has been reported by several studies worldwide.[4, 5,6,7]

Within the context of Rwanda, a small landlocked country located in Sub-Saharan Africa (SSA), the maternal death audit conducted between 2009 and 2013 identified among other causes of maternal deaths, poor team collaboration between health care providers as well as patients. [8] Even though the number of maternal death related to ineffective collaboration was not revealed, the audit recommended enhancing health care team collaboration, to improve the quality of care and contribute to maternal mortality reduction.[8] Rwanda has made positive progress in reducing maternal and neonatal mortality rates, and the Maternal Mortality Rate (MMR) has been reduced from 290/100,000 live births in 2015 to 203/100,000 live births in 2020.[9] The neonatal mortality rate (NMR) decreased from 27/1,000 in 2010 to 20/1,000 live births in 2015 and to 18/1,000 live births in 2020.[9] Moreover, the target is to achieve at least 15.2 per 1000 live births by 2024. Despite this enormous success in maternal health, Rwanda still needs to triple efforts

to achieve sustainable development goals (SDGs) related to maternal and child health. [10]

One way of reducing maternal and neonatal mortality in Rwanda is by improving the availability, accessibility, quality, and use of services for treating pregnancy and childbirth-related complications.[8] The quality of care cannot be achieved without effective IPC. One of strategies proposed by the Rwanda Ministry of health to improve maternal newborn quality of care including IPC and reduce hospital-based maternal and the neonatal mortality rate was mentorship. [11]

The usefulness of mentorship in improving IPC has been widely discussed in the literature. For instance, a study conducted in Tanzania to improve maternal and newborn health through clinical mentoring reported an improvement in communication among nurses and midwives, which contributed to patient safety.[12] Similarly, a study conducted in Rwanda about mentorship to improve quality care supported the importance of mentorship in improving a number of healthcare quality indicators, including IPC.[11]

A review of literature conducted in 2018 has identified mentorship as a valuable strategy to foster multidisciplinary collaboration in health care.[13] Furthermore, Washington and collaborators[14] identified an improvement in working relationships when providing quality maternal and newborn care due to regular supervision by nurse mentors assigned to mentor staff in primary health care services.

The mentorship program in Rwanda

In 2017, the Training Support Access Model for Maternal, Newborn, and Child Health in Rwanda (TSAM-MNCH), a four-year project funded by global affairs Canada in collaboration with the Rwanda Ministry of Health, started mentorship programs for healthcare providers providing obstetric and neonatal care. In that mentorship, IPC was one of the components

to focus on. Experienced nurses, midwives, gynaecologists, obstetricians, paediatricians, and anesthesiologists were selected as district hospital mentors. The TSAM project collaborated with the respective health professional councils to identify experienced mentors with the capacity to mentor healthcare providers in selected district hospitals. Furthermore, mentors underwent a three-day education workshop to prepare them to start their work. They were educated about their role as mentors and how to support mentees and encourage them to engage in reflective practice.[15] The primary role of mentors was to facilitate mentees' skills development and collaborative practice to improve their practice in maternal and newborn care. Experts from Canadian universities, the University of Rwanda and health professional councils facilitated the educational sessions organized in the form of training of trainers.

In addition, before starting mentoring, after a three-day educational workshop, mentors had a one-day field visit to assess the clinical sites where they would be mentoring and be introduced to hospital managers to have initial contacts. In the TSAM mentorship model, mentorship visits happened once a month and mentors worked with mentees for three consecutive days. The mentors' teams worked as interprofessional team made by four professionals composed by an obstetrician, a nurse or midwife, an anesthetist and a pediatrician.[16]

The idea of having the IPC teams emerged with the argument that no single profession can work alone and be effective in providing maternal and neonatal care. Maternal care may face emergency situations which require IPC teams to be effective and deliver quality of care. Therefore, the TSAM project has considered IPC essential in its mentorship model to strengthen the quality of care. Each team played its role in collaboration with other IPC teams where necessary to show the mentees a good standard of practice.

Mentors were paired with mentees sharing the same area of expertise to improve

the knowledge and skills and conduct a self-evaluation at the end of the day and get feedback. For instance, an experienced anesthetist would work with a less experienced anaesthetist; similarly, a senior nurse or a midwife would work with a less experienced nurse or midwife. Likewise, a gynaecologist and a paediatrician would also work with a general practitioner to provide coaching and assist in building capacity by increasing knowledge and technical skills.

Primary mentors' activities included bedside teaching, discussion on case management, presentations of various maternal and newborns care topics in morning staff meetings, operating theatre skills reinforcement, training of mentees using simulations, and participation in developing and implementing quality improvement projects.[16]

Mentorship started in June 2017, and initially, five district hospitals in the Northern Province of Rwanda, including, Byumba, Kinyinya, Nema, Ruli, and Rutongo as per the Rwanda ministry of health recommendation to the TSAM -MNCH project. In August 2018, mentorship programs were also initiated in other five district hospitals, namely Gakoma, Gitwe, Kabgayi, Kibirizi, and Ruhango in the southern province of Rwanda.[16] The MoH in Rwanda directed the TSAM project to focus on specific districts in the Northern and Southern provinces, where the MoH deemed most needed for a formal mentorship program for health professionals.

Regarding mentees selection, the TSAM project collaborated with the management of the assigned district hospitals to develop a list of mentees from the five district hospitals. The mentees included three categories of professionals: nurses and midwives, medical doctors who were general practitioners in district hospitals in Rwanda and anaesthetists. The number of mentees varied for each of the selected hospitals. In total, 75 mentees benefited from mentorship visits in the northern province until June 2019, and the total number of mentorship

visits by mentor teams was 11 by the time of the research. Since the TSAM mentorship was supposed to last for two years, it was expected to increase the number of visits as the implementation progressed. The main areas of mentorship were IPC, technical skills such as management of caesarian section, normal delivery, and essential newborn care.

During the visits, mentors worked as interprofessional team in maternity services composed by nurses and midwives, gynecologists, obstetricians, anesthesiologists/anesthetists and pediatricians. Mentors worked hand in hand with mentees; the ratio was one mentor to one mentee. At the end of each visit, mentors had a debriefing session with mentees to discuss the improvement in professional practice in a friendly and supportive manner to assist mentees in skills development in different areas of maternal and newborn care.[15]

Even though the TSAM mentorship program focused on different aspects of MNCH, the purpose of this study was to understand from healthcare professionals who benefited from the TSAM mentoring program, how it has helped them improve IPC practice among the team involved in management of obstetric and neonatal emergencies. Conducting research after the implementation of the mentorship could provide relevant evidence which can be helpful for policymakers, administrators and implementers to guide improvement in maternal and newborn care to contribute to the achievement of sustainable goals related to maternal and newborn health. Therefore, the findings could inform TSAM management, hospital managers, policymakers and the Ministry of health about the benefits of mentorship programs and probably extend mentoring programs nationally. In addition, the findings could likely contribute to the body of knowledge in response to the scarcity of literature around mentorship in limited resource settings. Furthermore, the findings from this study could inform others who wish to implement the same mentorship model in similar settings.

Material and Methods

Study site

This study was conducted in Byumba, Kinyinyira, Nembura, Ruli and Rutongo, which are five district hospitals in the Northern province of Rwanda assigned by the TSAM project for MNCH in Rwanda. Healthcare providers working in these hospitals have benefited from the mentorship program since May 2017. In this mentorship, IPC was one of the components introduced in the training of the mentors before they engaged in their mentorship roles. Other components technical skills including management of caesarian section, normal delivery, and essential newborn care.

Study design, sample size determination and sampling method

The study used a qualitative descriptive case study design [17] underpinned by a constructivist paradigm and a relativist ontology that consider multiple realities. [18] The qualitative case study in general is a valuable approach when the study aim is to understand complex phenomena happening within a specific social context. Also, qualitative descriptive case study methodology is valuable approach for program evaluation.[17] Consequently, given the nature of research questions in this study, the qualitative descriptive case study design was an appropriate approach to understanding how TSAM project mentorship program has helped to improve IPC among professionals working in maternity services in five district hospitals in the northern province of Rwanda. The constructivism lens used in this study was a best paradigm to assist the researcher to rely on participants views about the phenomena under study and construct a meaning through information exchange.[19] According to constructivism paradigm, truth is relative and depends on one's perspective which also depends on subjective meaning. [18] One of the advantages of constructivism is a close collaboration between the researcher and participants to enable participants to tell their stories.

Accordingly, through this research, participants described their views about the TSAM mentoring program enabling the researcher to understand better participants' experiences in relation the impact of the TSAM mentorship on IPC practice.[20]

In this study, the case is health care providers involved with EmONC, including medical doctors, anaesthesia providers, nurses and midwives who underwent mentorship program by the TSAM project. In total the sample included 25 mentees from the five hospitals and this was determined according to data saturation during interviews. Also, five hospital directors participated in interviews to give their perception about the TSAM mentorship model and its impact on IPC practice.

Participants characteristics

Twelve participants were female while thirteen were male, and most were between 27-35 years old. The youngest was 27, and the oldest was 48. Most participants hold an advanced diploma in nursing or anaesthesia.

Regarding medical doctors, all were general practitioners having a bachelor's degree in general medicine and surgery. Most participants' work experience in the maternity department ranged from one to five years.

Table 1. Summary Characteristics of participants and study sites

Location of hospitals	Hospitals	Nurses mentees	Midwives mentees	Medical doctor mentees	Anesthetist mentees	Head of hospital (Medical doctors)
Rulindo district	Kinihira	0	2	2	2	1
	Rutongo	1	1	0	2	1
Gakenke district	Ruli	0	2	1	2	1
	Nemba	1	1	2	1	1
Gicumbi district	Byumba	1	1	1	2	1

Data collection method and instruments

A list of all mentees was obtained from the TSAM project manager and the researcher met participants in person in their working places and explained the research nature. The researcher left the information letter and personal phone and email contacts so that whoever wished to participate in the study could make contact and fix an appointment to meet and sign a consent form and conduct the interview. Semi-structured interviews were used to collect data. Each interview was approximately 45 to 60 minutes in length. One by one interview was audio-recorded and then transcribed verbatim into a written form to be studied in detail. The semi-structured interview guides that were used had been used for similar studies assessing collaboration in health care settings.[21]

However, it underwent slight modification for contextualization. A group of researchers who are expert in mentorship and qualitative research approved the updated guide to be used for this study. The following questions were asked :

- 1) What is your perception about IPC in EmONC?
 - 2) In which way TSAM mentorship programs improved the IPC among team involved in management of EmONC were asked.
- For hospital managers, the following questions were added on their semi-structured interview guide :
- 1) Tell us about strategies you use to promote interprofessional collaboration among healthcare professionals dealing with EmONC?
 - 2) How do you see the sustainability of IPC in EmONC practice at your hospital?

Data Analysis

Data analysis and data collection was done simultaneously following case study methodology,[17] since one informs another iteratively. However, analysis became intense after all data was gathered. All transcripts were translated from Kinyarwanda into English before analysis, and field notes were also analyzed to enrich the data. Interviews recorded were transcribed verbatim and coded using qualitative software NVIVO Pro version 12.[22] Following the six phases as detailed by Braun and Clarke,[23] content analysis was done to identify emergent categories and themes.

The first step involved repeatedly reading the transcripts to get familiar with the data and get a sense of the whole, secondly, initial coding was done by highlighting the exact words from the text that appeared to capture key thoughts or concepts. Thirdly, search for themes or main ideas occurred from the coded data and the then main ideas with similar codes were sorted into themes and linked where relevant. The fourth step was to group the emergent ideas into themes. Lastly, in the fifth step, themes were named and defined to describe 'HCP's experiences about TSAM mentorship and its impact on IPC practice and write the report.[23]

Quality criteria consideration

Credibility, conformability, dependability and transferability are essential quality criteria to ensure rigor in qualitative research.[18,20] To achieve credibility in this study, the researcher used semi-structured interview guides and asked for clarifications during the actual interviews to confirm that she has correctly understood what the participants were telling her. Additionally, the sample involved participants from different categories to ensure credibility through data triangulation.[24]

Dependability was ensured by peer examination and iterative comparison of data from mentees and hospitals, and illustrative quotes were used. Furthermore, to ensure conformability, transcriptions, documents, findings, interpretations, and

recommendations are kept, to be available and accessible to any other researcher, for conducting an audit trail. Moreover, a thick description of the context was provided to allow other researchers in a similar context to reach informed decisions.[18,20]

Ethical considerations

Permission to conduct the study was obtained from the University of Western Ontario ethics board and the University of Rwanda College of Medicine and Health Sciences Institutional Review Board. A letter of information was given to eligible participants and informed consent was signed before participating in the study. The interviews were conducted in different comfortable locations from work settings. The researcher used to book for a comfortable room at each hospital setting where data collection was conducted. Participants were also assured that all information recorded would be kept confidential, with only the researchers having access to the data. Data were saved in a computer that is password protected and transferred to the University of Western Ontario One Drive for more protection. The confidentiality and anonymity of their data were guaranteed, in that each participant was associated with a code or pseudonym instead of their name. For instance, the first participant at the first hospital was represented as H1P1.

Results

The findings from this study originated from 30 healthcare professionals, including 25 mentees and five directors general from five district hospitals who participated in semi-structured interviews. Mentees were in three categories, including anesthesia providers (n = 9), nurses and midwives (n = 10) and medical doctors (n = 6). Four significant themes related to IPC experience and TSAM mentorship were identified from health care professionals dealing with EmONC:

- 1) Experience with IPC and TSAM mentorship program
- 2) Benefits of TSAM mentorship
- 3) challenges
- 4) Suggestions to improve TSAM mentorship program

Experience with TSAM mentorship

Mentorship is when mentors and mentees work together to acquire new knowledge, skills and confidence.[25] According to Freedman [26] mentorship should be characterized by a respect and trust relationship. It is an opportunity for both mentors and mentees to learn and develop their professional competency to improve quality healthcare delivery.

Almost all participants from five district hospitals expressed a positive experience with TSAM mentorship and its impact on IPC. They mentioned that they had learnt from mentors' experiences as one participant said: *"The mentorship itself is a good model of interprofessional collaboration. The team of mentors comes as an interprofessional group composed of obstetricians, anesthesiologists, paediatricians, midwives. When we see how they interact, it teaches us how we should collaborate. Thus, we learn from their experiences"*. (H2P4)

Benefits of TSAM mentoring program on IPC

Improved collaborative practice

Most participants mentioned how the mentorship program had helped them improve their collaborative practice, including postoperative pain management, patient hygiene, management of postpartum hemorrhage, infection control, etc. in maternity. One participant said:

"I think mentorship especially that one for TSAM project has been very important to us. Together as a team concerned with patient pain management we collaborate effectively to manage the postoperative pain."(H4P4)

Participants expressed that they used to have difficulties in collaboration, especially when planning to do caesarian sections where the team could delay contact with anesthetists or sometimes had a misunderstanding between midwives and medical doctors. However, they mentioned that there has been a significant improvement since mentoring programs started:

"In case of cesarean section, we used to delay to contact anesthetist or there would be a misunderstanding between midwives

and medical doctors, but since mentors came, there is a significant improvement in collaboration".(H1P2)

Furthermore, participants mentioned a reduction of interprofessional collaboration conflicts as mentioned by one participant:

"Before they initiated the mentorship, there were always conflicts related to doctors and anesthesia providers who used not to come when we called them. But after mentorship, when we call somebody he just comes without delay unless he is busy with other duties. Such kinds of conflicts have reduced". (H4P5)

Additionally, participants expressed a reduction in a delay to provide patient care as one participant said:

"We are benefiting from mentorship, collaboration has improved since the mentorship started, there is no delay and the patient receives the quality of care as needed without wasting time and this is very different to what we used to do before" (H4P5)

Most participants expressed how TSAM mentorship has helped them in improving communication, especially handover reporting, charting patient information and mentors reminded mentees of the use of checklists to manage obstetric and neonatal emergencies *"... the mentorship has helped us to improve in completing the patient file. We chart all necessary patient information which has also improved the way we were taking care of our patients"*.H3P5

Furthermore, participants appreciated the TSAM mentoring program in improving communication

"...They (mentors) have also shown how to communicate effectively which helped us to improve our communication when managing obstetric and neonatal emergencies. Mentors have also reminded us to use checklists which helped us to improve our practice. The mentorship was very helpful ". (H4P3)

Participants expressed improvement in power dynamics between medical doctors and the rest of the obstetric care team as one participant mentioned: *“Before the medical doctor used to dictate and now mentors are reminding them the benefit of effective collaboration, the mentors propose the right way to proceed. So, slowly, bad routines are getting removed and mindsets are changing. So, mentorship is crucial for us”* (H1P4)

Self-confidence

Participants, especially midwives expressed how the mentoring program had helped them to improve their confidence and change their mindset as one participant said:

“.....we could not tell the doctor that we have performed a vaginal examination, in the fear of finding different results, but now we have corrected ourselves and we can tell him what we have found and let him perform an exam just to verify whether he will come up with similar results. So, the mentorship made us change our mind. We collaborate more”.(H1P1)

It is not only midwives who expressed their increase in confidence level, but mentorship has helped also general practitioners in improving their confidence as mentioned by one participant

“The mentorship is very beneficial, especially for us general practitioners, we meet very challenging cases and we learn how to manage them”(H3P4)

Additionally, most participants pointed out that TSAM mentorship has helped them understand their responsibilities, which improved their confidence in managing obstetric and neonatal emergencies.

“Mentorship has been of great importance. Everyone has understood his responsibility” (H1P1)

Moreover, participants appreciated the benefits of a mentoring program, especially because it is different from other types of training where they only got the theories without practicing them and get an opportunity for improvement.

Besides, working hand in hand with an experienced mentor increase the confidence as there is opportunity to practice what is learnt and when there is a mistake a mentee is corrected. One participant said:

“Regarding mentorship, it is very different from other types of training because in routine training, they put us in a room and give us only theories but in mentorship, we work together with mentors and when you commit a mistake he corrects it immediately and you learn from that mistake which improves your skills and increase confidence. I realize that mentors are committed and willing to help as much as they can”. (H2P3)

TSAM mentorship challenges related to improvement in IPC practice

When asked about challenges in mentorship related to the improvement on IPC practice, participants mentioned various challenges, including issues around IPC sustainability related to healthcare professionals who keep moving to look for jobs elsewhere. One participant said: *“We have a challenging problem of staff that cannot stay in one place, they keep moving from one hospital to another. Therefore, IPC skills got from the mentoring program they received are no longer useful to our hospital”.* (H5P7)

Another challenge was the duration of mentorship. Most participants highlighted that every mentorship visit lasted for three days which was not enough from participants' perspectives. One participant said: *“...The only thing is that mentorship takes a short time. It is only for three days. We as mentees we have that need for knowledge and we realize that three days are not enough”.* (H4P1)

Furthermore, participants talked about the issue of a long interval between visits with a risk of forgetting what they had been taught during the last visit as mentioned by one participant: *“...it takes a long time for mentors to come back. There is a long time between their visits with a risk of forgetting what they have taught us”* (H4P1)

According to some participants, there is a lack of protocols and guidelines in some aspects of care, which make them miss supporting documents to remain with knowledge from mentoring programs. One participant said: *“sometimes we miss the support to remain with the information provided, there are no protocols or guidelines, in the maternity service”* (H4P2)

Participants also mentioned the coordination issue and highlighted that they did not have the right schedule for mentorship visits, which made them not organized and ready for the visits.

“We do not have the right coordination, we must have a well-established plan. We are called unexpectedly, and we do not know when the mentors will come back. Sometimes we are in our leave, and we are called” (H4P2)

Despite TSAM mentorship benefits on IPC, participants expressed the shortage of staff as negatively affecting IPC practice in various ways. *“The main challenge we have is the insufficient number of medical workers. For instance, only one medical doctor can be available for the entire hospital, so when he is doing an operation, other cases which need his intervention are not treated and will wait for him and the rest of the team will also be waiting”* (H1P7)

Participants also expressed the failure in accomplishing the good work due to an insufficient number of medical personnel. For instance, a medical doctor may leave exhausted and fail to make a handover report, which can negatively affect the continuity of patient care. One participant said: *“A doctor may leave without availing the handover report showing what has been done, what remains and what is expected to be done with of cause a risk on the patient”*. (H4P7)

Suggestions to improve mentorship and improve IPC practice from mentees and Hospital directors perspectives

One of the challenges mentioned by participants was the insufficient of mentorship visits. When asked for suggestions to improve the mentorship program, most of the participants highlighted the need to increase the number of visits and reduce the time between mentorship visits as one of the participants said: *“it would be better to increase the number of mentorship visits and reduce the time between the visits”* H4P1.

Some participants appreciated the benefits of the TSAM mentorship program and suggested that every staff to undergo mentorship program. One participant said: *“I would suggest that every staff should undergo a mentorship program”*. (H3P5)

This perception was further enhanced by some participants who suggested receiving certificates indicating that they had completed the mentorship program as one participant said:

“I also suggest that we can be given certificates attesting that we have benefited from these types of training. It’s something that we can put in our CV”. (H4P2)

Additionally, participants suggested availing protocols that can guide their practice which could allow better collaborative approach. One participant mentioned: *“it would be better if they could avail protocols or even display them on the wall in maternity service so that we can refer to them and know what should be done. Anyone can check those protocols and organize his work”*. (H4P2)

Discussion

The purpose of this study was to explore the impact of the TSAM mentorship program on IPC practice by understanding from HCPs who participated in the mentoring program the benefits and challenges of TSAM mentorship on IPC practice in EmONC. Since the TSAM mentorship started, there has been no study conducted to explore its impact on IPC practice from the perspective

of mentees and hospital managers where mentorship was implemented. This study was conducted as part of large studies for program evaluation and has focused on IPC as the quality of EmONC cannot be achieved without effective collaboration between various healthcare professionals.[27]

The findings from this study highlighted that mentorship was useful and contributed to improved collaborative practice and self-confidence among professionals working in maternity services. This is in accordance with the findings from a scoping review of the mentorship of healthcare professionals in low and middle-income countries where mentorship was identified as effective in improving care quality.[1] The effectiveness of mentorship programs in improving the quality of care in general and IPC, in particular, is widely discussed. For instance, Amsalu et al. [28] in a study to understand the attitudes of nurses and physicians toward collaboration in Ethiopia, proposed mentorship as an effective strategy to improve collaboration. According to the study, when senior professionals mentor junior staff, it increases confidence, knowledge, and skills, improving collaborative practice. In addition, mentorship, especially in obstetric care context, improves quality of care in different aspects, including communication and working relationship in general.[29] Ensuring positive quality of care result in positive client outcomes and experience during the process of care as well as reducing harm to clients[30]. In the context of district hospitals of Rwanda, increased quality of care in obstetrics and maternity, in general, could reduce the number of referrals from district hospitals to a higher level of care and result in adequate quality of care at a minimum cost.[31]

However, despite its usefulness, the short duration of mentorship was identified by participants in this study; and this is similar to what was reported in a study conducted in Uganda to understand mentees experience. The study reported insufficient time allocated to mentorship as a barrier to successful mentorship and

therefore recommended having more time and structure for the mentorship programs. [32] However, the study did not propose sufficient time for the effective mentorship program.

A study conducted in Rwanda to understand midwives and nurses' experience in participating in continuous professional development (CPD) workshops demonstrated improvement in collaborative practice as a result of participating in the trainings, suggesting the need for CPD either in the form of mentorship or other kind of trainings.[33] However, the study focused only on two categories of professionals including nurses and midwives while the present study focused on three categories of healthcare professionals: medical doctors, anesthesia providers who were non-physician anesthetists, nurses, and midwives. Furthermore, the CPD was organized in the form of training delivered in a classroom session, which is different for mentorship, where mentors work with their mentees in a clinical setting.

The usefulness of mentorship in improving IPC and quality of healthcare services in a broad sense has been widely discussed in the literature, suggesting a need for a mentoring program in health services to increase self-confidence in clinical decision-making, improve the working relationships, especially in maternity care where there is a need to care for two people: the mother and the baby, which requires more than one profession to be successful.[12,34] The findings from this study should be useful for the mentoring program organizers, implementers including those in the TSAM-MNCH project as well as policymakers, administrators, and Rwanda Ministry of Health and district hospitals management to improve on mentorship programs to contribute to improved IPC as one of the strategies to enhance quality of services and contribute to the reduction of maternal and newborn mortality rate in Rwanda. Additionally, policymakers could consider the TSAM mentorship model, especially its IPC aspect of mentor teams

and its associated results about IPC to plan for healthcare system strengthening in terms of improving maternity staff working relationships. Furthermore, the study would contribute to knowledge about mentorship and IPC in EmONC and inform others looking to improve their mentoring program.

Limitations and strengths of the study

Despite the valuable findings from this study, there are some limitations to acknowledge. First, the results cannot be generalized as the study focused on specific district hospitals that benefited from the TSAM mentorship program. However, similar settings and programs can consider the study findings and methodology and apply them in similar contexts. Another limitation is related to a specific focus on mentees' and hospital directors' perspectives which did not allow understanding the IPC experience from other healthcare professionals who did not participate in mentorship programs.

Conclusion and study implications

This study explored the benefits and challenges of the TSAM mentoring program in IPC practice. IPC is essential in providing EmONC, as failure in effective collaboration can increase the risk of maternal and neonatal morbidity and mortality rates. Mentorship has demonstrated to be useful in improving IPC practice. In this study, the TSAM mentorship model has been helpful in improving IPC among HCP working in five DHs in the Northern Province of Rwanda. The findings can inform policymakers and other concerned authorities working in the area of maternal and child health about the benefits and challenges of the TSAM mentorship regarding IPC. Additionally, the findings can be useful to improve future mentorship programs or inform the possibility of extending the same mentorship model across the country to continue improving the quality of maternal newborn care.

This study identified barriers such as a lack of policies and guidelines that suggest a need for policy makers to develop policies and procedures to allow collaborative practices. Future research could consider exploring the impact of improved collaboration caused by mentoring programs in EMONC on patient outcomes concerning maternal and neonatal mortality rates. Also, the long term sustainability of IPC as a result of mentorship could be explored.

Acknowledgement

The authors would like to express their sincere gratitude to the study participants for having agreed to share their experiences related to the mentoring program by the TSM project

Conflict of interest

None to declare

Author's contribution

AY contributed to conception, data collection and analysis, interpretation of data and writing the first draft of the manuscript. All the other authors (JPN, AN, OB, MCU) contributed to crafting the manuscript for publication and approved the final version.

Funding

The authors are grateful to the Training Support Access Model for Maternal Newborn and child Health project in Rwanda for the financial support provided to conduct this study.

This article is published open access under the Creative Commons Attribution-NonCommercial NoDerivatives (CC BYNC-ND4.0). People can copy and redistribute the article only for noncommercial purposes and as long as they give appropriate credit to the authors. They cannot distribute any modified material obtained by remixing, transforming or building upon this article. See <https://creativecommons.org/licenses/by-nc-nd/4.0/>

References

- Schwerdtle P, Morphet J, Hall H. A scoping review of mentorship of health personnel to improve the quality of health care in low and middle-income countries. *Global Health. Globalization and Health*; 2017;13:77.
- John H.V. Gilbert JY, Hoffman SJ. A WHO Report: Framework for Action on Interprofessional Education and Collaborative Practice. *WHO*.2013;53:209–18.
- World Health Organization. Framework for Action on Interprofessional Education & Collaborative Practice. WHO. 2010; *WHO/HRH/HPN/10.3*
- Hastie C, Fahy K, C. H, K. F. Inter-professional collaboration in delivery suite: A qualitative study. *Women and Birth. Australian College of Midwives*; 2011;24:72–9.
- Forster, Alan J. Irene, Fung, Sharon Caugher, Lawrence oppenheimer, Cathy Beach, kaveh G. Shojania CVW. Adverse Events Detected by Clinical Surveillance on an Obstetric Service. *Obstet Gynecol. BMC Pregnancy and Childbirth*; 2015;106:128–39.
- Behruzi R, Klam S, Dehertog M, Jimenez V, Hatem M, McCulloch P, et al. Midwife–Physician Collaboration: A Conceptual Framework for Interprofessional Collaborative Practice. *J Midwifery Women’s Heal. BMC Pregnancy and Childbirth*;2015;60:128–39.
- Scott Reeves, Simon Lewin, Sherry Espin MZ. Interprofessional Teamwork for Health and social care. USA: *Blackwell Science Ltd*. 2010.
- Sayinzoga F, Bijlmakers L, Van Dillen J, Mivumbi V, Ngabo F, Van Der Velden K. Maternal death audit in Rwanda 2009-2013: A nationwide facility-based retrospective cohort study. *BMJ Open*. 2016;6:1–8.
- National Institute of Statistics of Rwanda, Ministry of Health, The DHS Program ICF. Rwanda Demographic and Health Survey 2019-2020: key indicators report. Demogr. *Heal. Surv*. 2020.
- World Health Organization, WHO, UNICEF, UNFPA, World_Bank_Group, UNPD. Trends in maternal mortality: 1990 to 2015. Executive Summary. *WHO* .2015;14.
- Anatole M, Magge H, Redditt V, Karamaga A, Niyonzima S, Drobac P, et al. Nurse mentorship to improve the quality of health care delivery in rural Rwanda. *Nurs Outlook. Elsevier Ltd*; 2013;61:137–44.
- Ojemeni MT, Niles P, Mfaume S, Kapologwe NA, Deng L, Stafford R, et al. A case study on building capacity to improve clinical mentoring and maternal child health in rural Tanzania: the path to implementation. *BMC Nurs. BMC Nursing*; 2017;16:57.
- Burgess A, van Diggele C, Mellis C. Mentorship in the health professions: a review. *Clin Teach. Blackwell Publishing Ltd*; 2018;15:197–202.
- Washington M, Jayanna K, Bhat S, Thomas A, Rao S, Perumal G, et al. Nurse Mentor Training Program to Improve Quality of Maternal and Newborn Care at Primary Health Centres: Process Evaluation. *Open J Nurs. Scientific Research Publishing, Inc.*; 2016;6:458–69.
- Project T, Training T, Health C. Nursing and Midwifery Policy Brief. 2019;1–4. Available from: https://tsam.uwo.ca/areas_of_focus/nursing_and_midwifery_policy_brief.html
- Ngabonzima A, Kenyon C, Hategeka C, Utuza AJ, Banguti PR, Luginaah I, et al. Developing and implementing a novel mentorship model (4+ 1) for maternal, newborn and child health in Rwanda. *BMC Health Serv Res. BMC Health Services Research*; 2020;20:924.
- Stake, R.E. (2005) Qualitative Case Studies. In: Denzin, N.K. and Lincoln, Y.S., Eds., *The Sage Handbook of Qualitative Research*, 3rd Edition, *Sage Publications, London*, 443-466.
- Denzin NK, Lincoln YS. The landscape of qualitative research : theories and issues. *J. Adv. Nurs*. 2003. p. xi, 684 .
- Creswell, J W. Designing a qualitative study. *Qual. Inq. Res. Des*. 2007. p. 35–52.

20. Guba E, Lincoln Y. Handbook of Qualitative Research. *Handb. Qual. Res.* 1994. p. 105–17.
21. Kirby N. Maternity Care Collaboration in Ontario: The Perspectives of Obstetricians and Midwives. *McMaster University*; 2016.
22. Dhakal K. NVivo. *J Med Libr Assoc.* 2022;110:270–2.
23. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3:77–101.
24. Tracy SJ. Qualitative Quality: Eight “Big-Tent” Criteria for Excellent Qualitative Research. *Qual Inq.* 2010;16:837–51.
25. Shaikh A. Developing a Successful Master of Health Administration Student Mentor-Mentee Program. *Health Care Manager.* 2016.
26. Freedman S. Effective Mentoring. *IFLA J.* 2009;35:171–82.
27. Siassakos D, Fox R, Bristowe K, Angouri JO, Hambly H, Robson L, et al. What makes maternity teams effective and safe? Lessons from a series of research on teamwork, leadership and team training. *Acta Obstet Gynecol Scand.* 2013;92:1239–43.
28. Amsalu E, Boru B, Getahun F, Tulu B. Attitudes of nurses and physicians towards nurse-physician collaboration in northwest Ethiopia: a hospital based cross-sectional study. *BMC Nurs.* 2014;1–6.
29. Olajide A, Asuzu M, Obembe T. Doctor-Nurse Conflict in Nigerian Hospitals: Causes and Modes of Expression. *Br J Med Med Res.* 2015;9:1–12.
30. Wieczorek CC, Marent B, Dorner TE, Dür W. The struggle for inter-professional teamwork and collaboration in maternity care: Austrian health professionals’ perspectives on the implementation of the Baby-Friendly Hospital Initiative. *BMC Health Services Research.* 2016;16:1–16.
31. Rwanda Ministry of Health. Ministry of Health Fourth Health Sector Strategic Plan July 2018- June 2024. 2018;1–104.
32. Ssemata AS, Gladding S, John CC, Kiguli S. Developing mentorship in a resource-limited context: A qualitative research study of the experiences and perceptions of the makerere university student and faculty mentorship programme. *BMC Med Educ.* 2017;17:1–9.
33. Uwajeneza P, Babenko-Mould Y, Evans M., Mukamana. Continuous professional development in Rwanda: The experience of midwives who participated in the advanced life support in obstetrics (ALSO) educational program. *Electron. Thesis Diss. Repos.* 2015.
34. Niles P, Ojemeni MT, Kaplogwe NA, Voeten SMJ, Stafford R, Kibwana M, et al. Mentoring to build midwifery and nursing capacity in the Africa region: An integrative review. *Int J Africa Nurs Sci.* 2017;7:89–95.