Original Article

Strategies to Sustain Interprofessional Collaboration in Emergency Obstetric and Neonatal Care in Rwanda: Perspectives of Healthcare Professionals and Hospital Managers

Assumpta Yamuragiye[1*], Aimable Nkurunziza[2, 3], Thierry Claudien Uhawenimana[2], Jean Pierre Niyitegeka[1]

[1]*School of Health Sciences, College of Medicine and 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]*Lawrence Bloomberg Faculty of Nursing, University of Toronto Toronto, Ontario, Canada*

***Corresponding author :** Assumpta Yamuragiye. School of Health Sciences, College of Medicine and Health Sciences, University of Rwanda, Kigali, Rwanda. Email : assoumpta1@gmail.com, ayamurag@uwo.ca. ORCID: https://orcid.org/0000-0002-8797-5569

Cite as: Yamuragiye A, Nkurunziza A, Uhawenimana CT, Niyitegeka JP. Strategies to Sustain Interprofessional Collaboration in Emergency Obstetric and Neonatal Care in Rwanda: Perspectives of Healthcare Professionals and Hospital Managers. Rwanda J Med Health Sci. 2024;7(2):338-349. https://dx.doi.org/10.4314/rjmhs.v7i2.19

Abstract

Introduction
Interprofessional collaboration (IPC) is beneficial in delivering quality healthcare. Lack of IPC increases healthcare errors and work under stress. Despite its importance, achieving a desired IPC continue to be a challenge worldwide. In Rwanda, different maternal death audits identified poor IPC as one of the contributing factors. However, there is no study conducted to identify strategies to improve IPC in obstetric and neonatal care. Accordingly, this study explored the perspectives of healthcare professionals and hospital managers on strategies to sustain inter professional collaboration in EmONC

Methodology
A qualitative descriptive study was conducted to explore suggestions and strategies to improve IPC in five hospitals in the northern province of Rwanda. Thirty interviews were conducted among general nurses, midwives, nurse anesthetists and medical doctors. To delve deeper into this study, additional interviews were conducted among hospital managers. Thematic analysis was used to analyze data.

Results
The findings revealed that strategies to improve IPC practice were: Trainings on IPC; availability of resources; interprofessional conflict resolution; recognition and rewarding; open and constant communication and research.

Conclusion
Based on perspectives from different healthcare professionals working in obstetrics and neonatal units, and their managers, all staff need IPC training focusing on communication as one of important aspect in IPC practice. Regular audits should be conducted to ensure protocols are followed and IPC challenges are constantly identified and addressed.

Rwanda J Med Health Sci 2024;7(2):338-349

Keywords: Interprofessional collaboration, obstetrics, neonatal, strategies, Rwanda

Introduction

Evidence shows that Interprofessional collaboration (IPC) is an important approach to deliver quality healthcare services. Effective collaboration among obstetric care teams is crucial for achieving positive outcomes in obstetric care. Failure in collaboration can lead to various negative consequences, such as a rise in unnecessary interventions and caesarian sections. [1] Additionally, it can result in delays in providing quality care, increased workload and stress for the healthcare professionals involved, decreased satisfaction with care, higher healthcare errors, and increased rates of maternal and neonatal morbidity and mortality. Therefore, it is imperative to prioritize and foster effective collaboration among obstetric care teams to ensure optimal outcomes for both mothers and babies.[2]

Despite its importance, failure to achieve effective IPC in obstetric care is still an issue of concern worldwide.[3] A wide range of studies have identified difficulties in collaboration in different settings. For example, Hastie & Fahy,[4] used interpretive interactionism design to investigate factors affecting collaboration in maternities in Australia. In this particular study, a group of 9 doctors and 10 midwives were examined to investigate the challenges related to power dynamics that impact both mothers and neonatal outcomes. Likewise, a separate study conducted in Quebec hospitals aimed to explore the obstacles to interprofessional collaboration (IPC) practices.[5] This study revealed that communication difficulties and conflicts arose between midwives and other maternity care teams due to differences in their care philosophy and scope of practices .[5] Furthermore, a struggle for IPC among health professionals in maternity care was identified in Australia in a study that considered nurses and midwives, anesthesiologists and obstetricians.[6] In the study , Wieczorek et al.,[6] identified difficulties around diverse approach to childbirth and breastfeeding and differences identified hindered the collaborative practices in relation to new breastfeeding approach that was supposed to be initiated. Furthermore, anesthesiologists were identified to resist the baby to mother skin to skin contact after caesarian section which was considered as lack of support and interest of the new breastfeeding approach (the baby friendly initiative).[6] Besides, in the same study, despite the importance of the baby friendly initiative, the nurses and midwives argued that they could do nothing to influence medical practice.[6]

There are questions on how effective collaboration could be achieved. However, few studies have proposed effective strategies to achieve effective collaboration indicating a need to investigate useful strategies to achieve successful collaboration in different healthcare settings, especially emergency obstetric and neonatal care.[7] Downe et al., [8] conducted a literature review on creating culture of collaboration in maternity care in United Kingdom, Australia and United States and cited effective conflict resolution, mutual trust, open communication, as important factors to achieve a successful collaboration. Similarly, Orchard et al., [9] mentioned role clarification, role valuing, trusting relationship and power sharing as enablers of successful collaboration. However, in both articles Downe et al., [8] and Orchard et al., [9] the authors argued that philosophical differences between professions lead to separate beliefs which hinder the successful IPC.

Another useful strategy that is frequently cited as important to foster collaboration is interprofessional education (IPE). [8,10,11] According to WHO [13], " IPE occurs when two or more professions, learn about, from and with each other to enable effective collaboration and improve health outcomes" P.13. The usefulness of IPE was widely supported by literature as a fruitful alternative way of bringing together different healthcare professionals and creating an opportunity to learn about other professions to enable the development of improved understandings of others' roles and scopes of practice and therefore increase

empathy and respect for others.[14] IPE should be introduced early in professional training to enable future health professionals to graduate ready for collaboration.[11] However, Orchard [7]demonstrated how tough is to do IPE, and argued that different philosophies and professional cultures lead to diverse understandings about others' roles.

WHO recommended some useful mechanisms to foster collaboration in healthcare settings including institutional support such as governance models, structured protocols, and shared operating procedures.[13] Additionally, other mechanisms could include working culture mechanisms such as communication strategies, conflict resolution, shared decision-making process and environment mechanisms such as resources and facilities. However, since health care systems are not shaped in the same way, in the framework for action on IPC, the argues that the recommendations highlighted were suggestive and every single country should identify useful strategies to implement and improve IPC to achieve optimum patients' outcomes.[12]

In the context of Rwanda, few studies have explored IPC in obstetric care. A five-year maternal death audit conducted between 2009 and 2013 demonstrated lack of IPC as one of the causes of increased maternal death. The audit recommended improving IPC to continue the reduction in maternal deaths .[15] Similarly, a recent qualitative research exploring IPC among professionals working in EmONC in five district hospitals in the northern province of Rwanda identified failure in ineffective collaboration among professionals providing EmONC suggesting a need to investigate the strategies to improve IPC to continue improving IPC and quality of obstetric care.[16]

Investigating the strategies to achieve successful IPC could potentially provide useful recommendations to foster collaborative practices and improve patients' outcomes in obstetric care. Accordingly, this study aimed at exploring strategies to improve IPC in obstetric care from study participants' perspectives. Understanding strategies could be important to identify evidences to be used to strengthen healthcare system, building capacity to improve IPC, enhance effectiveness and efficiency in IPC practice as well as deliver quality obstetric care and reduce maternal and neonatal mortality rate.

The study was conducted after a mentorship program by the Training Support Access Model for Maternal, Newborn, and Child Health in Rwanda (TSAM-MNCH), a four-year project funded by Global Affairs Canada. The main purpose of the TSAM project was to promote health systems improvement and reduction in maternal and child mortality. The mentorship program focused on IPC and other aspect of maternal and newborn care. However, the purpose of this study was limited to explore the strategies to sustain IPC practice.[17] Conducting research after implementation of the mentorship program could contribute to knowledge which can be useful for policy makers, administrators and implementors to guide improvement. Also, the findings contribute to the body of knowledge in response to the scarcity of literature around strategies to foster IPC practice. Furthermore, the study was part of large studies conducted for TSAM program evaluation. Therefore, the findings could inform others who might wish to implement similar program in their contexts.

Methods

Study design

This study used a qualitative case study design (QCS) underpinned by a constructive paradigm. According to the constructive paradigm, truth is constructed and depends on one's perspective, which also depends on interpretive meaning.[18] Therefore, Constructivism allowed the researcher to gather the participants' perspectives about the strategies to foster IPC in EMoNC. In this study, was considered the case, an interprofessional team composed of healthcare care professionals involved in EmONC, including nurses and midwives,

medical doctors, and anaesthesia providers who received a mentoring program by the TSAM project. The study based on individual semi-structured in-depth interviews.[19] The approach is useful when information is required from participants experiencing the phenomena under investigation and when time and resources are limited.[20] Accordingly, the design was well suited to explore strategies to improve IPC from the perspectives of healthcare professionals working in maternity services and involved in emergency obstetric and neonatal care and hospital managers in the Northern Province of Rwanda.

Study setting

This study took place in five district hospitals in the Northern Province in Rwanda. All five hospitals are public and were assigned by The Training, Support and Access Model (TSAM) project in Rwanda to implement mentoring programs to improve the quality of maternal and newborn care and contribute to the reduction of preventable maternal and newborn mortality rates. The project provided mentorship focusing on IPC practice and other aspects of maternal and newborn care to healthcare professionals working in EMONC

Sample size and sampling strategies

Purposive sampling was used to select participants. This sampling strategy allowed us to gather rich information about and strategies to promote and sustain IPC practices. In total, the sample size was composed by 30 participants including 25 five healthcare professionals and five director general of the hospitals where research was conducted. The sample size was determined after data saturation which occurred after interviewing twenty-five participants from different categories: nurses and midwives, anesthesia providers, medical doctors who work as interprofessional teams to manage obstetric and neonatal emergencies in district hospitals within the context of Rwanda. After discussion with the research team, we included five director generals of the five district hospitals to gather their commitment to IPC as they play a major role as leaders of the institutions to promote effective working relationships among professionals.

Recruitment process

At each hospital, a list of professionals who benefited from mentoring program and the address of the director general of the hospital was obtained from the TSAM project management and an email for recruitment was sent to inform participants about the study and get their consent. Unfortunately, the response rate was low and telephone calls were done to explain further about research and schedule the time to meet directly and sign informed consent which was a paper form. For those who consented to participate in the study, the researcher scheduled time for interview. To enhance credibility through data triangulation, we intended to have professionals from different backgrounds (nurses and midwives, medical doctors and anesthesia providers who are non-physicians anesthetists in the context of district hospitals in Rwanda). Overall, the group of interviewees included 5 director generals of five district hospitals who were all medical doctors, 6 medical doctors who were all general practitioners, 10 nurses and midwives with an advanced diploma in nursing or midwifery and 9 anaesthesia providers with an advanced diploma in anaesthesia.

Data collection

Data collection took place from September 2018 to December 2018 Semi-structured interviews were conducted onsite in comfortable areas and the first author was present. Interviews last for 45min to one hour. Semi semi-structured interview guide was used to gather data and the main question was what participants' suggestions are to improve IPC. Regarding hospital director generals, the main question was what strategies; they are using to sustain IPC practice among the obstetric care team. All interviews were recorded and transcribed to be studied in detail. After data saturation, the research team discussed the initial findings and agreed to stop since there

was no new information emerging from by participants. During the data collection with health professionals involved in the management of EMONC, the saturation occurred after conducting 25 interviews over 30 which were planned. However, after data analysis, the research team decided to add additional interviews with hospital managers to gather their perspectives about strategies used to sustain IPC practice. Therefore, five director generals of the five hospitals were also added and the total sample size became 30 participants.

Data analysis

Following the qualitative case study design, data analysis started with the first interview. Transcripts were read and reread several times to be familiar with the findings and the thematic analysis was done. Identification and labelling of the main codes followed the main themes of the interview guide as well as the themes that emerged from the data. All research team members conducted the initial analysis after which a meeting was organized to discuss the analysis and agree on the main themes. Afterwards, little discrepancies regarding proposed themes were identified and the research team collaborated with an expert researcher-mentor who reviewed the findings and provided her inputs to reach the consensus. To enhance rigor, the research team analyzed and discussed the themes and agreed to the main findings. Analysis was done by experienced researchers in qualitative research. Nvivo software pro 12 was used to support in data management. To enhance credibility, member checking was conducted with participants by presenting them with preliminary themes to ensure that the researcher's interpretation reflected participants' perspectives and the opportunity to clarify the meaning and provide new or additional information.

Ethical issues

Before commencement of this study, both University of Western Ontario ethics board and University of Rwanda, CMHS IRB gave approval. Participants were informed that participation was voluntary, and the confidentiality would be ensured at every stage of research process. In this regard, every participant has signed informed consent. Also, participants and hospitals names are not presented, instead they replaced by pseudonym. For example, from the first hospital, the second participant would be presented as H1P2 and the director general would be named KIH2

Findings

Participants included medical doctors who were general practitioners with bachelor's degree in medicine and surgery (n=6), nurses and midwives (n=10) most of whom had an advanced diploma, nurse anesthetists (n=9) with an advanced diploma in anesthesia and hospital managers who were all medical doctors(n=5). In total thirty participants participated in semi structured in-depth interviews. The thematic analysis identified six core strategies to improve IPC in obstetrics and neonatal units including trainings on IPC; availability of resources; interprofessional conflict resolution; recognition and rewarding; open and constant communication; and research.

Trainings on IPC

The study participants proposed that implementing trainings would be an effective approach to enhance their IPC practice. These trainings were suggested in various forms, ranging from basic training sessions to more advanced options like continuous professional development programs, which would provide a platform for discussing IPC-related topics. As an example, one participant specifically highlighted the importance of such trainings.

> *"I think there is a need for continuous trainings on IPC and they should focus on the aspect of communication which should be a solution to the sustainability of IPC."* H4P3

Many participants reported the priority groups for IPC trainings in obstetrics including new staff and medical doctors. One participant said,

> *"To improve on interpersonal collaboration, there is need to train current staff and orient new staff on IPC".* H2P1

In this similar context, another participant added,

> *….I think something should be done on the side of doctors. Doctors should be trained more about the interprofessional collaboration. They (doctors) must understand that everyone has his role to play. They (doctors) must be told that the success of some aspects of care depends on the success of previous ones…….* H1P4

Likewise, regular meetings where staff can discuss about IPC situation was proposed by participants as evidenced by the following quote:

> *I think there is a need for regular IPC meetings, it would be better to keep reminding the staff about IPC, provide some training and make the follow up because some time we learn the things and we do not continue to practice what we have learnt when there is no follow up.* H3P1

Training and meeting suggestions were also echoed by the hospital directors as one of their priorities as one KI stated,

> *"Our strategy is to organize trainings about this issue(IPC). Those trainings will emphasize the importance of interpersonnel collaboration in our institution."*KIH3

In this context, another participant confirmed,

> *Another strategy is to organize several meetings debating about IPC. Those meetings have been fruitful. It was through such meetings that a decision that midwifes will go with ambulances for maternity cases because general nurses revealed how uncomfortable they were when handling maternity cases.* KIH4

The hospital directors also added different ways this can be done including inviting experts in the IPC field as one participants reported,

> *"Experts in IPC should be invited and give us trainings". KIH1*

To ensure the sustainability of IPC practices, from participants' perspectives, institutions should organize trainings on IPC and ensure effective supervision as one participant said,

> *"…leadership has to find a way to motivate employees like offering them trainings and do a close supervision". H2P4*

Availability of resources

In this study, participants highlighted the need for leadership support to achieve successful collaboration: For example, participants suggested that leadership should ensure enough staff is available to create a conducive environment with necessary resources for IPC to occur, availability of guidelines and protocols. For instance, participants argued that when staff are exhausted, they are not in a good mood to collaborate. One participant said,

> *"If we could have enough staffs, the collaboration would be effective."* H3P5

In this context the hospital directors agreed that improvement and sustainability of IPC practice could be achieved if hospitals had sufficient number of staffs. Consequently, they pointed out their plans to solve this issue including advocacy as one participant explained:

> *We ask the district administration through health unit to increase the number of medical personnel in hospital. The advocacy has begun and even the ministry of health is informed about our concern. KIH4*

Availability of protocols was suggested as important to guide the practice in some aspects of care in obstetric and improve collaborative practice. One participant explained,

> *"….if there were protocols, for instance if they could say the management of post-partum hemorrhage should follow this algorithm that would be important to the entire team"* H5P2

Lastly, fair distribution of resources and equal consideration of personnel were highlighted by one participant as effective strategy that was put in place to avoid conflict among staff and encourage successful collaborative practice. One participant stated,

> *As a leader, we should not be biased, we should treat all worker in the same way. Always search for balance. For example, when it is the matter of advantages of participating in trainings. Everyone should be given the same chances.* KIH5

Interprofessional conflict resolution

The study participants acknowledged the disagreements among the team members. Thus, participants suggested appropriate ways to respond to conflicts. For example, one study participant explained,

> *When there is a problem related to IPC, leadership should call upon those who are concerned and find out what went wrong. For instance, they can bring together anesthesia providers and medical doctors and take one case and discuss on the role of everyone and find out the better way to understand each other. H3P2*

Recognition and rewarding

The study participants suggested to have a positive feedback and a non-blame incident analysis to promote effective IPC as one participant said,

> *"There is time where we do a good job and no body recognizes our effort but when a very simple problem arise, they bring the blame game to the level that they even ignore all the good things you have done". H4P5*

To further enhance her perspective, the same participant said,

> *"We need motivation, not only in terms of money but also how they address to us at least thank us for the job done. I would suggest the positive feedback. Thanking what went well and address what were wrong after."*

Open and constant communication

In this study, the study participants suggested improved communication as a key element to achieve IPC in obstetrics. For instance, one participant reported,

> *… When communication is done well, collaboration happens. When you give the right information on time it improves collaboration. There is a great need to improve the communication side". When you describe the problem concisely it becomes very clear to the rest of the team. H2P4*

The study participants highlighted that putting forward the client-centered care approach facilitates an open communication among team to achieve successful IPC in EmONC as evidenced by the following quote:

> *…..We should consider the patient as the center of interest and in that way, the patient would come first. For example, if you are called to take an intravenous line you should not say that those who are calling can also take it. You should think about the patient first and then come to provide the support as needed.* H5P2

When asked about strategies used by hospital managers to improve IPC, all participants also revealed a need to improve in communication and one participant said,

> *"I requested all the members of medical staff to break the silence and talk whenever they encounter collaboration problems." KIH2 The same participant enhanced further his perspective and said, "I advised nurses not to fear to defend their position if the proposition is clearly scientific."*

In the same way, another KI said,

> *"communication is very important to improve collaboration, we tell healthcare providers here to improve their communication and make sure everyone understands his role in the team" . KIH3*

Research

Scanning IPC environment was also suggested as effective strategy to improve IPC as one participant stated:

> *I think it would be better to do research in order to identify at which level is the interprofessional collaboration between medical staff. The improvement would be done systematically based on the identified state of present situation. KIH1*

In this similar context, the hospital directors reported the existing research activities to improve IPC practices in obstetrics. An audit for maternal and neonatal death was also pointed out as one of the strategies since when trying to analyze the cause of deaths; they can easily identify the case of poor collaboration and talk to concerned staff in order to improve. One hospital manager reported,

"We have initiated an audit committee that analyzes the cases of death of new borns or their mothers. The audit team identifies the weakness in the service we deliver including IPC problems." KIH3

Lastly, to conduct research in order to identify the gap and address them accordingly was pointed out as a strategy that was in plan to sustain and promote IPC practice as one hospital director explained in the following quote:

*"It would be better to do the research in order to identify at which level is the interprofessional collaboration between medical staff. The improvement must be done systematically based on the state of present situation. "*H1P7

Discussion

This study aimed at understanding strategies from research participants to improve IPC in EmONC. Suggestions to improve IPC highlighted by participants were similar to other studies in a number of ways. For example, Helmond et al., [21] in her scoping study on how to improve collaboration suggested the need for IPE to improve collaboration. Even though participants in this study did not talk about IPE as probably the term would be new to them, they suggested trainings in different forms which could probably mean the interprofessional education. However, on the other hand Baker et al., [22] demonstrated how tough is to organize IPE since medical model of care is still in a form of hierarchy. Due to the nature of the medical care, low doses and frequent on-site training would be helpful.

Most participants suggested the availability of enough healthcare professionals to create a conducive environment for IPC to happen. They argued that when professionals are tired and exhausted, it impacts negatively the collaboration since communication becomes difficult. Sabone et al., [23] ; Hailu et al.,[24] also in their studies in Botswana and Ethiopia respectively identified the same findings which could probably be related to the context of limited resources countries. Fortunately, in this study, hospital managers in their interviews, they pointed out that they were making advocacy through concerned authorities to find a solution of the shortage of staff identified.

In the present study, participants acknowledged the conflicts among the team members and suggested interprofessional conflict resolution as one of the strategies to improve IPC. The recent critical review of the literature stresses that team conflict within interprofessional teams is under-emphasized in healthcare organizations, and administrators need to understand the positive and negative aspects of team conflict. Obstetric and neonatal care units are run by different healthcare professionals with different scopes of practice who need to work towards a common goal. Conflicts cannot be prevented, but they can be managed.[25]

Positive feedback and non-blame incident analysis provide a platform for team members to come together and discuss potential issues. This allows team members to learn from each other and identify areas of improvement. Additionally, rewards and recognition create a culture of mutual respect and understanding, which helps to foster IPC. Rewards and recognition were identified as competencies of an interdisciplinary team that facilitate personal development. Ultimately, these findings suggest that positive reinforcement and incident analysis effectively promote IPC.[26]

Communication and client centered approach are the two most important competences in IPC practice.[27] Interestingly, in this study it was suggested to improve communication and participants suggested to develop a more client centered approach. The same findings were identified in other studies that have investigated IPC in obstetrical care teams.[14,28–30] Furthermore, in the same studies, they proposed some useful strategies to improve communication such as use of checklists in obstetric care.

Moreover, in this study, participants did not suggest how effective communication could be achieved. However, the use of checklists in different obstetric procedures could also be as important as in other studies to reduce barriers to communication. For instance, when performing caesarian sections or other operating procedures in obstetric care, surgical safety checklists could be used to improve communication and make sure everything is right in terms of communication.

Also, communication competence is affected by power dynamics in IPC practice. Therefore, this could be mitigated to achieve a successful collaboration. One of the strategies identified from hospital directors to promote IPC was to encourage nurses and midwives to break silence and speak up when there are communication issues as a result of power dynamics. However, one of the concerns is why health professional education is not empowering graduates to stand and own the value of their knowledge in the context where hierarchy exists. Working together in successful collaboration does not hinder the independence of either profession.

Our findings revealed that a culture of research would be an important aspect to identify ways of improving IPC in obstetric and neonatal care. These findings are consistent with a study conducted in Kenya where Kermode et al., [31] suggested conducting research to continually understand barriers to collaboration and overcome them as identified. Likewise, in Ethiopia, Amsalu et al.,[32] found scanning IPC environment in obstetric care as an effective way to sustain IPC practice.

This study has strengths and limitations. Our qualitative study population included a representative sample of all professionals working in obstetrics and neonatal units and hospital managers, providing rich information on IPC. Recruitment of those who have already benefited from the TSAM IPC training helped us to understand the realities of effective strategies to improve IPC in obstetrics and neonatal care. The study was limited by recall bias, as data were collected from healthcare professionals who had already benefited from TSAM IPC training. The study was subject to selection bias, as only healthcare professionals willing to participate were included. Therefore, taking into account these limitations is crucial when interpreting this study's results.

Conclusion, recommendations and future directions

For IPC to be effective in obstetric and neonatal units, collaborative efforts are required between all staff and their managers. This study drew conclusions based on perspectives from different healthcare professionals working in obstetrics and neonatal units, including nurses, midwives, anesthesia providers, medical doctors and their managers. All staff need to be trained in IPC protocols and procedures and have access to the necessary resources to implement these protocols. Regular audits should be conducted to ensure protocols are followed correctly.

This study was conducted as part of large studies to evaluate the TSAM activities. Based on the findings, it was clear that the concept of IPC was still not fully understood by some of the participants despite the TSAM mentorship which focused on IPC as one of the important components of the mentoring program. The findings suggest a need to train professionals working in obstetric care on the concept and usefulness of IPC practice. The best approach should be to integrate the concept of IPC in health education curricula such that future health professionals should graduate ready to collaborate. On one hand, it is logical that health education curricula cannot change whenever new findings are released. However, on the other hand, considering the importance of the matter, change can be adapted as needed. Besides, continuous professional trainings could be the best alternative for health professionals who are already in practice to continuously remind them and make them aware of the IPC concept.

The study findings suggest a need to organize interprofessional education so that professionals working in the same area of expertise should know about others and their roles to improve collaborations.

Mentorship process could also be an important strategy to improve collaborative practice as experienced professionals work together with junior professionals and be a role model. This can also, improvecollaboration and allow staff to develop confidence and improve collaborative practices. Furthermore, leadership should ensure that scope of practice of different professionals working in the same areas of expertise are aligned to avoid confusion and allow effective collaboration to happen. Also, leadership should ensure that IPC remains a priority in health agenda. Moreover, policies and guidelines are essential in guiding practices. Consequently, leadership should ensure the availability of policies, protocols and guidelines to allow successful collaboration among health professionals.

Future research could consider extending this research across the country, or to other countries, to explore strategies to achieve and sustain successful IPC in obstetric care. This study used a qualitative approach to explore suggestions and strategies to foster IPC, using a quantitative approach could also bring valuable insight through quantifiable and numerical data. Furthermore, a comparative analysis using a mixed-method approach would be useful in providing valuable results.

Acknowledgement
The authors would like to express their sincere gratitude to study participants for having accepted to share their perspectives about strategies to sustain IPC practice.

Conflict of interest
None to declare

Author's contribution
AY: Conceptualized the study, collected data, analyzed the data, wrote the first draft of the manuscript.
AN: Analyzed the data, contributed to the draft of the manuscript and approved the final version.
TCU: Analyzed the data, contributed to the draft of the manuscript and approved the final version.
JPN: Contributed to the draft of the manuscript and approved the final version.

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

References

1. Wrammert J, Sapkota S, Baral K, Kc A, Målqvist M. Teamwork among midwives during neonatal resuscitation at a maternity hospital in Nepal. *Women and Birth* . 2017;30(3):262–9. http://dx.doi.org/10.1016/j.wombi.2017.02.002
2. Smith DC. Midwife–Physician Collaboration: A Conceptual Framework for Interprofessional Collaborative Practice. *J Midwifery Womens Health* . 2015 ;60(2):128–39. http://dx.doi.org/10.1016/j.ajog.2011.04.021
3. John H.V. Gilbert JY, Hoffman SJ. A WHO Report: Framework for Action on Interprofessional Education and Collaborative Practice. *who website.* 2013;53(1):209–18.https://iris.who.int/bitstream/handle/10665/70185/WHO_HRH_HPN_10.3_eng.pdf?sequence=1. Accessed 11February 2013
4. Hastie C, Fahy K, C. H, K. F. Inter-professional collaboration in delivery suite: A qualitative study. *Women and Birth* . 2011;24(2):72–9. http://dx.doi.org/10.1016/j.wombi.2010.10.001

5. Behruzi R, Klam S, Dehertog M, Jimenez V, Hatem M. Understanding factors affecting collaboration between midwives and other health care professionals in a birth center and its affiliated Quebec hospital: A case study. *BMC Pregnancy Childbirth.* 2017;17(1):1–14. DOI: 10.1186/s12884-017-1381-x
6. 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 Serv Res* . 2016;16(1):1–16. http://dx.doi.org/10.1186/s12913-016-1336-3.
7. Orchard CA. Persistent isolationist or collaborator? The nurse's role in interprofessional collaborative practice. *J Nurs Manag.* 2010;(248–257). DOI: 10.1111/j.1365-2834.2010.01072.x
8. Downe S, Finlayson K, Fleming A. Creating a collaborative culture in maternity care. *J Midwifery Women's Heal* . 2010;55(3):250–4. http://dx.doi.org/10.1016/j.jmwh.2010.01.004
9. Orchard CA, Curran V, Kabene S. Creating a Culture for Interdisciplinary Collaborative Professional Practice. *Med Educ Online* . 2005;10(1):4387. DOI: 10.3402/meo.v10i.4387
10. Romijn A, Teunissen PW, Bruijne MC De, Wagner C, Groot CJM De, de Bruijne MC, et al. Interprofessional collaboration among care professionals in obstetrical care: are perceptions aligned? *BMJ Qual Saf.* 2017;(November):bmjqs-2016-006401. doi/10.1136/bmjqs-2016-006401
11. Lee N Van Der, Driessen EW, Scheele F. How the past influences interprofessional collaboration between obstetricians and midwives in the Netherlands: Findings from a secondary analysis. *J Interprof Care* . 2016;30(1):71–6. http://dx.doi.org/10.3109/13561820.2015.1064876
12. World Health Organization. Framework for Action on Interprofessional Education & Collaborative Practice. *who website.* 2010; https://pubmed.ncbi.nlm.nih.gov/21174039.Accessed 14March 2019
13. World Health Organization (WHO). Framework for action on interprofessional education & collaborative practice. *who website*. 2010. https://www.who.int/publications/i/item/framework-for-action-on-interprofessional-education-collaborative-practice. Accessed 15 May 2024
14. Lam P, Filici AL, Middleton C, Mcgillicuddy P, Lopez Filici A, Middleton C, et al. Exploring healthcare professionals ' perceptions of the anesthesia assistant role and its impact on patients and interprofessional collaboration. *J Interprof Care.* 2018;32(1):24–32. https://doi.org/10.1080/13561820.2017.1379960
15. 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):1–8. DOI: 10.1136/bmjopen-2015-009734
16. Yamuragiye A, Wylie L, Kinsella EA, Donelle L, Ndayisenga JP. Interprofessional collaboration experience among healthcare professionals providing emergency obstetric and neonatal care in Rwanda. A qualitative descriptive case study. *J Interprofessional Educ Pract.* 2023 Sep;32:100648. https://doi.org/10.1016/j.xjep.2023.100648
17. 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* . 2020 Dec 7;20(1):924. https://doi.org/10.1186/s12913-020-05789-z

18. Yazan B. Three Approaches to Case Study Methods in Education : Yin , Merriam , and Stake Three Approaches to Case Study Methods in Education : Yin , Merriam .*Qual Rep*. 2015;20(2):134–52. doi:10.46743/2160-3715/2015.2102
19. Denzin NK, Lincoln YS. The landscape of qualitative research : theories and issues . *Journal of Advanced Nursing.* 2003 ;Vol. 51,. p. xi, 684 p.
20. Bradshaw C, Atkinson S, Doody O. Employing a Qualitative Description Approach in Health Care Research. *Glob Qual Nurs Res.* 2017;4. doi: 10.1177/2333393617742282
21. Helmond I Van, Korstjens I, Mesman J, Nieuwenhuijze M, Horstman K, Scheepers H, et al. What Makes for Good Collaboration and Communication in Maternity Care? A Scoping Study. *Int J Childbirth* . 2015;5(4):210–23. DOI: 10.1891/2156-5287.5.4.210
22. Anthony C, Lawani LO, Ugwu GO, Ajah LO, Onwuka CI. Knowledge and attitude toward interdisciplinary team working among obstetricians and gynecologists in teaching hospitals in South East Nigeria. *J Multidiscip Healthc.* 2015;237–43. doi: 10.2147/JMDH.S82969
23. Sabone M, Cainelli F, Joseph R, Shayo J, Morris B, Muecke M, et al. Everyday ethical challenges of nurse-physician collaboration. *Nurs Ethics.* 2019; DOI: 10.1177/0969733019840753
24. Hailu FB, Kassahun CW, Kerie MW. Perceived Nurse — Physician Communication in Patient Care and Associated Factors in Public Hospitals of Jimma Zone , South West Ethiopia : Cross Sectional Study. *PLoS One.* 2016;1–21. https://doi.org/10.1371/journal.pone.0162264
25. Orchard C, King G, Tryphonopoulos P, Gorman E, Ugirase S, Lising D, et al. Interprofessional Team Conflict Resolution: A Critical Literature Review. *J Contin Educ Health Prof*. 2023 Jul 17.DOI: 10.1097/CEH.0000000000000524
26. Nancarrow SA, Booth A, Ariss S, Smith T, Enderby P, Roots A. Ten principles of good interdisciplinary team work. *Hum Resour Health* . 2013;11(1):1. DOI: 10.1186/1478-4491-11-19
27. Canadian Interprofessional Health Collaborative. A National Interprofessional Competency Framework . *Health San Francisco.* 2010. 1–32 p. https://phabc.org/wp-content/uploads/2015/07/CIHC-National-Interprofessional-Competency-Framework.pdf
28. Burke C, Grobman W, Miller D. Interdisciplinary collaboration to maintain a culture of safety in a labor and delivery setting. *J Perinat Neonatal Nurs.* 2013;27(2):113–23. doi: 10.1097/JPN.0b013e31828cbb2a.
29. Weller J, Boyd M, Cumin D. Teams, tribes and patient safety: Overcoming barriers to effective teamwork in healthcare. *Postgraduate Medical Journal.* 2014.
30. Fung LY, Downey K, Watts N, Carvalho JCA. Barriers to collaborative anesthetic care between anesthesiologists and nurses on the labour and delivery unit: a study using a modified Delphi technique. *Can J Anesth.* 2017;64(8):836–44. DOI: 10.1007/s12630-017-0895-z
31. Kermode M, Morgan A, Nyagero J, Nderitu F, Caulfield T, Reeve M, et al. Walking Together : Towards a Collaborative Model for Maternal Health Care in Pastoralist Communities of Laikipia. *Matern Child Heal.* 2017;21:1867–73. DOI: 10.1007/s10995-017-2337-5
32. 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. doi: 10.1186/s12912-014-0037-7