Masteroppgave

NTNU
Norges teknisk-naturvitenskapelige universitet
Fakultet for medisin og helsevitenskap
Institutt for samfunnsmedisin og sykepleie

Annika Isabel Scarth Svorkdal

Cervical Cancer Screening in Tanga, Tanzania

A Collaborative Approach Based in Connection

Masteroppgave i Global Health
Veileder: Virginia Kotzias
Medveileder: Dr. Kam Sripada
Mai 2023

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Acknowledgements

Thank you to Dr. Leah Norgrove for reaching out and connecting me with the world of cervical cancer prevention and international collaboration. I am grateful for your time and passion as you helped me navigate all stages of project planning over video calls and cups of tea. Thank you for introducing me to Dr. Bhakari and her team. Thank you for all your guidance, your wisdom and your warmth. I am always inspired after speaking with you!

Thank you to Dr. Ambrose Marsh for supporting the technical and personal elements of my introduction to the team in Tanzania. I am grateful for your enthusiasm. Thank you for helping me 'make it happen'.

Thank you to Dr. Bhakari for providing valuable feedback throughout my project planning process. I am grateful for your support with the logistics of recruiting participants and facilitating the focus group. Your contributions truly made the project possible. Thank you for your time, flexibility and open mind.

Thank you to Virginia Kotzias for your encouragement. I am grateful for your support and structure and organisation. Thank you for clear feedback, quick replies and coaching. I am grateful for all the video calls and check ins that kept me on track. I feel very fortunate to be your student and to be able to learn from you.

Thank you to Dr. Kam Sripada for supporting my project and writing. I am grateful for your perspective and feedback. Your supervision and support has been a great help through journey planning and writing the thesis.

Thank you to Dr. Jennifer Infanti for leading an engaging Global Health course. Your encouragement in the early stages of the project was very supportive. I am also grateful for all the opportunities and interesting people you have shown us in the realm of Global Health. Though our time together in the classroom was relatively short, I felt very supported as your student and look up to you as a researcher and world adventurer.

I have been inspired by many staff and students at NTNU and feel grateful for the past two years in the Global Health Program.

Thank you to friends and family for the seaside walks, sailing trips, barn dances, and craft projects, and phone calls that were grounding, nourishing breaks for my computer screen.

Finally, thank you in advance to my thesis review committee members for your time and energy reviewing my project.

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Abbreviations

TRRH - Tanga Regional Referral Hospital

LMIC - Lower-middle income country

HIC - High income country

WHO - World Health Organisation

HPV - Human papillomavirus

HIV - Human immunodeficiency virus

Cervical Cancer Screening in Tanga, Tanzania: A Collaborative Approach based in Connection

Section 1. Abstract

Cervical cancer is a significant global health issue, it is among the most common causes of death for women around the world. The greatest cervical cancer cases occur in lower-middle income countries where there is a lack of resources to support cervical screening and follow-up care. There is a need for research that explores the nature of international partnerships and collaborative factors that contribute to cervical cancer prevention in low-resource settings.

This qualitative study examines the experience of clinicians working in an international collaboration, with Canadians and Tanzanians, to implement cervical screening and follow-up care in Tanga, Tanzania. The 2023 study aimed to gain insight into the factors that impact the strength and sustainability of their collaborative project. An iterative method using both focus group (n = 8) and key-informant interviews (n = 3) was used to explore the perspectives of Canadian and Tanzanian collaborators.

Participants highlighted the factors that, in their experience, contributed to a strong foundation for a collaborative relationship including a focus on local priorities, trust and reliability, shared decision-making, care for patients and partners, and a genuine interest in learning. Logistical factors such as their intentional integration into existing clinical structure, budgeting with consideration for community needs, and documentation tools such as record books and visual care paths supported their work. The reflections of participants who have worked together in a long term mentorship, sponsorship, and partnership contributed valuable knowledge regarding the establishment of strong, sustainable collaborations in the prevention of cervical cancer in Tanga, Tanzania.

Section 1.2 Keywords

cervical cancer prevention, cervical screening, women's health promotion, cross-cultural partnership, global health, HIC-LMIC collaboration, clinician's perspective, cervical cancer burden, Tanga, Tanzania

Section 2. Background

Cervical cancer is among the most common cancers in female-bodied patients (1). An infection of human papillomavirus (HPV) is the most common cause of deadly cancer cells that slowly develop in the neck of the uterus (2).

The global distribution of cervical cancer is an example of health inequities between countries and between genders. The disease is preventable, detectable, with effective screening methods and treatable if caught early (3)(4). However, most of the resources exist within the borders of high-income countries (HIC)(5). Meanwhile, most of the women affected live in low- and-middle- income countries (LMIC) and develop cervical cancer in their most productive years(1)(6). There is a long timeframe for cervical cancer prevention and intervention because though the risk begins in early adulthood with exposure to HPV, precancerous lesions take years to develop in a woman's cervix and full blown cervical cancer may not develop until midlife (3)(4). The timeline shows not only the urgency of global cervical cancer prevention, but also the importance of strategies that are long-term, sustainable and focused on early detection (7).

Women are at the highest risk for cervical cancer between age 40 and 50, a crucial period of life both economically and socially (1)(6) . Every two minutes one woman is lost to cervical cancer, for a total of nearly 600,000 women each year, leaving families motherless and communities without their valuable leaders (8).

The World Health Organization (WHO) recognized the need for immediate action in 2020 and created a plan to eliminate cervical cancer by 2030 (9). The plan focuses on each level of health promotion, with a primary health promotion goal to vaccinate 90% of girls by age 14, a secondary health promotion goal of screening 70% of all women at least twice in their lives, and a tertiary health promotion goal of providing treatment and palliative care where appropriate for 90% of women (9).

Innovations in recent years have focused on technological advancements such as self-sampling for HPV and visual inspection of the cervix with acetic acid (VIA)(3). There have been promising steps made in finding effective methods of early detection (4). However, in order to address existing inequalities, it is important that next steps are focussed on implementing screening, and follow-up systems and supports to ensure sustainable continuity of care (1)(6). Further, much of cervical cancer research and innovation conducted in a high income context cannot simply be exported for effective use in lower resource settings (10).

There is a need for partnerships between HICs, where the majority of resources exist, and LMICs where the majority of cases exist.

Canada is an example of a HIC where the introduction of and access to cervical cancer prevention has supported a drastic decrease in the number of cervical cancer cases (11). Canadians have access to primary, secondary, and tertiary cervical cancer prevention. Since the implementation of screening around 1980, there has been a steady fall in age standardised mortality rates associated with cervical cancer (11). Each year in Canada, around 400 women die from cervical cancer each year (11).

The national approach focusing on HPV vaccination, cervical screening and follow-up treatment has helped Canada move closer to eliminating cervical cancer (12). However, there are some socially determined groups, for example indigenous communities, who experience inequitable access to cervical health promotion services (12). Even within a resource rich country where advanced technologies and health promotion resources exist, there are communities and cultures that face challenges accessing the services (11). This illustrates that technology alone cannot eliminate cervical cancer and that screening technologies must be supported by a well-planned, person-centred system that enables all cultures and communities to access cervical cancer screening and treatment.

Short-term technology-focused global health projects have sometimes used quick fixes or simply exported western solutions into another cultural context. However, from a long term perspective, this approach contributes to fragmented and disconnected health systems (1)(10).

To achieve the next steps in WHO's global cervical cancer strategy, HIC-LMIC collaborations are required to enable the sharing of solutions and establishment of systems that function in low resource contexts (3). Moving forward, the focus must be on fostering international connections and on supporting LMICs clinicians to establish cervical screening and follow-up care systems, not purely on advancing technology.

2.2 LMIC & HIC Collaborations

In an increasingly globalised world, international and cross-cultural collaborations have become an important part of health promotion efforts (13). The nature of these collaborations can greatly influence the nature of the work being done: equitable and reliable partnerships create a strong foundation for equitable and sustainable health promotion systems (13). Sustainable international partnerships are required to enable the sharing of human and technological resources (14). Historically, global health collaborations have often been unethical extensions of colonialist structures that are neither culturally safe nor sustainable (15)(16). Funders and researchers located in HICs have historically dominated decision-making within global health (15)(16) while LMICs have often been the target of "parachute" health care projects that are not sustainable without significant resources and therefore do not provide communities with what they need for lasting health promotion (17). A long-term, culturally relevant approach to prevention is especially important in the context of cervical cancer because of the longtime frame of the disease and the social determinants that act as a barrier to equitable access to care (9).

International collaborations have the potential to generate new knowledge and engagement in research(18). There is a significant imbalance in the distribution of cancer research, currently skewed towards majority populations in HICs, with less culturally-relevant research conducted in an LMIC or indigenous community context (10). As we see in Canada, universal vaccination, screening and follow up services do not serve the unique needs of some cultures and social groups within the country; this results in communities experiencing unequal access to services (9)(12). There is work to be done to decrease disparities and to make cervical cancer prevention and treatment accessible to all (9). However, current literature lacks input from clinicians working in long term international partnerships to implement cervical cancer prevention systems in low-resource and culturally unique settings (4). The lived-experience of these clinicians can be an informative source of knowledge as all countries, cultures and communities work towards global cervical cancer elimination by 2030 (4).

2.3 Sociocultural Factors

Health systems are highly context-specific and understanding the qualitative, sociocultural factors at play in clinical and community contexts is crucial to generating useful solutions (10). In order for global efforts to follow WHO's plan and implement early detection for the effective reduction of cervical cancer burden, there must be strong, sustainable systems in place that support local LMIC clinicians in their work (10).

Further, the success of cervical cancer prevention initiatives is often influenced by social and cultural factors in local communities (6)(9). This is one reason why the search for solutions must take into account the local landscape and community priorities from the start (10)(19).

Though social and cultural factors influence the health literacy of individuals, it is the responsibility of policy makers and service designers to create a system that strengthens the connection between community and clinics, and a system that encourages patients to follow up for treatment (20).

LMIC clinicians hold valuable insights about the sociocultural factors influencing their communities and insights about the best ways to make connections with their patients (13). Their input can play a crucial role in designing systems that make lasting connections between their communities and cervical cancer care (21).

2.4 Clinician Experience

There is a misconception that clinicians in areas with high rates of cervical cancer lack understanding of the issue, but in many cases their 'inability' to provide treatment is due to their limited access to resources (22). In fact, their understanding of the forces that promote and prevent progress in their local communities is extremely valuable. There is great value in the insights of local clinicians whose perspective may have previously been left out of the conversation about cross-cultural collaborations in the cervical cancer context (18).

Cultural differences play a fundamental role in collaborative relationships and these differences require appreciation and recognition (13). A recent article about collaborator's experiences in cross-cultural research partners identifies themes of equity, trust, knowledge exchange, and communication to be important factors in establishing a strong research partnership (23). Cross-cultural perspectives on a collaborative approach to preventing cervical cancer in low-resource contexts can help to inform the future of equitable, sustainable cervical cancer prevention strategies (20).

2.5 Study Context

The United Republic of Tanzania is an east African country with high rates of cervical cancer (8). In 2020, 62.5 in every 100 000 women had cervical cancer and low screening rates suggest the incidence is likely much higher (24). Tanzanians urgently need a screening and tracking strategy that functions within the cultural context and connects communities to necessary care (25)(20). The heavy burden of this issue falls on the shoulders of Tanzanian clinicians who are tasked with screening, tracking and following up large populations of women in a health promotion system that is still under development (6).

The Tanzanian government introduced a HPV vaccination strategy in 2018, but at this point it has only reached 40% of Tanzanian girls under 15(9). Secondary health promotion through screening is an essential element of the Tanzanian strategy to catch HPV infections and irregular cervical cells before they become cancerous (7). However, only 1 in 10 women have been screened in the past 5 years and there is no comprehensive national screening and patient tracking program (9)(7).

This study explored the cervical screening program at Tanga Regional Referral Hospital (TRRH), in Tanzania. The cervical screening program at TRRH opened in 2016 in a clinical space that was also used to provide HIV treatment and testing. The program was established and supported through a collaboration with Bombo Palliative Care Project Society (BPCPS). BPCPS is a small Canadian NGO that has had a mentorship and sponsorship relationship with clinicians in the Tanga region for over ten years. Their focus was originally palliative care, but the impetus of large numbers of patients dying painful, preventable deaths from cervical cancer inspired their investment of time and resources to strengthen the region's secondary prevention of cervical cancer.

Over many years, the Canadian and Tanzanian clinicians have worked together to screen, treat, document, and refer cervical cancer cases in Tanga. The screening and follow-up systems they have implemented have the potential to be scaled-up and integrated with a national strategy in Tanzania. Though a detailed quantitative evaluation of the program's impact on cervical cancer burden in Tanga is still underway, preliminary reports from program leaders suggest their services have reached thousands of women. Their program can be regarded as successful, for the purposes of this qualitative exploration, since they have been able to provide access to cervical screening in a community where such services did not previously exist.

The clinicians at TRRH cervical screening clinic and members of BPCPS work in cross-cultural collaboration with a focus on local priorities, connecting to the community, and making changes that can be sustained in the long-term. The experiences of these clinicians have the potential to provide insights that support sustainable solutions for cervical cancer screening and follow-up care in a Tanzanian context.

2.6 Study Aims

Canadian, HIC partners, and Tanzanian, LMIC partners, have worked together to connect Tangan women with cervical cancer care. This study explores their experience working in collaboration to establish screening and follow up systems at TRRH. The purpose of this project is to explore the experience of local Tanzanian clinicians who screen and treat Tangan women for cervical cancer, to explore their experience working with international partners, and to explore the experience of those international partners working to implement cervical cancer prevention systems in a foreign context. They have worked together for over ten years and the long-term sustainability of services has been a priority of their project planning and implementation. This investigation of their unique experience can inform further improvements to cervical health promotion initiatives in low resource settings and provide insight into the characteristics of a strong, sustainable cross-cultural collaboration.

The following are the key research questions that guided the focus of the study:

1) *What is the experience of clinicians working in an international collaboration to implement cervical screening and follow-up care in a lower-middle income country context?*

2) *How can their reflections provide insight for strong, sustainable international collaborations in cervical cancer prevention in the future?*

In addition to the following sub-questions:

a) How could the collaborative experience of these clinicians inform a sustainable secondary health promotive approach to decreasing the burden of cervical cancer in Tanzania in the future?

b) To what extent does trust & the nature of the partnership play a role in the success of implementation of cervical screening and follow-up care systems?

c) What are the greatest strengths & limitations to collaborative approach when addressing the burden of cervical cancer in Tanzania?

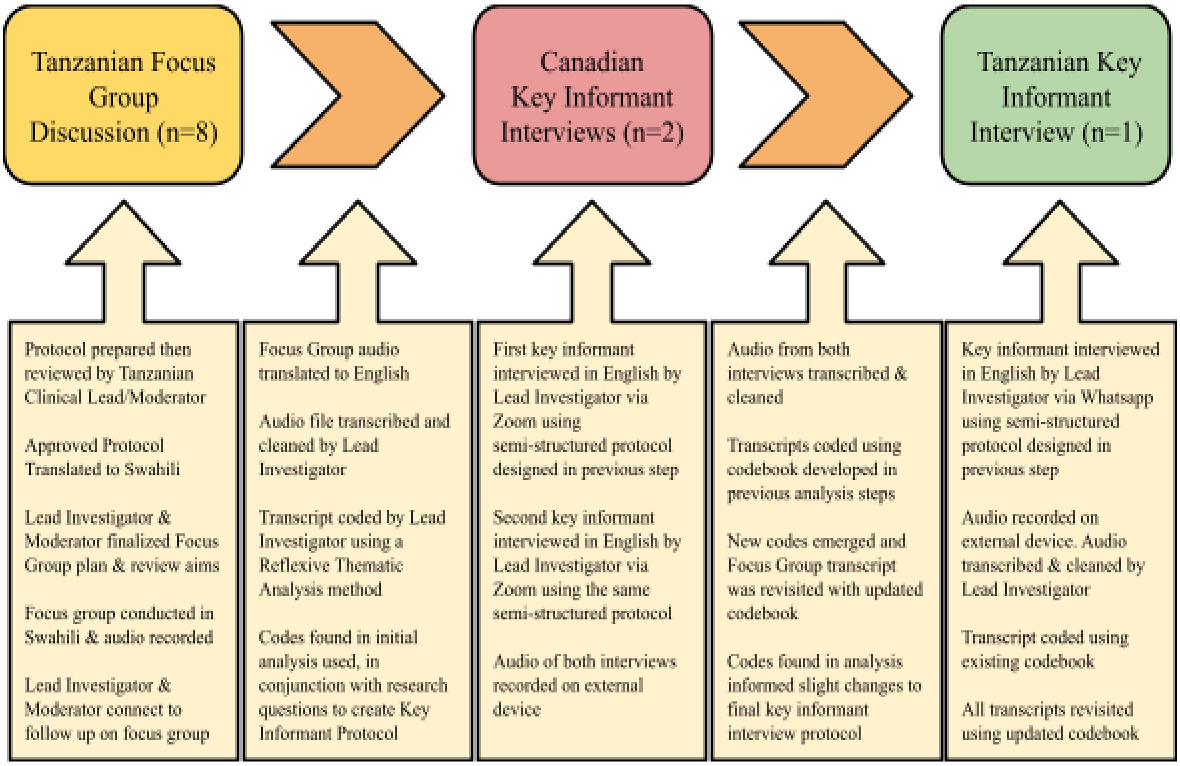
Section 3. Methods

3.1 Study Design

This study uses two qualitative methods (focus group, in-depth interviews) to explore the lived experience of participants. This study is cross-cultural, investigating the experience of clinicians with different national, religious, and professional backgrounds (26). Qualitative methods are appropriate here as they are flexible and allow studies to follow a design that is iterative and flexible to the professional and cultural context of the participants (27).

The iterative study design used online communication, multiple languages and multiple methods of data collection, and several stages of analysis. A focus group approach was used to facilitate a discussion with the team of clinicians Tanga followed by key informant interviews with project leaders. Participants were purposely selected for their individual insights and specific roles within the cross-cultural collaboration (27). *Figure 1* illustrates the stages of the study's inductive process:

Figure 1. Study Phases



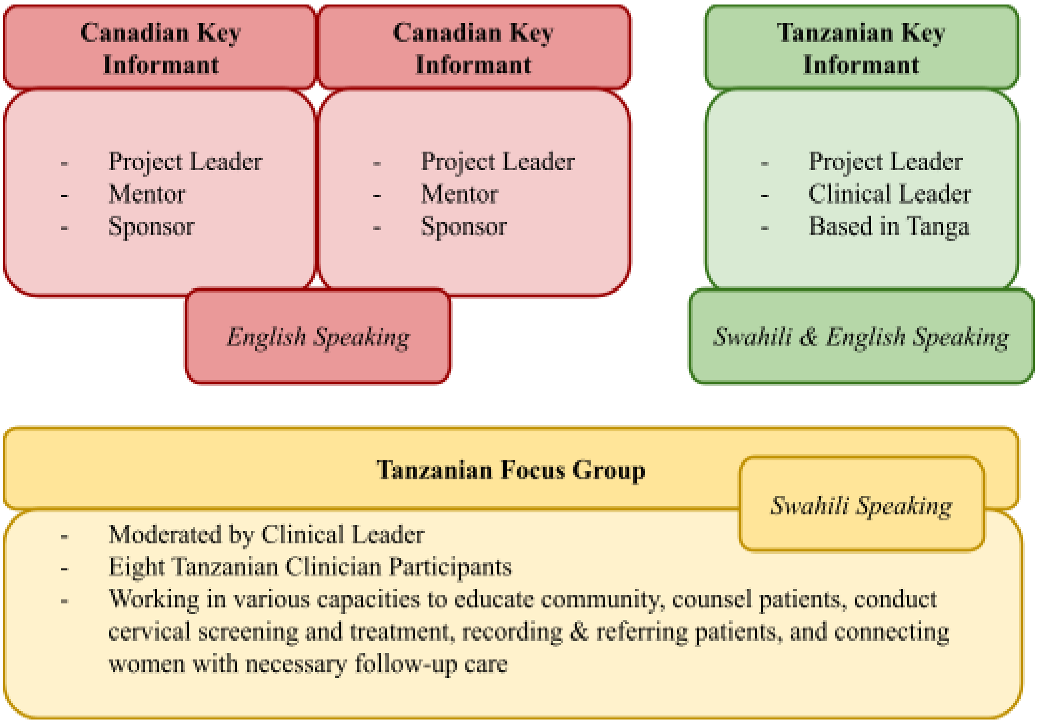
Each step of data collected was designed to suit the participants and the clinical project involved. In this study, the focus group participants, local Tanzanian clinicians, were interviewed using a semi-structured protocol in Swahili. It was appropriate to engage Tanzanian clinicians in a conversation in their local language both because it allowed for a more natural flow to their narrative (28). The focus group was planned and coordinated in collaboration with the local Clinical Lead, as is the case with much of communication between the Canadians and the Tanzanian clinicians. The local Clinical Lead also provided guidance for the study and protocol design so that data collection fit smoothly in the work schedule of the clinician's routine, and also reviewed the specific themes in order to ensure cultural safety (26). The Clinical Lead reviewed discussion themes presented by the candidate in the protocol drafting process, built rapport with participants, and moderated the Swahili focus group. These steps are supported and suggested by best practice guidelines in qualitative cross-cultural research (29) .

The following sections outline the participants selected, recruitment techniques used, cultural safety and ethics, instrument design, data collection and translation specifics, and an overview of the thematic analysis technique used.

3.2 Study Participants & Recruitment

There were eleven research participants involved (See *Figure 2* groups of participants). The eight focus group participants, recruited in collaboration with the Clinical Leader, all worked at TRRH in the HIV and cervical cancer clinic. There was variation in the length of their involvement with the collaborative project. Some focus group members had worked together with Canadian partners in various capacities over the past ten years while others started their work in the clinic in the past two years. The focus group consisted entirely of participants from Tanzania who spoke Swahili. They had various roles within the clinic including equipment technicians, screening and treatment clinicians, community education and counselling clinicians, and a gynaecological doctor. The participants were purposely selected because their hands-on experience carrying out cervical screening clinical tasks, connecting with patients from the local community and working together with Canadian partners provides a unique perspective that addresses the study aims. Saturation was achieved by attaining a diverse range of perspectives including different clinical and collaborative roles (26).

Figure 2. Study Participants



In addition to the focus group participants, three key informants were purposely selected for their distinct roles in the international collaboration. Two of the key informants were English-speaking physicians from Canada. They have both had long careers providing care in Canada and became connected with the cervical screening project through their BPCPS work together with Tanzanian clinicians. The Canadian key informants have a role as leaders, mentors, and sponsors in the cervical screening project. They were able to share their experience working in a supportive capacity with international partners implementing cervical screening and patient follow up in a foreign setting.

The third key informant was a Swahili and English-speaking Clinical Leader based in Tanga. They had a leadership role in the cervical screening clinic and in the collaborative relationship with the Canadian key informants. They were important in communication, decision-making, and implementation of project goals. Their distinct experience as leader and liaison contributes a unique perspective towards the study's aims.

The complete group of eleven participants spoke from diverse backgrounds and personal experience while also sharing a common connection to the research questions. This allowed for engaging conversation with the emergence of many relevant themes in both focus group and interview sessions (29).

Members of the research team have well-established professional relationships with the participant group. The recruitment strategy consisted of a personal introduction facilitated by the Canadian collaborators followed by direct contact with the Tanzanian Clinical Lead. The Lead Investigator met with co-researchers, participants and the Swahili-English translator online. Zoom, Whatsapp and email were used to establish and maintain communication throughout the research planning and data collection process.

Current frameworks for best practice in cross-cultural research suggest co-researchers who have an understanding of the local context should play a leading role in recruiting research participants (29). Cross-cultural qualitative research poses specific challenges and requires additional steps and human resources (26). The Tanzanian Clinical Lead had a key role in navigating these challenges. Particularly in their role as moderator of the focus group. This enabled the focus group to be hosted in Swahili and to occur with a moderator that had previous rapport with the participants. The focus group was conducted at a time that fit within the demanding schedule of the clinic's activities, and did not have to navigate the limitations of internet connection and technical difficulties with video call quality. All of these factors were an advantage to the study's quality (30)(31). The local Clinical Leader played an integral role in informing the sample size and recruitment strategy of focus group participants (26).

3.3 Cultural Safety & Ethics

Research itself has a culture with values and practices that may interact with the co-researchers and participants' worldview in a cross-cultural way (29). Ethical conduct of cross-cultural research requires attention to processes, such as content checks with a focus on cultural safety, personal introductions and planning meetings with cultural consultants, additional translation activities, follow up meetings with co-researchers and extra focus on reflexivity throughout the analysis process (26). In addition to the support of clinical and cultural consulting members of the research team, extra ethical checks and steps were conducted throughout the project to ensure a safe experience for all participants. Discussion guides and interview protocols were checked by these consulting collaborators to ensure a comfortable experience for participants (29).

The clinical and cultural context consultants played a vital role in informing the objectives and logistics of the study. The involvement of a cultural consultant in the research process is crucial to ensure effective communication, appropriate ethical considerations, and valid findings (29). The involvement of collaborators with experience in the study context also helped to bridge cultural divides, liaised with participants and ensured the research aims served the participants's priorities (29). Flexibility in study design is also an important aspect of cross-cultural research (15). Changes to research objectives, focus themes and the data collection approach were made to accommodate the priorities of participants (26). Research that is grounded in the priorities of participants produces deliverables that are a valuable contribution to local, context-specific solutions (29).

All participants were provided with information about the nature of their involvement and the purpose of the study. Informed consent was obtained from all participants and it was made clear that involvement was voluntary. Differences in worldviews and perspectives were acknowledged and there was no judgement of the views shared by participants. Further, their identities and personal information were kept confidential and not shared beyond the research team. Approval of the data storage and personal information protection plan was obtained from the NSD (Ref.nr. 166666). Participants were compensated for their time, following local conventions.

3.4 Instrument Design

The qualitative instrument design process was supported by all members of the research team. The Lead Investigator conducted a literature review and created a project proposal. The proposal was presented to project collaborators and adjustments were made to fit clinical context. The Lead Investigator created a focus group protocol based on background information provided by project collaborators and a literature review. The protocol was reviewed and approved by project collaborators, senior researchers and supervisors.

The focus group protocol and semi-structured interview guides were designed based on the participants' relationship to the research topic (29). The protocol aimed to generate discussion surrounding focus themes critical to the research question while still allowing for a narrative flow and allowing the emergence of topics important to informants (27). The instrument design followed a funnel structure with warm up questions then increasingly engaging questions and included probes to promote depth (26). The key informant interview guides were designed based on a similar semi-structure of key themes found in focus group analysis and themes found in a background literature review. The inductive design of interview instruments through reflexive thematic analysis (RTA) is illustrated in *Figure 1* (32).

Language is an important consideration in the design of qualitative discussion guides (29). A translator was involved before the focus group to translate the protocol from English to Swahili and after the focus group to translate the discussion audio from Swahili to English. The translator was also present on video calls between co-researchers to support smooth communication (30)(31). Terminology and use of specific language was also checked with project collaborators to ensure it was relevant and would be well received by participants. There was also an emphasis on strength-based themes and phrasing. The terminology and themes in the key informant interview protocols was also influenced by the codes that emerged in the analysis of the focus group discussion. This ensured a cohesive conversation between the narratives of the focus group participants and the key informants. .

This strengths-based study focused predominantly on the factors that contributed to the sustainability and strength of the collaborative approach used by participants. As such, the design of questions and prompts were primarily intended to explore the positive elements of the clinicians experience. Discussions regarding challenges and negative experiences frequently occur in conversation; an intentional focus on the strengths of groups and individuals is important to giving airtime to the positive aspect of experience (33). Examples of these instruments, including translated versions, can be found in the appendix.

3.5 Data Collection, Translation & Transcription

The research team used online tools (video chat and email) to connect over vast geographic distances. The decision to collect data using online channels as opposed to in-person was informed by several factors. Firstly, this study was conducted in a world still recovering from a global pandemic. The researchers were cautious regarding international travel when the project plan was being developed. Post-pandemic literature suggests that more international research is being done online and that online data collection is a new horizon in the world of qualitative research (26). Further, the Lead Investigator travelling to Tanga would have involved considerable cost for the environment, the timeline of the project and for the workload of an already busy host clinic (34). The ability to adapt study design to take into consideration the influence of external factors is essential in quality research, especially in cross-cultural contexts (26).

The focus group audio was professionally translated, transcribed and then analysed using RTA(35). The codes and themes found in the analysis of the focus group informed the second stage of data collection. A semi-structured interview tool was developed using key themes from the focus group's discussion, as well as background knowledge from a literature review.

The key informant interviews were conducted in English, as communication between the Canadian and Tanzanian project leaders occurs in English. The interview audio was transcribed and analysed using the same reflexive thematic code-book. Overall, this analysis aimed to prioritise the unique insights of each participant in order to construct an overarching narrative about the nature of the collaboration and to identify areas of strength and weakness (36). The RTA process involved finding themes, with importance framed by 'keyness' rather than frequency, and with no hierarchy of themes or findings by focus groups or key informants (36).

Data collection from the key informant interviews took place in English in real-time using the video chat channel, Zoom and WhatsApp. The online platform was closed to outside access to ensure privacy. The audio was recorded and then transcribed and cleaned; all identifiers and personal information were removed from scripts, anonymized, and where necessary, replaced with pseudonyms.

3.6 Reflexive Thematic Analysis

RTA was used to code transcripts and generate themes. RTA is distinguished from traditional thematic analysis in that it focuses on "keyness" rather than frequency to identify codes and themes to answer guiding research questions (32). RTA is a six-phase process, which includes data familiarisation, systematic data coding, generating initial themes from coded data, developing, reviewing and defining themes, and writing a report (35). Data familiarisation occured in the transcription of focus group and interview audio. Coding occured in several sessions after the focus group and was revisited after the key informant interviews. The reviewing and defining of themes were also revisited in different stages as the Lead Investigator became more familiar with the material and as new themes arose. RTA is an iterative process that is well-suited to inductive research and the six-phases can be revisited and re-ordered over the course of the study as new patterns, themes, and levels of understanding emerge (35).

RTA fully embraces qualitative research values and the subjective skills of the researcher as it places trust in the views of lived experience (36). It is optimal in the context of this study, where the researcher is removed from the focus group and has a limited in-person connection to the participants (32). Distance between researcher and participants is not necessarily a limitation to the quality of the investigation as RTA recognizes that contribution to and the development of new knowledge can occur from a variety of positions and perspectives (35). Despite their physical and contextual distance, the Lead Investigator could still engage with the participants' insights in a meaningful way, just as international collaborators can interact with a foreign community's health needs in a meaningful way (35). In both situations, ethical guidelines and critical consciousness can help guide the interaction (37). To ensure quality and to maintain rigour, active 'reflection' in the form of memos and documentation of decisions made in the coding process is required (35).

The Lead Investigator used DeDoose, an online qualitative coding program to conduct the coding, support the analysis, and keep over two hundred reflexive memos. Excerpts were organised on several levels including core themes, codes, and subcodes. A themed table was generated with key excerpts extracted to inform the presentation of analytical findings. A concept map was also used to organise the themes and codes, and to visually analyse their connectivity.

Quality analysis using RTA should also include a research journal of memos that document the analytical decisions made by the Lead Investigator (36). The research journal should hold a record of the reflexive thought process and interpretive perspective of the researcher (36). The Lead Investigator's Reflexivity Statement can be found in *Appendix A* followed by examples from the Lead Investigators research journal in *Appendix B*. The additional sections are intended to share insight into the analytical process of the Lead Investigator as they interpreted the stories of participants and immersed themselves in the RTA process of reading, reflecting, questioning, writing, wondering, and returning to reading (35).

Section 4. Findings

Patterns and themes emerged to form a cohesive narrative of experience with insights from focus group participants and key informants. The flow of the discussions with both the focus group and key informants started with reflections on the origins of their collaboration, and transitioned to sharing about their current experience. Then they spoke about their hopes and plans for the future of the collaborative project.

The themes found in the coding of the focus group discussion generated further questions for the key informants. The findings surrounding many of the themes include input from both Tanzanian and Canadian participants, although some topics stimulated more conversation in the focus group and different topics stimulated more sharing in the key informant interviews. The focus group, for example, spoke more about their experience of mutual learning while the key informants spoke more about decision-making structures.

The findings are divided into eight themes with several codes that fall under each. The themes, determined by 'keyness', reflect focussed elements of participants' insights regarding factors that influence the success and sustainability of their collaborative, cervical cancer screening project. The main themes found include the foundation for their relationship, connection to each other and to community, a collective goal, the flow of finances, project progress and success, and thoughts regarding the future.

4.1 Foundation for a strong relationship

Participants described the origins of their collaboration and their history working together in a palliative care capacity. There was consensus that they had built a strong foundation for collaboration starting at the beginning of their relationship. They first met over ten years ago in connection to a palliative care initiative. Through that initial experience, the Tanzanian and Canadian clinicians got to know each other professionally and build personal connections. A Canadian Key Informant reflected that the strength of their connection to the team and to the work at TRRH set to tone for a long-term collaboration:

> *"We went there with the idea of a six-month life adventure. And then we just really fell in love with the place, fell in love with the people, and saw potential for an ongoing relationship."*

These sentiments were shared by the Tanzanian Key Informant who smiled as they described working together on the palliative care project and visiting patients in their homes. They said they really enjoyed working together and that the positive experience was a highlight in their career:

"One of my favourite parts was doing patient centred care and home visiting together. When we worked in palliative care, we used to go together to patients' homes. I liked that a lot."

A Canadian Key Informant recalls pulling over in the car after having said goodbye after their initial trip. "*We were in tears*" they said, emotionally moved by the whole experience and personally connected to the community. Both Tanzanian and Canadian Key Informants recall asking themselves:

"*What can we do to build upon this experience*?"

The Tanzanian and Canadian team realised that their six months of work together in palliative care set the tone for a potential long-term collaboration. A Tanzanian focus group member spoke fondly of attending palliative housecalls in the community together with the Canadian clinicians. They said they enjoyed working together in the community and they especially enjoyed working and learning together with the Canadian partners. They said they felt respected and that even in the early days, there was an open flow of information between clinicians.

Participants described the cervical screening collaboration being born from the positive experience and established professional and personal rapport from working together on the palliative project. They also discussed perceived need, local priorities, an invitation, genuine interest in learning, recognizing strengths, recognizing limitations and establishing trust as being important factors in the foundation they built for their strong relationship; these themes are discussed in the sections below.

4.1.1 Perceived need

The key informants, both Tanzanian and Canadian, continued working together in the area of palliative care with in-patients and in a community-based capacity. It was then they started noticing patterns in their patient population. A Canadian Key Informant described that they began to examine "*Who are we seeing and what are we seeing?*" in their palliative clinic.

A Canadian Key Informant describes "*droves*" of women with late-stage, terminal cervical cancer who were in need of palliative care. There was no official registry to quantify the burden of cervical cancer on the Tanga region. However, the experience of the clinicians in their palliative practice was sufficient to inform both Tanzania and Canada that something needed to be done to prevent cervical cancer in the region. The Tanzanian Key Informant describes:

> *"This project started in a small way…. Since 2008, [the Canadian clinicians] have been supporting a budget according to the [palliative] need until we came to realise that many of the patients that we were helping with palliative care had cancer. A lot of them had cancer and even more had cervical cancer."*

There was a collective feeling of '*need*' to engage in prevention and close the gap between what they knew could be done and the infrastructure systems that were in place at the time. A Tanzanian Focus Group member spoke about the "*needs of the community*" as they discussed "*the challenges that are faced in the community*".

Other focus group participants echoed these sentiments regarding '*need*'. Tanzanian participants also described feeling that they '*needed*' to engage funders and mentors so that they could learn screening techniques and equip a cervical screening clinic. One focus group participant specifically described wanting '*to be able to keep up*' with peers in more resource rich regions of Tanzania. A Canadian Key Informant also recalled recognizing the specific need in the Tanga region:

> "*All these big foundations were working in other parts of Tanzania, but Tanga region didn't get anything. They were this little pocket that still had no screening going on…*".

The preventable and treatable nature of cervical cancer made its overwhelming palliation of local community members inspired both Tanzanian and Canadian members of the team to become involved in a prevention project. One Canadian Key informant recalls feeling that they "*needed to do something to help close the gap*". When participants speak about their screening project, they refer to the specific local need that was perceived by both Tanzanian and Canadian clinicians.

4.1.2 Local priorities

The community context and priorities of the Tanzanian clinicians came up frequently in discussions and was important to all participants. One Tanzanian focus group participant commended the Canadians for the way they integrated themselves into the community, learned from the Tanzanians, and addressed specific local needs:

“It is commendable. The Canadians have integrated themselves into the needs of the community. When we go to see the Tanzanians, some of the women in their homes, the Canadians are able to integrate with them easily and well, and they learn from things that affect [our community].”

Beyond their mentoring and care work in the community, the participant recalls sitting down together and being involved in the process of setting an intention for the project based in the community’s care priorities:

“*We sat down and we thought about what we could do so that women don't keep getting infections that caused cervical cancer so that we can help them early enough before they get to the cervical cancer stage.”*

The Tanzanian Key Informant built upon this and shared:

“… that is what made us agree to start the cervical cancer screening initiative so that we can be able to get this cervical cancer only in its initial stages.”

The participants also emphasised that the objectives of the cervical screening project stemmed from a collective understanding of community need and local clinician’s priorities. The Canadian clinicians reflected that they were involved in the identification of gaps in the existing care systems and recognized a need for improvement in the prevention of cervical cancer, but they both made it clear that the Tanzanian clinical team made key decisions about cervical screening system implementation. One Canadian Key informant recalls when the Tanzanian Clinical Lead told them: “*we need algorithms. That's what we need. That's what we use "*. The Canadian Key Informant explained that their role was to support this planning process and identify gaps in the care systems. They used professional knowledge and experience to support the priorities of Tanzanian Clinical lead and their team. A Canadian Key Informant used the term ‘*cheerleader*’ to describe their role in the implementation stage; they were involved: “*in identifying gaps where things could improve, for example around follow up and documentation*”.

The Canadians describe intentionally evaluating the local landscape of care provision and engaging in discussion with the Tanzanian team members about the best approach to closing said gaps and not "*simply exporting a western approach*".

Participants described the important roles of both Canadian and Tanzanian partners in identifying gaps and planning the implementation of solutions. However, prioritising the input and experience of local Tanzanian clinicians was a contributing factor in building a strong foundation for a successful collaborative project in the Tangan context.

4.1.3 Invitation

The participants also highlighted the importance of an invitation as they established a collaborative relationship. A Canadian Key Informant referred to "*a distinct invitation from the gynaecologist at the hospital*" that was important in the initial phase of their collaborative relationship. They felt that they "*were very much welcomed into the community*" as a result of the invitation and introduction.

A Canadian participant reflected on the benefits of being invited into the regional hospital, as it helped them establish trust and connections with local clinicians: "*I feel like we still benefit from the original invitation that we had into that big regional hospital".*

They spoke of friendship and invitations as being an important factor in being accepted into the local professional community and being able to start work:

> "*I felt because we were now invited by them, We were accepted in [the region] right off the bat. We were friends of [another clinician in the region]. And that helped us get through the door and start our work*"

Further, the idea of the Canadians being explicitly asked and invited to be involved in the cervical cancer screening efforts were important to the Tanzanian clinicians. A focus group participant expressed:

> "*Our partners from Canada have joined with us wholeheartedly and with both hands. They partnered with us and they heard our call, our [request] to be trained and have mentors to help us in this area of cervical cancer screening.*"

There was agreement in the focus group and one participant recalled being pleased that the Canadians agreed to build upon their work together in palliative care and accepted the invitation to expand the partnership and work towards addressing the burden of cervical cancer.

There was a pattern in the participant's narratives that expressed the importance of, not only pre-existing rapport, but also an express invitation from Tanzanian team and their colleagues in the professionals community. Invitations contribute to the building of a strong foundation for collaboration.

4.1.4 Interest in learning

The next factor that contributed to a strong foundation for collaboration, according to Tanzanian and Canadian participants, was a genuine interest in learning. The Canadian and Tanzanian clinicians saw potential for mutual learning. One Tanzanian Focus group participant reflected:

"So, we've learned a lot. We have gotten information from them on how they treat their patients back in Canada. And then we combine it with how we treat our patients here and we come up with the best solutions and the best way to treat our patients here locally"

They also noted that the flow of learning "*went both ways*". They explained further saying:

"*We've learned from them and they've also learnt from us"*

The focus group participants felt that they had taught their Canadian partners a lot about their culture and care conventions in Tanga. One focus group participant shared:

"They have learnt a lot and gotten a different experience on how to deal with patients in a different kind of environment other than what they are used to" and "*I would say the Canadian doctors have learnt a lot. They've learnt about our traditions, about our culture and our beliefs, the cultural beliefs of the Tanzanian people …how we live together as a community, how we treat each other. I am certain that they have learnt from us … they've also learned our way of life so that when we go and they see how people live.*"

Key informants agreed strongly with this sentiment. The Canadian Key Informants reflected that they had learned immense amounts from the Tanzanian team. One Canadian participant mentioned that, among other things, they had "*learned from and admired [the Tanzanian team's] flexibility*".

They also suggested that an interest in learning about the local community also contributed to the success of the project. A Canadian key informant described home visits to palliative patients in their early work in Tanga and immersion in the community was highly informative to their long term approach. The Canadians lived in the community with their family and sent their children to local school. They also shopped in local markets and were fully invested in learning from the immersive experience. One Canadian participant said:

> *"We've been to the market, we know what the food looks like, and how people actually live there is another thing.... We really were interested."*

They continued to describe this interest as going beyond personal benefits and informing the project:

> "*It wasn't just a curiosity but it also helped us understand our limits, and how limited their resources were."*

Beyond the project, there was also a collective interest in professional learning and capacity building. The Tanzanian team was keen to learn clinical skills like how to perform a pap test and pelvic exam, for example. In a professional capacity, the Tanzanian participants described the Canadians as '*mentors*'. One focus group participant shared:

> *"We have learnt lots from our Canadian mentors. We have gotten knowledge and information and know how to treat patients in our community. And that has really motivated us the team here in Tanzania".*

The Canadian key informants agreed that they played a mentorship role within the partnership. However, they also emphasised that the flow of learning went both ways. Focus group and interview participants saw the collaboration as an opportunity to learn about each other's experience with care provision in a culture that was different from their own. One Tanzanian participant shared:

"*They have given us that experience from their side. And we've also given them experience from our side [of the cultural divide].*"

This sentiment was echoed by several focus group participants. There was also genuine interest in personal development and learning from cross-cultural collaboration. In the focus group, one Tanzanian clinician shared:

"*This has helped me to understand how I can help the community where I live in. Like, for example, this initiative that we've come up with ... And, this [collaboration] has challenged me to set up some time, even if it's just an hour or two to sit down and think: 'What else can I do to make the community around me better?' and 'What else can I do to improve what I offer my community?'"*

One Canadian key informant's description echoed this sentiment. They expressed having a great interest in personal development and learning from the start of their cross-cultural experience. One Canadian describes specifically "*[learning] huge lessons in resiliency and innovation*".

Across all participants, a genuine interest in learning both personally and professionally was seen as a key factor in the success of both their collaborative relationship and their cervical screening project.

4.1.5 Recognition of strengths

According to key informants, recognizing the strengths of the clinical team and the community is important in the development of sustainable partnerships and systems. A Canadian key informant described it being vital to find collaborators with leadership skills and a strong foothold within the clinical system. The other Canadian participant agreed. They said:

"The Tanzanian Clinical Lead's positioning in the system was so important to success. ... and if you look at first [their] buy-in and [their] leadership and [their] positioning in the healthcare system there and [their] power, we would not have had the success of an enduring program without it ... I think that's incredible"

They added that the strengths and characteristics of individuals is an essential part of the collaborative equation and highlighted the Tanzanian Clinical Leader's ability to "*make things happen*".

The Tanzanian key informant mirrored the sentiments of their fellow collaborative leaders and was complimentary of the Canadian clinicians. They expressed that they were good mentors and supportive partners. They highlighted that "*[the Canadians] are good at following up and checking in*".

The key informants also offered reflections on the clinical team's strengths. The Tanzanian key informant mentioned their team's "*logistical organising skills and record-keeping abilities*". They also shared: "*My team is good at doing their work. Good at doing their tasks and good at following the plan.*".

The Canadians key informants added that list and described the clinical teams skills in fostering connection with their community of patients, counselling clients, adapting quickly to new systems and technologies, and creating a receptive environment for a positive collaborative experience.

One Canadian participant emphasised that it was "*the people, the individuals involved*" that determine the success of a project and "*the enduring relationship with a very strong connection*". They also recognized strengths in the Tangan community and the clinical culture that contributed to building a foundation for collaboration. One Canadian described the community and clinical culture for acceptance. They spoke about how clinicians would provide care for anyone, despite their religious or personal background. The key informant expressed: *"they have a strong tradition of getting along and respecting faith.*" They continued, recognizing further strengths in the clinical culture, mentioning: "*I'm always impressed at just how flexible [they] are.*"

Overall, there were frequent references to the importance of recognizing and working with the strengths of individuals and teams. Building upon existing strengths contributed to the success of the cross-cultural partnership and implementation of the cervical screening project.

4.1.6 Recognition of limits

The recognition of limits was equally important to the recognition of strengths. This theme emerged in key informant discussions; both Canadian and Tanzanian participants acknowledged the importance of evaluating and communicating realistic boundaries.The Tanzanian key informant explained:

> *"To work well together, you have to make a clear plan. You have to be clear and open about your ability to achieve the things in the plan. We go through a list and make it very clear about our limits and what we are trying to achieve."*

A Canadian key informant agreed and added the importance of recognizing the limits of the human resource capacity to ensure a manageable "*ask*" or workload for clinicians on the ground.

Both sides recognized the hard work required to implement their cervical screening project. They had a realistic view of their ambitions. They expected to face challenges with finances, connections, time, and resources. Key informants all emphasised the importance of understanding the limits of the budget and being clear with each other about what they can and cannot achieve with the available funds. The Tanzanian key informant described:

> *"We are very open and very frank about our limits. We go through the list of what we want to do and we say 'This we can manage this, but not this' and they say 'We have a budget for this and not this'. So it is very clear. We are clear with each other about what we can and cannot do."*

There was consensus across all participants that their project was a small scale initiative with limits. One Canadian participant expressed that they *"recognize that [their] resources are not bottomless*". They continued to say that "*the relationship has made it possible to work through the limitations of money, the limitations of staff and the limitations of time*".

Key informants and focus group participants also recognized that systems, such as the current clinical technology and record keeping tools, were in need of updating in the near future. One Tanzanian participant reflected:

> *"Even now, like [the Clinical Lead] has said, there are a lot of equipment that we currently do not have. This brings quite some challenges when we are performing our day to day work. And, talking about the electronic document documentation, it's still it still affects us because here in our clinic, we are still using paper documentation. But, when we look at the General Hospital documentation, they're doing the documentation electronically*."

As they looked to the future, key informants also recognized, as with all people and projects, their careers were finite and time would be a limiting factor in their own personal involvement. The recognition of the realistic limits on the project did not prove a barrier to progress or success but an important factor in the building of the foundation for strong collaboration.

4.1.7 Trust

The concept of trust emerged frequently in discussions about financial reliability, personal intentions, and trust in the initiative itself. Participants emphasised the importance of trusting both the people involved and the project aims. One Canadian key informant described their "*trust in the people as well as trust in the messag*e". The Tanzanian key informant agreed, mentioning "*you have to be trusting too. About everything*" they added "*especially about funds".*

One participant had a similar reflection in the focus group when they described the connection between trust and money: "*we use [the funding] with a lot of integrity and transparency*". A Tanzanian participant expressed that, from their perspective, their reliable and transparent use of funds "*motivated the Canadians and gave them great joy*" and further contributed to strengthening their collaborative relationship.

Participants also explained that trust was built upon previous experiences, including their collective experience with home visits in the community and palliative care. Participants also drew a connection between the length of the relationship and the nature of the trust in the partnership. One Canadian key informant explained: "*time is a big part of any relationship*" and the Tanzanian key informant agreed:"*we have worked together for over ten years, so there is trust, that is why there is trust*".

Consistency was frequently cited as a factor in building trust, with continuity over many years serving as evidence of successful shared decision-making and delegation. Over the long period of their relationship, the Canadians and Tanzanians divided tasks between them and have "*just had to trust " each* other's professional judgement. When the Canadians leave the clinical site, they delegate leadership tasks to their partners. The Tanzanian team insisted that '*they shouldn't worry*' and that the project was in safe hands. They have returned, time after time, to find that the TRRH team was working consistently to continue project efforts. The record-keeping systems were maintained in their absence and showed documentation of project progress.

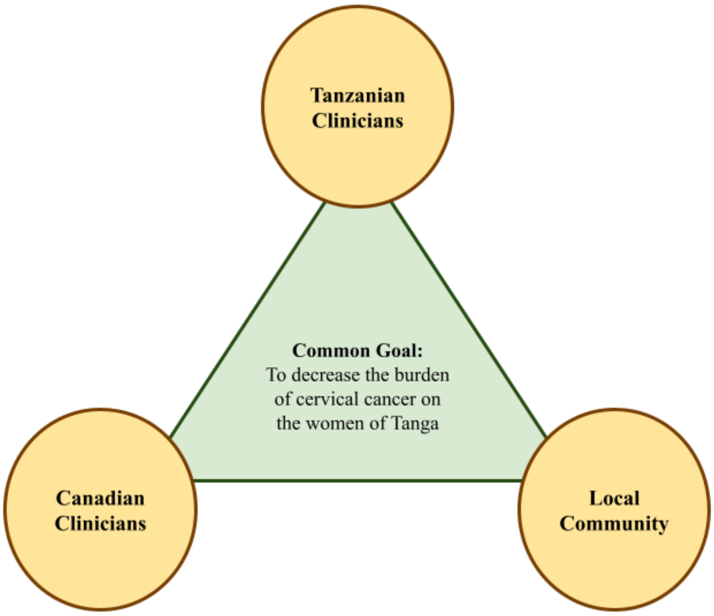
One Canadian participant describes the joys of returning and seeing with their own eyes that the project work continued and that "*[the Tanzanian team] [has] done all this!*". They described pride and the positive experience said it "*felt like that every time*" they returned to find documentation of all the women screened between their visits. Key informants expressed that these positive experiences have contributed to their perception of their partners as reliable, building the trust between them.

Trust was a theme that all participants believed influenced their strong connection. Key informants reflected that the team's past experience together working with palliative cases in the community contributed to a foundation of reliability between partners that supported their collaboration from the outset of the cervical screening initiative.

4.2 Connection between clinicians

The theme of connection was found to be a key topic in all participant conversations. Connection is mentioned in its many forms including between clinicians from Canada and Tanzania, between clinicians and patient communities, and between the partner's project and other aspects of care provided at the clinic. Participants discussed factors such as in-person visits, knowledge exchange, and collective decision-making that strengthened their connections. They also reflected on factors such as language barrier, physical distance, and sociocultural factors that posed some challenge to connection. *Figure 3* shows these main avenues of connection discussed and positions that factors that participants found to strengthen or limit connection:

Figure 3. Multiple Dimensions of Clinician's Connections



The participants used varied language to describe the nature of the connection between Canadian and Tanzanian clinicians. The most frequent and relevant words used to describe the relationship were "*mentorship*", "*partnership*", "*sponsorship*", and "*friendship*". The participants described that their roles within the partnership have evolved over time. Despite the changes, one Tanzanian participant described "*the connection [was] stronger with time*".

Focus group participants expressed that their connection to the Canadians was true and genuine. They told stories of experiences they had shared and were in agreement that they always look forward to the time they spend together when the Canadians visit.

Beyond the importance of their professional roles that tied them together as mentors, sponsors, and partners. The key informants emphasised the importance of friendships. One Canadian key informant described the relationship as 'enduring' and partly attributed this to the fact that "*[they] are friends*". Another Canadian participants agreed that it was "*a true friendship*", and that they were always happy to see each other when they were reunited.

The Tanzanian key informant echoed these sentiments and said "*We are friends… we have worked together for more than 10 years! They are my friends.*" and "*we are happy when they come.*"

The Tanzanian key informant also added that their relationship was a "*win-win*". They suggested that both sides benefited, but also contributed to maintaining the link between them. Participants had a predominantly positive experience and members of the focus group, when referring to their Canadian partners, said our "*brothers from Canada*".

Participants described several elements that impacted the nature of the bond between clinicians such as time spent together in person, mutual knowledge exchange, open communication, shared-decision making, and consistency, as described in the sections below.

4.2.1 In-person visits

In-person visits, when the Canadians travelled to Tanga, were a highlight for participants. One Canadian Key Informant described a recent trip where they were met at the bus stop with enthusiastic greetings and hugs. The reunion was a happy one and they recalled the warm welcome as they "*walked through the hospital, and everybody waved and came to say hi*".

The Tanzanian team agreed, as one focus group participant put it: "*We are happy when they come* ". They added that the in-person visits are an important time for the partners to connect, communicate and plan. The Tanzanian key informant explained it is "*easier when they come here in person to communicate and to sit down and plan*".

A Canadian key informant further described the nature of these visits; "*being physically there, that's really the moment when the connection and like the progress and the discussions around the table happen*".

They described that they often used the first couple days to become reoriented in the clinic context again and catch up on the progress made since the last visits. These moments were inspiring to both key informants and they reflected on the emotion of re-entering the clinical space and reviewing records and realising the positive progress being made. Canadian key informants described site visits as inspiring, intense, and productive.

Participants were in agreement with the sentiment shared by one Canadian key informant who said "*so much happens in those short visits*". The other Canadian added; "*just by being there, it helps the program move forward because they know that it's important to us because we make the effort to go there*."

The Tanzanian focus group members were in agreement. They described feeling supported when the Canadian partners were there. They also felt it was easier to ask questions and discuss solutions when the Canadians were physically there at TRRH.

For much of the positive connection won when they were together in-person, there was a challenging loss in connection when they were far apart. Key informants describe the end of visits; they sit down as a leadership team to create a budget and to create a plan moving forward until their next visit. Then, after discussion and delegation, they '*just have to trust*' that progress will continue in their absence.

Canadian key informants describe leaving Tanga as the most difficult part of the collaborative experience: "*that is the hardest part*". After being so intensely involved in planning and immersed in the clinic, they have to return to their lives and responsibilities in Canada and rely on intermittent connection through technology.

One Canadian key informant describes: "*there's this terrible frustration sitting here [in Canada] thinking: 'if we were there [in Tanga], you know, we could help with [more aspects of problem solving'*."

The state of travel in the past several years due to international travel restrictions and disruptions has made visiting in-person especially difficult. However, one Canadian key informant described a recent trip to Tanga and reflected: "*it was lovely to go back this year with [members of our family], and it was lovely to see that a lot of the [progress] continuing!*"

4.2.2 Knowledge Exchange

Participants often referred to the mentorship elements of their collaboration. The Canadian physicians focused on capacity building; they taught clinical skills workshops and theory to TRRH staff.

Participants emphasised the concept of knowledge exchange; in both focus groups and key informant narratives, participants reflected that the flow of knowledge went both ways. One Tanzanian focus group participant described:

> *"[Our partners] have increased our knowledge and experience And this exchange of knowledge and information is a win-win situation because they have learnt from us about the situation in Africa and we have learned from them about things, how things are done abroad*"

Another focus group participant added:

> "*So we learn from each other ...we correct each other. So, for example, if we do something that's something in a wrong way, then they're able to challenge us and say, maybe here you could have done it differently. And if they do something that's not right, then you're able to challenge them and say, Maybe here you could do something differently.*"

A Tanzanian participant further described the open sharing of information and the nature of their communication in the teaching setting:

> " *We believe that the information we get from the Canadian doctors is correct and is good information. And we also feel very confident to ask them questions, because every time we ask them a question, they answer us properly and in a good and respectful way*."

The Canadians described many of the lessons they learned from the Tanzanian team. Their descriptions made it clear that the Tanzanian team played a vital role in teaching them the local landscape in both care and community settings. Canadian key informants learned, not only about the local culture and customs, but also new ways to function as clinicians. One participant noted that, among other things, the Tanzanian team taught them "*huge lessons in resiliency and innovation*" and "*flexibility*" and that those concepts now informed their practice back in Canada.

Overall, the findings suggest that the mutual exchange of knowledge between Tanzanian and Canadian clinicians was a valuable contributor to fostering their sense of connection.

4.2.3 Communication

Participants reflected on the topic of communication; they concluded that communication between parties both strengthened and challenged their sense of connection. They described the avenues of communication and the open nature of their communication.

When the Canadians are at the clinic in Tanga the flow of communication goes relatively well. One key informant expressed "*wishing [they] could speak more Swahili*", as the language barrier "*makes things difficult*". The TRRH clinical team has a basic level of English. Teaching clinical skills and record keeping procedures are examples of instances where direct communication between the English-speaking and the Swahili-speaking clinicians was challenging and interpretation was necessary. However, for the most part, Canadians felt that clear communication was possible when the team was all together in person.

Tanzanian focus group members agreed and one participant added that they felt their communication with the Canadian partners was "*very open*" and allowed for "*honest feedback about some of the challenges [they] face*". The focus group members expressed that they felt heard by their Canadian partners and were comfortable asking questions and happy to answer questions. One focus group participant said: "*we feel confident to ask questions*" and "*when we sit down to discuss, they ask questions and we ask questions*". Another Tanzanian participant added that they felt comfortable communicating their needs and providing feedback. The Tanzanian key informant agreed, they described that exchanges among project leaders were honest and they are able to "*say what we need from our partners*."

Communication is more difficult, however, when the participants are relying on an online connection. Canadian key informants describe this as being a great challenge as "*[they] are across the world…like kitty corner across the world. And except for the odd, you know, WhatsApp with [the Clinical Lead] and a bit of emailing, it's very difficult to maintain contact*."

The Tanzanian key informant also described their online communication as intermittent. They said it was difficult to maintain communication when the clinic was extra busy. However, they did not feel disconnected from their partners despite physical distance and they added that: "*[the Canadians] are good at following up and checking in*."

Overall, the data shows that despite the difficulties posed by language barriers and physical distance, communication between the Canadian and Tanzanian partners was possible. The open, honest nature of the communication strengthened their connection and helped them overcome communication challenges.

4.2.4 Decision Making and Delegation

Each of the collaborators has distinct roles in the shared-decision making process. The role of the Canadian partners was to identify gaps in the clinic system and guide best practice based on their professional experience. They were in charge of the financial support so their role involved laying out the limits of the budget available. The key informants agreed that the Tanzanian Clinical Lead had a crucial role in deciding how that budget would be used, for example, they drove the decision to allocate funds to faith-based aspects of follow-up care. Other members of the Tanzanian team informed the budgeting process. A Canadian key informant provided an example:

> "*We were going to expand and set up a second room fully equipped with cryo and exam tables. That was a discussion with more individuals. With input from [clinicians] that were involved in the screening process*."

Participants recall giving input on the equipment priorities, for example a cryotherapy machine, and input on how they would best be supported by the budget. The cryotherapy machine was a point of pride for many participants in the focus group. One Tanzanian focus group member explained the equipment upgrade supported them to help more patients. They said:

"*I'm very grateful for [the equipment upgrade] because at the beginning we did not have the instrumentation required to do cryotherapy. The doctors from Canada came and they were able to bring us the machines to do so. They also brought us a lot of education and the knowledge on how to to perform that cryotherapy*"

and

"*I feel like I have helped a lot of women because a lot of them who came and they got they got the early onset symptoms of cervical cancer, I was able to do cryotherapy on them*"

Other focus group members added that they contributed to budgeting decisions by suggesting some funds be allocated to patient transport to enable access to cervical cancer testing and care for community members with limited resources.

A Canadian key informant described being impressed with how effectively decisions were made and action was taken by the Tanzanian team. The participant provided the example of when the TRRH team decided they "*needed the hospital driver to take the biopsies down every two weeks and have them come back and pick up the other results*".

The Canadian participant recalls already at their next visits they noticed "*sure enough, that is exactly what was happening*." The key informant also recalled the time the TRRH team came up with a way to accommodate for increased cervical screening and implement the idea of opportunistic screening. A Canadian key informant says the TRRH team was enthusiastic about their idea and: "*then next year we came back and that's what they're doing*".

The participant also described collective decisions about the design of clinical systems. They were informed by national guidelines and Canadian collaborator's suggestions, but it was ultimately the Tanzanian Clinical Lead and their team who determined the important elements of the system. A Canadian participant described the Tanzanian Clinical Lead as being "*very good at telling us their priorities"*. They recalled the process by which they designed care path algorithms to support the provision of follow-up care after cervical screening:

"*[The Tanzanian Clinical Lead] came to me and said ' we need algorithms. That's what we need. That's what we use'. So, I remember spending hours looking through the biopsy reports*."

They described immersing themselves in the record keeping system and sitting down with the TRRH team of clinicians to create a care path flow chart that would fit the system within the clinic. They describe a brainstorming session with logbooks and sticky notes. The Canadian key informant said they "*developed the algorithms in conjunction with [the TRRH team]*" and looked to Tanazians for advice to guide the creation of the care 'algorithm' chart that would hang on the clinic wall and support clinicians in navigating the best options for patient follow-up.

All participants had distinct roles in decision-making processes and agreed that the sharing of responsibilities and collective planning sessions made them more successful as a team. They brought to the table their diverse experience and engaged in negotiation. The findings show this approach to planning and decision-making was a key factor in strengthening the connection between clinicians.

4.2.5 Consistency and Longevity

The theme of consistency and longevity emerged as a factor in the strength of their relationship. Many participants referenced time as being important in the building of partnerships. A Canadian key informant shared the insight that:

"*The longer you stay ...The more impact you can have, no matter what your relationship is. It is the time there, because it helps you understand better. You develop relationships, you make friendships*"

A focus group member mirrored this sentiment and added:

"*This collaboration has been there for more than 12 years actually because it started in 2008. So the patients are very comfortable with these doctors and they just see them as* *normal people and they're very happy to come and interact with them*" and "*this partnership is great because they are continuous in their offering of support*"

Both parties also highlighted the importance of follow-up and consistent positive experiences in maintaining these relationships. Members of the focus group also mentioned that some other international partnerships were less sustainable because they were much more short lived. Participants recalled an interaction with another international researcher where their experience was short-lived and much less positive.

Follow-up is a concept they all used in their provision of care for clients, but they also made the connection that the notion of follow-up and continuity played an important role in their long-term partnerships. Canadian and Tanzanian participants alike referenced the fact the connection strengthened over time and that they have a history of shared experiences.

4.3 Clinician's Connection To Community

The participants highlighted the importance of clinicians connecting with the local community. Tanzanian and Canadian participants felt that connection to their patients and the women of Tanga was essential in designing and implementing a cervical cancer prevention system that would function as a long-term, sustainable solution for the local community.

In the focus group, members discussed loving their work and feeling inspired "*to help our own citizens, our home, our own people*". One participant spoke about their connection to their patients and their community:"*we understand their struggles and we care for them*".

This ability to provide cervical screening and follow-up care for their community was an important theme for many participants. One Tanzanian participant reflected: "*We know that ailments such as [cervical cancer] can come to us or any woman in our families. It just comforts us to know how to treat these people".*

Each of the Tanzanian focus group participants offered stories of patients they had especially connected with. They expressed the difficulty of counselling patients from their community through terminal cancer and the joy of seeing a patient through treatment. One participant shared:

"*What I really like or what gives me so much joy is seeing patients at home who now have hope and are feeling better. They're able to carry on with their day-to-day activities that* *they were not able to do before. I'm very proud of the fact that I see that I'm changing people's lives*."

Tanzanian participants noted that their experiences became more positive when they started working with the Canadians in a cervical screening capacity as opposed to solely late-stage palliative cases.The focus group participants explained that, in their roles as care providers, it was heartening to feel they were able to help and heal their community. A key informant also expressed that seeing the numbers of women in the community that have been screened and treated was "*profoundly positive*".

The local clinicians have the strongest connection to their community; they engage with patients in many different capacities including screening, home visits, cervical cancer education. They are also keenly aware of the local perception of cervical cancer and their collaborative project, as well as the sociocultural factors that impact the success of their initiative with the Canadian partners.

Clinicians who connect with their community and understand their struggles can provide better care and make a positive impact on people's lives. The efforts of both Canadian and Tanzanian clinicians to connect with the local community was important to their success.

4.3.1 Home visits

Participants described the clinician's connection to the community through home visits as an effective approach. The Tanzanian key informant highlighted the Canadians' ability to integrate themselves well into the needs of the community during home visits and learn about issues that affect Tanzanians. Home visits were more relevant in their provision of palliative care, but still had an important impact on the level of connection they experience with the community of patients.

A focus group participant describes it as "*commendable*" that "*the Canadians have integrated themselves into the needs of the community. When we go to see the Tanzanians, some of the women in their homes, the Canadians are able to integrate with them easily and well*".

Other focus group participants agreed and said that they too felt home visits help them better integrate with the community and understand the needs of their patients. During home visits, clinicians met patients in their own context. One Tanzanian participant said that on these visits they provided "*hope*" and "*encouragement*" for women who have been diagnosed with cervical cancer. Another focus group participant explained:

“*We usually go to their homes and we'll talk, we'll talk with them. We'll try and give them hope that having a diagnosis for cervical cancer is not the end of the world. And we try to encourage them. For them to live positively and even to manage their pain.*”

A third focus group participant added: “*We see that a big number of women are now coming for cervical cancer screening. And even the ones that have got the cancer and get to the end stages, we do palliative care for them in their homes. We go and visit them in their homes. We know their challenges, and then we're able to advise.*”

The Tanzanian focus group participants agreed that their efforts to visit patients in their homes, also in a palliative capacity, contributed to greater connection between them and the local community, inspired them to continue their hard work in care provision, and informed a locally integrated care approach.

4.3.2 Patient Education

Tanzanian clinicians also connect with their patients in Tanga through community education about cervical cancer prevention. The focus group participants recognized that educating patients and encouraging them to engage in cervical screening was both a positive and negative experience. They had noticed recent change in community engagement with more women having started to understand the importance of cervical cancer screening, but they also had to work against misinformation and community’s misconceptions. One participant shared:

“*A challenge that we used to face is that before women were engulfed in fear because of myths that was spreading around in the community about how painful it is to have the cervical cancer screening.* ”

Another added:

“*One of the challenges that we receive is that many women are very slow to heed the education that we give to them, or they're slow to respond to what we are telling them, so most of them will come up with a lot of excuses and sometimes lies about why they won't come for the cervical cancer screening*”

Their colleagues echoed this sentiment, saying that patient education was a difficult part of their job. However, over the course of their collaboration with the Canadians, they have noticed a positive change:

"*In my experience at first, I saw that a lot of women were not coming out to have cervical cancer screening. But as time went by and with all the efforts that we've put in educating women ... now we see more and more women coming out for the cervical cancer screening*"

Other participants agreed and added that the aforementioned challenge posed by patients being '*engulfed by fear*' has become more manageable and because of their education efforts, they are "*no longer facing that challenge on a large scale*".

Patient education is a large part of the Tanzanian clinician's work experience. For some it is the most challenging part of their everyday work in the cervical cancer clinic. For others, it is the best part of their day:

"*What I love the most is giving women education and to encourage them. I educate them about the cervical cancer screening as well as motivate them to take part in it*" and "*what makes me very proud is when I see women coming to do the cervical cancer screening through the education that we provide them*."

The Canadian key informants also noted the impact of community education and other sociocultural factors on their efforts to implement sustainable screening solutions in the community. Community education and patient counselling provided a mixed experience for participants. Tanzanian participants were frustrated with the misinformation that influenced their patients and made their work at the clinic more difficult. Some noticed the gradual change in the community's understanding of the importance of cervical cancer screening. Overall, the participants noted the importance of this aspect of their connection to their community and its influence on the success of their cervical screening project.

4.3.3 Sociocultural Factors

Participants noted that sociocultural factors impacted the way in which the community interacted with screening services and follow up. Key informants and focus group members alike mentioned that family plays a large role in health care decision-making. One Canadian key informant pointed out that men in the community generally had less of a comprehensive understanding of cervical cancer than women. The focus group participants noted that many of the patients would return to their families after cervical screening and may never return for follow-up because the decision-makers in their families likely decided that cancer care would not be necessary. One Tanzanian participant explained:

> "*One of the most challenging things that I've encountered is that sometimes when you find a woman has signs of cancer and they need to have a biopsy done and you tell them that they need to get the biopsy, then they'll tell you they need to go and discuss with their family first and then they'll go and get alternative treatment*"

This socio-cultural barrier to care and adherence was recognized by Canadian and Tanzanian collaborators alike. Economic factors were also a frequently mentioned barrier. Participants understood that the prevalence of poverty in their community greatly impacted access to care. One focus group participant explained:

> "*Another challenge is a lot of women are not financially able. So even to get that money to do the biopsy, they will often tell you: 'let me first go and discuss with my family before I can commit to it*'"

Tanzanian participants reflected that this posed challenges in their everyday work. They found it difficult to help patients navigate the cost of services and to find ways to accommodate the patient's financial needs in the project budget. The socioeconomic needs of the community informed some of the project planning, budgeting, and the nature of the Canadian's sponsorship. Focus group participants explained that the funding from the Canadian sponsors was helpful in removing barriers to care posed by patient's financial need. One Tanzanian participant explained:

> *"We see the women who can afford [the diagnostic tests]. They will pay that. But for the women who can't afford, then we would go and use the funding that is provided by our doctors from Canada who have set aside some money for sponsorship. That is one of the greatest benefits that we have seen in right now."*

There were some sociocultural factors that did not pose the barriers anticipated. For example, faith and spirituality are important aspects of local customs. However, one Canadian key informant observed that Tanzania is, in fact, a leader in terms of cooperation between Christian and Islamic faith. Community members seemed content to have their cervix screened by a clinician of another faith background. Key informants also mentioned the importance of faith as being a notable difference between their professional experience in a Canadian context and the Tanzanian. A Canadian key informant recalls faith being one of the priorities that the Tanzanian Clinical Lead made clear in their budget and planning meetings. The Tanzanian key informant spoke to the impact of culture on project planning:

"*We have not used the social culture of Canada. We have used the social culture of Tanzania to be able to integrate the to set up the initiative. And that is why this initiative has been highly successful here in Tanzania*."

All participants recognized the occasional difficulties that arose because of the cultural divide between Canadian collaborators and the local community. Canadian key informants agreed that it can be "*intense being in a different culture*". However, they also agreed that they found intentional ways to acknowledge their differences and navigated their differences with cultural safety in mind.

Tanzanian clinicians were key liaisons who taught the Canadians about local norms and traditions. One focus group participant describes enjoying teaching their Canadian partners "*about our traditions, about our culture and our beliefs, the all about Tanzanian people ... and how we live together as a community, and how we treat each other*".

The Canadian key informants recognized their co-collaborators as integral in the development of a relationship with the local community and the development of a cervical screening project that fit within the Tangan context. Focus group participants also spoke of their contribution to strengthening these connections and to using their cultural expertise to "*integrate the knowledge from [the Canadians]*" in a way that "*serves our community best*".

Overall, the participants made it clear that sociocultural factors influence the connection between the community and care providers, but also between clinicians themselves. They recognized the differences between Tanzanian and Canadian customs, and recognized the important role of the TRRH Team in helping the Canadians integrate into the regional context and helping leaders make a plan that fit their cultural customs. To round out the conversation about sociocultural factors, one of the focus group participants shared that:

"*The collaboration between the Canadian doctors and us here at this hospital is very unique. When these [Canadian] doctors come here, we work together despite our different skin colours…And it doesn't matter that we come from different places. We all work together in collaboration.*"

4.4 Connection To Local Clinical Structures

Participants recognized the influence of family, finances and faith on the health outcomes of their patients. They spoke to the interconnected nature of, not only these socially determined factors, but also the interconnection of physical conditions. Some focus group participants referred to the idea of 'holistic care' when speaking about how they conceptualised looking at patients as a whole person, rather than looking at purely their cancer diagnosis. One focus group participant noted:

"*This clinic of ours is very unique because we end up giving a holistic care approach, and that's the way it's supposed to be anyway. We not only give the medical aspect, we give support, psychological and spiritual support, and even help financially and economically in the family set up as it is supposed to be.*"

The participants highlighted the importance of these connections, both in individualising patient care but also in the design of their collaborative project. Canadian and Tanzanian key informants explained that they embedded their cervical screening project within an HIV clinic. One Canadian key informant expressed "*I think embedding it in an HIV clinic is, first and foremost, very strategic. The most at risk women are the women who are HIV positive*." They noted that this high level of integration from the outset was "*important to their success*". Not only because it enables an immediate connection to the local women with HIV, but also because it connects them to existing local care systems.

Participants reflected on other times they have interacted with international partners that had set up independent projects and only made for more fragmented and confusing care paths.

One Canadian key informant said it was an "*absolute dogma*" for them to "*work that way, within the system*". The other key informants agreed with this sentiment and reinforced the idea that they have always been intentional about collaborating with clinicians in their existing roles and working to support systems that exist as opposed to arriving with their own independent approach.

The Canadian key informant said it was important to find "*someone who is positioned to and receptive to working with you*" and in their experience it they have focused on capacity building "*within the system that's already there*" despite "*the temptation [international partners experience] too often and to think it would be so much easier to set up something separate*".

They also described the Tanzanian Clinical Lead as a "*figurehead*" and "*a powerhouse*" whose strong leadership skills, in addition to their positioning within the local system, were vital to the success of the collaborative project.

Participants believed working within the existing local structures was an important factor in the long-term sustainability of their efforts. The Tanzanian key informant added that having the cervical screening within the HIV clinic did in fact make their life as an organiser easier:

"*I don't have a problem balancing the HIV Projects and Cervical Screening and Palliative Care because it is all so connected. And, having it all connected makes it even easier with sending patients on for follow up. It is all one system and that makes for better teamwork between the projects and easier for me to coordinate*."

The Canadian key informants recognized that positioning the additional tasks of cervical screening within a clinic that already exists places additional '*asks*' on the TRRH clinical team. However, the focus group participants and Tanzanian key informant said "*it works well*" and that they have found a way to divide HIV, palliative, and cervical screening tasks between different clinical days.

The key informants did identify one key challenge with having their unique collaboration positioned within the TRRH hospital. Canadian and Tanzanian key informants describe a difficulty when other clinicians who were not part of their project became sceptical about the funds and felt some level of unfairness. The Tanzanian key informant also said the greatest challenge they have encountered in the whole course of their collaboration occurred when someone within the TRRH hospital, but outside of their project budget, misused funds that were intended for cervical screening service provision. The key informant recalled the feeling of "*stress and deep concern*" regarding the misunderstanding.

Otherwise, the participants said the integrated clinical system created a positive collaborative environment for Canadian and Tanzanian clinicians alike. The focus group participants discussed being pleased and proud to work at that clinic, especially because they had international partners. One focus group member reflected that their partnership has meant that there is a focus on mentorship, learning and even opportunities to engage with research, which they regarded as a highly positive factor of cross-cultural collaboration.

The key informants agreed with these positive sentiments and added that the clinical environment was keen and efficient. The Canadian key informants described the clinic and systems to be flexible and rapid to make change. They also noticed that timelines differed between the Canadian and Tanzanian context and that it took more time to make progress in the Tangan setting.

Overall, the strategic positioning of the cervical screening project was seen to contribute to the success and sustainability of the initiative. Further, the interconnected nature of the project within the local clinical system fostered a manageable and educational work environment for all participants.

4.5 Collective goal

The participants reflected that one main factor in their strong, sustainable collaboration was the notion of a collective goal. The Tanzanian key informant reflected that despite the influence of factors that challenged their connection, the clinicians were united by their shared goal. They said "*they always understand that everything that happens is in pursuit to improve the health care and improve the lives of the women here*" and "*we have a shared understanding about what we want to do and what we can do*."

The other key informants and focus group participants agreed that these clear project aims motivated their collective action. Some participants mentioned being "*motivated*", "*inspired*", and "*encouraged*" by the idea that they were a team of individuals all making an effort to address the burden of cervical cancer in Tanga.

All the participants also had in common, their experience as care providers. Across the board, the participants referred to their "*ability to provide care*". They spoke of barriers and frustrations that stood between them and being "*able to provide care*".

For example, in the focus group there was discussion of limited resources and limited equipment as being frustrating because it impeded their "*ability to provide care*". They also spoke about feeling pleased and empowered after cervical screening skills workshops because to them the new skills meant "*now we are able to help the women in our community*". They also spoke about their pride in being "*able to counsel*" their patients. Further, the participant group reacted to new technologies and upgraded equipment in their clinic with the narrative remaining focused on the fact that upgraded equipment meant they were "*able to diagnose*" and "*able to treat*" their patients.

Although the Canadian key informants play a more supporting and mentoring role in Tanga, they also have extensive care provision experience in their own communities. They both told stories about instances when resources were tight, and they were frustrated over not "*being able*" to provide the care they knew their patients needed.

One Canadian key informant referred to recent problems and family doctor shortages in Canada and reflected that one of the most difficult aspects of their experience as a physician was having resources that were far too limited to enable them to ensure their patients received the follow-up care they required.

Canadian key informants also spoke to the ethical obligation they have as clinicians. One recalls "*feeling like ethically wobbly"* at times as they realised "*my gosh, all these women have been diagnosed. We need to make sure that they're getting treatment*".

Though it is not an explicitly outlined aim of the cervical screening project objectives, the ability to provide appropriate care and adequate follow up was a goal for clinicians. The qualitative findings suggest that the clinicians engaged in the partnership, mentorship and sponsorship with the common goal to ensure Tanzanian clinicians had the resources and training they needed to "*be able to*" provide quality care for the women in Tanga region.

The focus group's conversation about their ability to provide care, continued into another common theme and collective goal. One Tanzanian participant spoke about hoping to update their equipment so that "*[we would] be able to give services that are up to date or modern services ... And, so that we can match up our counterparts or our peers internationally in the methods they are using to do cervical cancer screening*."

This reference to international peers and counterparts sparked a conversation that all participants could relate to. Common across all clinicians, was the sense of feeling connected to the global effort to decrease the burden of cervical cancer. They felt that they were working towards, not only the goal of decreasing cancer in their own region, but also in accordance with the international goals outlined by WHO.

Several focus group participants said: "*I feel that I'm part of the international effort to address cervical cancer*" and added that the records they kept could "*contribute to global records and statistics*". Other focus group members mentioned the national guidelines and international guidelines they follow which serve as reminders that they are a part of "*something bigger*" and in this conversation, many participants referenced their collaboration with the Canadians.

One Canadian key informant explained that their project records had great potential in informing a national strategy. They said "*we may not be able to solve cancer of the cervix in Tanga*" recognizing the scale of their initiative, but continued that their records held important information about*"how much staffing, how much money, how many biopsies, how many positive tests*" and how many women are being screened by their team. They realised that "*this data is really rare*" and that their work could help quantify the true burden of cervical cancer and contribute to a national registry in Tanzania.

A Canadian key informant also spoke to their connection to the national goals:

"*So all this information we provide is important to the government because maybe now they will be able to increase their efforts to address cervical cancer*."

Overall, the participants had the collective project goal to fight cervical cancer in the Tanga region. Other goals they shared as care providers included being able to ensure the women in Tanga have access to quality cervical screening and the necessary follow up. Finally, the participants felt that they were part of an international effort and understood they were working towards the national and international goals to address the burden of cervical cancer.

4.6 Financial Flow

Key informants and members of the focus group agreed that the sponsorship element of their relationship was very important. All participants were clear that funds and additional resources came from the Canadian sponsors.

The only mention of discomfort or stress regarding funds from the Tanzanian perspective, was the above mentioned incident when the key informant described a TRRH staff member, not otherwise involved in the cervical screening project, used funds from the cervical screening project budget. The Tanzanian key informant explained that this misunderstanding regarding finances caused stress for them because they work hard to maintain meticulous records of how funds are used and is "*very clear, trustworthy and transparent*" regarding money. Tanzanian focus group participants also made a point of connecting money to trust and one participant expressed that they were "*proud to say they always use the money properly*".

In the focus group, some participants mentioned equipment they would update and technology they would like to invest in if they had access to more funds. But, they also appreciated that the Canadian's funds had limits. To this, a Canadian key informant contributed: "*our budget has limits. We are a small initiative working against a big problem*."

The budgeting and prioritising of funds occurred as a shared decision making process with key informants around a table and sometimes additional clinicians who can provide input from their hands-on experience in the screening clinic.

Tanzanian participants expressed that they were pleased with this process. Also they recognized that their financial documents could be informative for other clinics or governments looking to implement similar cervical screening initiatives.

Much like other areas of planning, teaching, and provision of care, the financial planning process kept in mind the notion of 'holistic care'. The Canadian and Tanzanian clinicians decided to make funds available for enabling access to care through patient transport, for supporting home care, and for supporting spiritual aspects of follow up care.

With reference to the funding model, one of the focus group participants said:

> "*What makes the collaboration between the Canadian doctors and the team is that we have not only been able to provide medical health care, but our initiative has also gone ahead to help in solving some of the challenges that are faced in the community. So this collaboration really looks at the medical aspect of the initiative as well as the community needs the community*"

A Canadian key informant made it clear they are "*careful about the role of money*" and focused on "*paying for equipment not people's positions*". They saw this approach as more sustainable in the long term. They recognized that being intentional and thoughtful about their funding approach made it clear to members of TRRH staff and leadership that the clinicians involved in the cervical screening project were not receiving "*special money*".

Overall, the participants recognized that finances impacted their relationship. The Tanzanian focus group participants concluded that the sponsorship is a "*great benefit*" and "*a* *great support*". Canadian key informants trusted the Tanzanian team with regards to use of funds and informing a well balanced budget.

4.7 Progress & Success

Participants had many ways to evaluate the progress and success of their collaborative efforts. They referred to achieving their collective goals by providing screening services for women in the Tanga region. They also frequently referred to feeling that they were successful because they were "*helping*" their community. They also noted progress by making comparisons between how things were before the partnership and how things were now.

'*Noticing impact*' and '*noticing change*' were frequent codes in both focus group and key informant discussions. Many participants from both groups also referred to the records they had kept and referred to the patient logbooks as solid evidence of their progress and success. The theme of pride also emerged as participants reflected on how far they had come and all the hard work they have put towards reaching their goals. Canadian and Tanzanian participants alike expressed that their work was far from done, and that there was a long road ahead before Tanga was cleared of cervical cancer. However, they made a point of recognizing the positive impact of their work so far and how it felt to change so many lives through preventative screening.

Participants discuss the success and progress of their project in four main ways. They spoke about their work as 'helping', they spoke about noticeable changes in the behaviour of women in the community, they spoke about documentation that recorded the number of women reached, and they spoke about the aspects of their project that made them feel proud.

4.7.1 Helping

The Tanzanian focus group participants saw their provision of cervical screening, education, and follow up care as a great help to their community. In the focus group, one participant shared:

> "*I feel that I have changed the women of Tanga because many of the women in Tanga who have come for the screening and ended up receiving treatment, their health has become better and we have helped to improve the quality of their life after they get well*"

Their sentiments were echoed by all members of the focus group, who then contributed to the discussion by mentioning ways they felt they had helped women in their community. They felt that their work "*made [their patient's] lives better*". And they said that they are thrilled because their patients "*come to say thank you because we do a good job in helping*."

The term 'helping' was also used in reference to the Canadian-Tanzanian relationship. Some of the focus group participants spoke to the ways in which their collaboration was successful when they "*helped*" each other.

4.7.2 Noticing Positive Impact

Many participants compared their experience before the cervical screening initiative to current day. As they reflected on all the change, they expressed how much impact their collaborative work truly had had. They also noted that noticing all this positive progress was a factor that encouraged the continuation of their collaboration. One focus group participant noted:

"*I feel that I'm making a positive difference, a difference in the lives of my patients, because the people who come and we're able to detect the cancer when it's still in the first stage, they will come back to thank me because depending on the type of treatment they receive and they become better, they become healed*."

They contrasted this experience to how it felt when they were just working in palliative care and not able to detect cancer in the first stage. This was a point of agreement throughout the focus group. Another participant added:

"*I can see quite a number of them have fully recovered, are fully healed from cancer. And even now we keep in touch with them by doing some follow up*."

Tanzanian participants also noticed that the numbers of women they had healed had inspired change in the community. They noticed more Tangan women were understanding that screening visits was not just a death sentence, but could mean a continued healthy happy life with appropriate care and follow up. One focus group participant said:

"*According to my experience, we have helped many women and they are now taking the initiative to come for the cervical cancer screening because they can see the benefits of testing. Instead of staying at home without the testing*"

Others agreed that it was heartening to see "*that many women now have the knowledge and they have accepted to come in for the screening*".

They noted that these positive interactions inspired them and made their work at the clinic very gratifying. Some shared memories of celebrating when patients were cancer-free and always being especially pleased to catch cervical cancer early so that they "*could be healed and treated*".

In the focus group, there was frequent reference to the qualitative feeling of contribution and progress than a quantitative reference to the number of women they had seen. Some participants also referred to the logbooks filled up with names and the sense that their project was reaching lots and lots of women.

They also noted positive change in the way the collaboration and their clinic was run. One focus group participant stated:

"*I can say that there has been a positive improvement because there is now coordination from the time a person registers until when they come to us here at the clinic. …That makes it easier.*"

Another participant explained the positive impact an equipment update had on their work life. They said they used to struggle with having to turn away patients when they didn't have the means to help them, but now…:

"*What motivates me is that we have the necessary equipment to conduct the tests, the screening on the tests and the treatment for the patient. There's not a single day that a patient has come. And I've said that I didn't have enough equipment to help them*".

4.7.3 Reviewing Records

Key informants also felt that their team had made great progress towards their goals. The Canadian key informants are more removed from direct patient care, so they spoke to their experience paging through screening logbooks and biopsy legers and being struck by the numbers of women benefiting from their services. One key informant said they were emotionally moved as they reviewed '*reams and reams*' of patient names. They said "*the only worrisome part is that we worry that we may be missing something because the data is so profoundly positive*."

The Canadian key informants reflected on the size of the issue they were up against and expressed that they had moments when they were home in Canada when they wondered if the initiative was still going strong and if progress was being sustained. But, they said they had a consistently positive experience when they returned to Tanga and reviewed the documents that showed the clinic's progress. Participants also realised that solving grand global problems, such as cervical cancer, requires consistent, sustained progress and does not have any quick fix or magical solution. They celebrated milestones and used record books to help them recognize that there was progress being made. One of the Canadian key informants referred to the feeling of making progress; "*It is essential to feel that the work that we were doing was valuable, and that the [collaborative project] is actually making things move forward*."

4.7.4 Pride

Participants were proud of their progress and proud of their work. One Tanzanian participant explained "*This is just what I love from my heart. And I'm very proud that I get to do this work*." and another focus group participant added, "*What makes me very proud is that when I see women coming to do the cervical cancer screening through the education that we provide them*." The discussion continued and other members of the focus group listed aspects of their work that make them proud.

In addition to the feelings of pride the participants expressed in connection to seeing women healed and reviewing long lists of patient's names, they were proud of their partnership. Some participants used the term '*unique*' and '*special*' and said they were proud to work with their colleagues from Canada.

Key informants also mentioned palpable moments of pride. For example, a Canadian key informant recalls swelling with pride when there was a ribbon cutting ceremony for the clinic on television. And, the Tanzanian key informant added that they were "*very proud of [their] team and the work they do*".

4.8 Future & Follow Up

After the discussion about all of the change they had experienced and their collaborative journey that has brought them to the clinic they have today, the participants looked to the future. Key informants reflected that the future may bring change and a shift in their involvement. However, they have always been focused on follow up and continuity, both in patient care but also in project planning. They said their efforts have been focused on creating a project that can be continued and even has the potential to grow. They hope to find additional collaborators who can continue to support relationships. Individuals and their personal connections have been at the heart of their strong, successful collaboration.

Participants agree that there will be skillful navigation required in the next phases of planning. They have intentionally set up systems of documentation within the clinic that can contribute to future knowledge about quantitative burden of cervical cancer in the tanga region and can contribute to a national cancer registry.

Key informants and focus group participants also mentioned areas for potential growth as in their next steps. One Canadian referred to the care paths they designed and the potential for new documentation systems to enable smoother tracking and follow-up of patients: "*I feel like there's this real opportunity to be pioneering this connection*".

They acknowledge the strong foundations that their project and collaboration have built and suggested that it could be a jumping off point for a scaled-up screening system. Focus group participants also spoke to the information they have collected in their records books and that they were excited to be engaged in research that could contribute to the scaling up of screening services in Tanga.

Key informants and focus group participants spoke about the potential of electronic documentation and specific equipment that would help them care for patients who are currently being missed.

There was also a resounding sense that their screening and collaborative work could inform other clinicians looking to make strong, sustainable contributions in cervical cancer prevention. They emphasised the human aspects of care and respect and the openness of their collaborative partners. Many participants referred to experience with other international collaborators and much preferred the "*relationship focused*" way they conducted work with the Canadians. One Tanzanian participant reflected on the relationship:

"*I would say that the collaboration is very unique ... because of the support in the collaboration. Whenever we have any questions and we ask them, they answer us correctly. They answer our questions and they don't even ... It doesn't matter whether you're a senior person or a junior person, they will answer all of us correctly and equally*."

Another agreed with this sentiment, and added a suggestion that the community-based model of their work also be used to inform other's work:

"*I would recommend that this initiative is even copied and implemented in other areas so that even in other areas patients can be assisted in a community aspect, the financial aspect, where they're not able to afford things like transport or personal care, things that they need. So these initiatives would be beneficial even in other areas*."

Overall, the participants in this study discussed their experiences of being unique in comparison to other projects. They spoke about their collaboration with Canadian doctors, which is characterised by mutual respect, support, and an emphasis on community needs. They felt their enduring relationship was rare in a world where many projects are tech-focused, quick fixes with short timelines. They all looked to the future with ideas for growth and improvement, and hoped that their progress could contribute to a comprehensive cervical screening system and cancer registry in Tanzania.

Section 5. Discussion

The results showed that clinicians working to implement cervical screening and follow up care had gained a wealth of experience in their collaborative work. Their reflections outlined that, to a large extent, trust and the nature of their relationship has had an impact on the strength and sustainability of their partnership. They outlined factors they believe to be supportive and factors they believe to be challenging in their cross-cultural collaboration. Many of their reflections resonate with studies and bodies of work from other cross-cultural, HIC-LMIC and international collaborative contexts.

5.1 The Experience of Clinicians

This study found Canadian and Tanzanian clinician's had a wide range of experiences in their international collaborative work implementing cervical screening and follow-up care in Tanga. Participants focused on the positive elements of their experience, mentioning their favourite moments of interaction with their partners including in person visits, learning from each other, and reflecting on collective progress. The findings show that, in their experience, participants developed both personally and professionally as a result of their cross-cultural collaboration. However, many of the positive elements of their experience were balanced by challenges.

Tanzanian participants mentioned that the Canadian's site visits made them feel connected to and supported by their collaborators. But, on balance they felt more disconnected and distant from the collaboration when their partners were at home in Canada. The Canadian key informants echoed this sentiment. They shared reflections about the joys of visiting Tanga and being reunited with their team balanced by the frustrations of returning home and feeling far away.

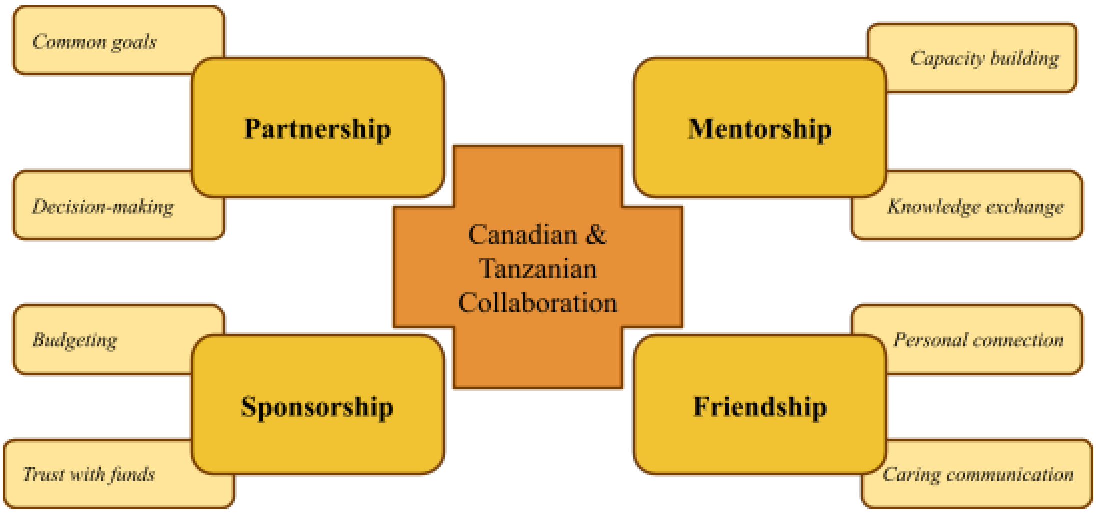
Another example of a learning experience came from project planning and logistics. On one hand, the key informants and focus group participants expressed being pleased with their shared decision-making process, open communication regarding budgeting, and spoke positively about the level of trust between partners. On the other hand, the Tanzanian key informant felt some level of stress while managing a transparent budget and the Canadian key informants said that the trust shared between partners has taken many years to develop.

Overall, participants' insights were informative. They have many years of experience working together in various capacities. The Tanzanian and Canadian clinicians provided reflections on both the positive and negative aspects of their efforts to fight cervical cancer in Tanga. The lived-experience of participants working in a small-scale clinic against a large-scale issue provides a unique glimpse into qualitative measures of global health progress. Further, the Tanzanian and Canadian clinicians made it clear that it was the nature of their relationship and personal connection to each other that was a determining factor in their ability to make progress towards WHO's cervical cancer prevention goals.

5.2 The Nature of Clinician's Relationship

The findings show that the nature of interactions between international partners plays a significant role in supporting the success of the cervical screening project. This study found that participants described their relationship using a variety of terms including partnership, mentorship, and sponsorship. They also made it clear that their connection is firmly rooted in friendship. *Figure 3* illustrates the four dimensions of their relationship:

Figure 3. Four Dimensions of Collaborative Relationship:



This study found that participants attributed various elements of their collective, collaborative experience to the four dimensions of their relationship. The findings show they spoke of shared-decision making and project planning in association with their partnership as professionals. Participants spoke of the flow of resources, budgeting processes and trust surrounding finances in in association with the Canadian's role as project sponsors. The theme of mentorship came up in the findings when participants spoke about capacity building, knowledge exchange and mutual learning. Finally, the findings show participants attributed elements of their collaborative relationship to their personal connection and friendship built over many years.

Work in international health work is often project based and short-term in nature (37)(38). This group of participants made it clear that the long time frame of their relationship allowed for a dynamic evolution of roles within the partnership. They took on various roles and areas of responsibility at various stages of the process. For example, the Canadian's role as mentors was key in initial capacity building and the screening project's genesis. The Tanzanian clinical team's role as local community liaisons in their partnership was especially important in the integration of new clinical techniques in the Tangan context and in the planning of budgets and patient education. They also mentioned that the multi-dimensional nature of their collaboration impacted their success.

Global health best practice guidelines suggest personal relationships are central to success in partnerships (34)(39). Though it is not often the focus of professional partnerships, the affective elements of care and the presence of genuine mutual respect are also known contributors to effective partnerships (38)(40). This would suggest that though there are many professional elements to their relationship, including the mentorship and sponsorship, it is in fact the personal elements of caring, sharing, and friendship that make their collaboration unique (37).

The person-centred element of the participants' relationship was a key theme in the findings. Key informants often referred to the strengths and skills of their partners and suggested that it was the purposeful selection of individuals with genuine interest in their cause and proactive attitude that contributed to their success. It was not simply the collective goal or the clearly urgent need for cervical screening, but also the attitudes of keen and committed individuals.

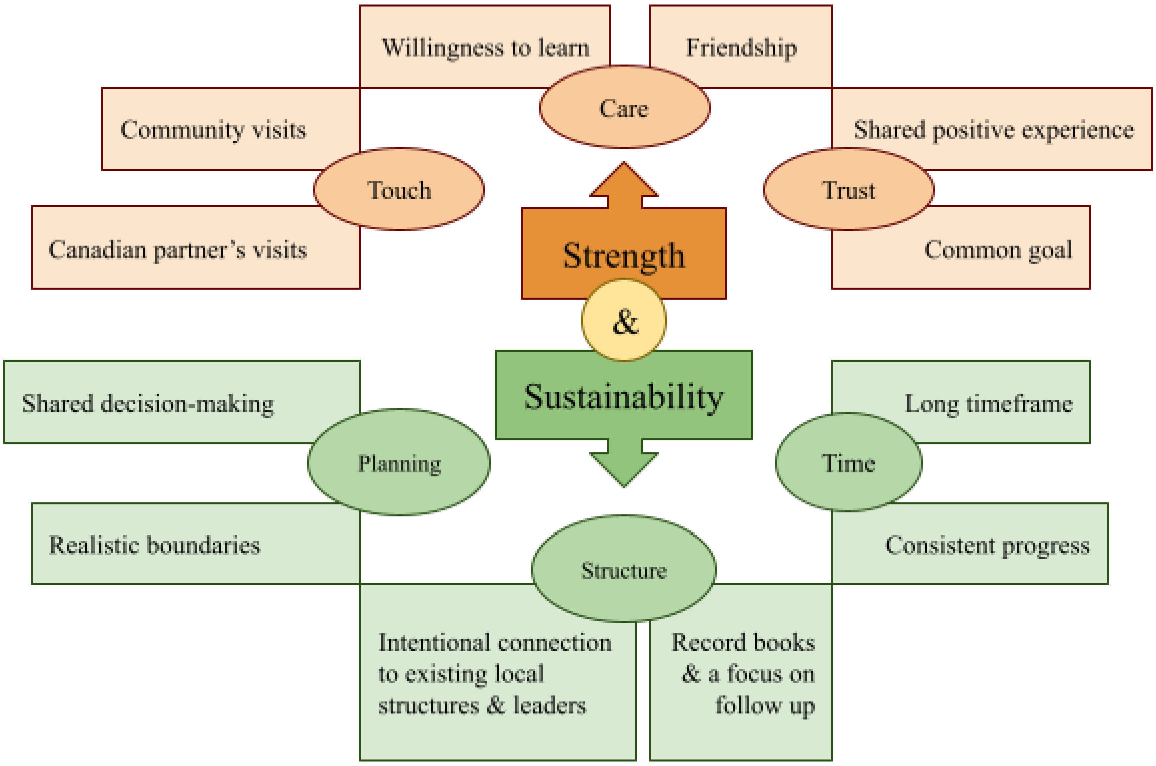
They spoke about the importance of intentional interaction at the genesis stage of their project and explained that the characteristics of the core team of individual leaders were known to them through previous personal experience. Key informants and focus group members alike made reference to their history of working together in a palliative capacity. The study findings suggest that the nature of their collaboration is not purely impacted by their professional roles as sponsors, partners, and mentors, but also by their personal connection built up over many years. The findings also show that their friendship was key in the maintenance of trust, the celebration of their project’s progress, and their enjoyment working together.

Perceived trustworthiness is fostered by integrity, ability, and benevolence, strongly influenced by reputation and earlier experiences (41). Shared experiences and goals bond clinicians together and play a vital role in the creation of genuine trust and respect (41). This study found that their shared experience in palliative care contributed to the initial trust that encouraged their cervical cancer project partnership. Trust, reliability, previous shared experience, and intentional interaction in the start phase of their project was important in building a foundation for a strong, sustainable collaborative relationship.

5.3 Insights for Strong, Sustainable International Collaborations

The reflections of Canadian and Tanzanian participants provide insight about factors that help to create strong and sustainable international collaborations in the context of cervical cancer prevention. *Figure 4* illustrates some key discussion themes that participants found to be influential on the strength and sustainability of their collaboration. Themes of ‘touch’, or in-person visits, care for each other, and trust both personally and professionally were connected to the strength of the collaboration. Themes of intentional planning, a structured approach, and consistent progress over a long time frame were key to the sustainability of their collaborative project.

Figure 4. Contributors to the strength & sustainability of the collaborative project



Collaborations have many forms and the forms of decision-making, communication, and experience of equity greatly influence the success and sustainability of collaborative relationships (41). In this case, the project leaders made intentional efforts to ensure an equitable experience for all involved in their shared decision-making processes. The balanced involvement of Tanzanian and Canadian participants in various aspects of planning was important to the sustainability of their project efforts and the collaboration itself.

The long-term consistency of their shared positive experiences, especially during in-person visits, and the sense that they are working towards a collective goal also contributed to making their connection strong and sustainable (34)(39)(37). Over the past years, the participants had collected a long list of proud moments and positive experiences they had shared. The findings also showed that consistent check-ins on-site and online were important to making participants feel supported and connected. Social research suggests that the nature of a collaboration has a strong influence on the type of trust developed (41). The long-term consistency of their personal connection was also important to the presence of trust and reliability.

The development of strong, sustainable cooperation between countries and cultures is essential to global health progress (10).Standards for cross-cultural collaborations are ever evolving in the fast-changing world (42). Some researchers point out the difficult history of international interactions, and question the ethics of cross-cultural collaboration (18). However, it is also recognized that the cross-cultural elements of some collaborations can be a contributing factor to their success (15)(13). Despite the challenges posed by physical distance, language barriers, and differing world views, cultural diversity within a project team can be positive (15).

The participants in this study recognized that the cross-cultural nature of their collaboration was an integral contributor to their sustained, strong collaborative success. Their work together was a point of pride for many of the focus group participants. Key informants were pleased with the way their diverse background contributed to a dynamic decision-making process.

Over time, partnerships and projects often develop their own internal organisational culture (34)(39). This was the case in the collaboration studied. The participants had, for example, an established internal culture of knowledge exchange. They all made it clear that they learned from each other in a professional mentorship capacity and in a personal development capacity. The reflections of the participants were often presented as ‘lessons learned’. The findings also show that the clinicals all learned from their partners and contributed to teaching their partners. Specifically, the focus group findings showed the Tanzanian clinicians felt they had taught the Canadians a great deal about their local culture and customs. The Canadians agreed and added that they had also learned lessons in flexibility and resilience from their Tanzanian partners.

Resilience can refer to one’s ability to find solutions and work around adversity (43). To a large degree, the whole team of participants and their project is highly resilient. The findings show that participants actively reflected over the scale of the issue they were facing. They understood that they were a small-project and that the burden of cervical cancer in Tanga and in the LMIC world was immense. However, the daunting scale of cervical cancer burden did not stop them from continuing to make consistent and sustainable progress. They made a point of celebrating their collective wins and were reflective about how far they had come. Participants noted positive changes in the clinical environment and noted an increase in their ability to provide care for their community. They also noted positive changes in the behaviour of Tangan women; some members of the Tanzanian team expressed great joy when they realised the decrease in the number of palliative cancer cases and increase in women they had been able to screen and treat. Participants were pleased to note that slowly but surely the women in the community were becoming more engaged in their early detection services and some suggested that community engagement in their cervical screening project was an indicator of progress and predictor of long term sustainability.

Another theme participants connected to their sustained success was flexibility of the program and individuals involved. The theme of flexibility came up in key informant and focus group discussions. Frameworks for international collaboration and cross-cultural research suggest that flexibility is an important factor in maintaining successful partnerships and projects (34)(39). The findings of this study, and supportive external research, suggests that flexibility and adaptability are essential in global health work (34)(39). People and projects must adapt to the many political, financial, and social forces that are susceptible to constant change (44). The landscape of global health is constantly changing and, as we saw in recent years, can be quickly impacted by new disease patterns and health behaviours (44)(21). Flexibility is another factor mentioned by participants and supported by research that contributed to the strength and sustainability of their collaboration and project.

The reflections of Canadian and Tanzanian participants provided insight about factors that supported the strength and sustainability of their collaborative project. They reflected on their consistent progress and success, despite their small scale and budget. Intentional planning, long term consistency, a caring relationship and trust were key to their experience.

5.4 The Role of Trust

The findings show that trust between international partners plays a significant role in supporting the success of the cervical screening project. Trust is a unique social tool, as it is often used in describing positive social connections, but it is rarely fully understood (40)(41). People often speak about trust when they refer to others they believe to be genuine in their motivations and in a professional sense to refer to the perceived reliability of another party based on credentials or previous experience (40)(41).

However, in the context of global health, trust does not merely function in this traditional sense. To a certain extent, trust in global health partnerships is not earned but required from the outset because collaborators come from opposite sides of the world with little mutual experience on which to base a sense of trust (41)(45). Therefore, invitations and personal connections play an important role in establishing genuine (and voluntary) trust from the outset of an international, cross-cultural relationship (45).

In this study, key informants speak to this as they referred to their professional acquaintances and personal friends whose established reputation in the Tangan professional community helped them form genuine connections from the beginning of their work (45). Invitations were extended to the Canadians and were important in the initial phases of the collaborative relationship. Participants also referred to their clear, collective goals to address cervical cancer burden in Tanga as a contributing factor to their ability to trust each other from the outset.

The connection between time and trust was also very established in the findings. Participants frequently referred to how long they had known each other and worked together when they spoke about the sense of trust between them. This may suggest that small-scale, person-centred and long-term nature of an international collaboration is key to the development of true trust. There are many initiatives in the global health world that are problematic and lacking true trust between collaborators because they are focused on quick technical fixes and are not invested in the longevity of relationships (34)(38)(45).

5.5 Challenges in the Collaborative Project

This study found both strengths and limitations to the use of a collaborative approach when addressing the burden of cervical cancer in Tanzania. Participants described both positive elements of their experience and also challenges they faced working in an international collaboration. The findings also showed the recognition of their collective strengths and limitations was essential in building a project that would have lasting impact. Among their strengths were the personal elements of their hard-working team and the ‘make it happen’ attitude within the clinic. Among their limitations were cross-cultural barriers such as language, distance and finite financial resources.

Language barriers pose unique challenges for communication and successful collaboration in global health initiatives (25). Acknowledgement of the partners limited fluency in Swahili and English were made. These limits caused difficulty in teaching and planning stages of the initiative. However, participants found ways to navigate around the barriers of language and said it meant they had to be more intentional in order to maintain clear, open communication. Research suggests that the nature of communication, in cases such as these, can be as important as the methods and languages used for communication

(28,30). This resonates with the findings of the study. Participants from the Tanzanian team expressed that, despite the language barriers, they felt heard and felt that their opinions were heard by Canadian project leaders. The open nature of their communication was a strength that came from navigating the challenges posed by the language-barrier.

The geographical distance between Canada and Tanzania also posed challenges for the participants. In-person interactions are a crucial factor in successful collaboration; this study's findings supported that fact (41). Despite the existence of online communication channels and computer-mediated connection, progress and planning are most successful when done face-to-face (41). Canadian participants expressed feeling frustrated with the disconnection that came from a vast geographical distance. Though Tanzanian participants did not mention feeling unsupported or disconnected when the Canadians were away, they did express feeling pleased when the Canadians returned to check-in.

Another study of international collaboration using online communication channels to connect international partners calls these in-person visits 'moments of touch'(41). Not only do 'moments of touch' contribute to smooth coordination and enable shared decision making, but they also strengthen the personal connections in the partnership(41). Participants reflected that it was these moments of touch in their experience that were the most positive parts of their project work. It was then, when they were physically together that they truly felt connected to each other and to the community of women in Tanga.

Virtual connection is becoming more effective with advancing technology and the recent pandemic forced many international collaborators to shift their work online (42). However, the findings of this study shows that the value of in-person visits is irreplaceable. This becomes a difficult challenge to navigate as geographical distance cannot be fixed, but it has encouraged the collaborative team to make the most of their 'moments of touch'. One Canadian key informant explained that the in-person visits were highly productive from a planning perspective. The challenges of the long-distance relationship created an opportunity for collaborators to become more efficient and intentional with their shared decision-making process.

The findings showed that finite financial resources posed additional challenges for partners. Canadian and Tanzania key informants recognized that the scale of need for cervical screening in Tanga was above and beyond the scale of their project's budget. Tanzanian focus group members expressed wishes of equipment updates and the ability to support more patients, but they also recognised that the budget had limits. Members of the Tanzanian team found it difficult to determine priorities for funding when there were areas that required financial support. The Tanzanian key informant also found it challenging to make the project budget clear to other members of the TRRH hospital. The Canadian key informants mentioned they were very careful and intentional about the allocation of funds so as to avoid such challenges. Despite the benefits of sharing resources and funding global health projects in lower-income settings, clinicians can experience difficulty as they navigate the allocation of funds (13)(1)(24)

There were challenges and difficulties experienced by study participants such as language, distance and navigating a finite budget. In some cases, these challenges created learning opportunities for the team to develop strengths in compensating areas while other challenges create opportunities for growth in the future.

5.6 Relevance of Work for Future of Cervical Cancer Prevention in Tanga

The reflections of Canadian and Tanzanian participants provide insight about factors that help to create strong and sustainable international collaborations in the context of cervical cancer prevention. In this study, participants noted areas in which their project was successful in making progress to address the burden of cervical cancer in Tanga. Participants noticed positive changes in community cervical cancer prevention behaviour and an increase in numbers of women screened and treated for cervical cancer. The participants' impression of progress was greatly informed by their qualitative experience and reflections. Tanzanian and Canadian participants explained that they are also in the process of exploring the quantitative elements of their project’s contribution. Tanzania does not have an established national cervical cancer registry(24). The participants hope that their screening efforts and log books full of patient records could contribute to understanding the true magnitude of cervical cancer cases in Tanga.

The participants' experience working together to design carepaths, patient record books and connections with follow-up care made them realise the need for integrated care systems. Canadian key informants feared that many women were lost to follow-up because of a lack of infrastructure and the lack of a comprehensive patient tracking documentation system. Tanzanian focus group members echoed this sentiment and expressed a need for an electronic record keeping system that supported the follow-up and referral of screened patients. They felt that their efforts would be better supported by a comprehensive national system.

Participants suggested that their project's work could contribute to scale-up efforts and become integrated into a national system in Tanzania. Global health projects that are truly focused on long-term, sustainable solutions are designed with a conclusion phase in mind (34)(39). The conclusion phase should aim at integration with a national system or continued support from in-country sources (46)(39). Participants spoke about the importance of working within existing local structures, such as the HIV clinic at TRRH, and collaborating with existing Clinical Leaders. This study found the high level of connection to local systems was a contributor to the success of the project and the collaboration. Participants indicated that in the future, an electronic documentation system that connects their screening services to follow-up care and national records would be extremely valuable in contributing to Tanzania's national cervical cancer prevention approach. It would also support their efforts by making follow-up easier and by quantifying their progress.

Follow up care is more comprehensive when it is a part of regional and national systems (21)(34)(39). International global health efforts are more successful and sustainable when they work in harmony with local systems as opposed to being entirely independent (46)(47). Participants in this study plan to focus on further integration with emerging national systems in their next steps.

Cervical cancer is highly related to other aspects of women's health, such as HPV and HIV, yet it is often left out of global conversations and national action plans (1)(2). Participants understood these connections to comorbidities and made it clear they have taken intentional steps to integrate their cervical screening project within the HIV clinic at TRRH. This allows them to reach high-risk, HIV patients first. The key informant from Tanzania explained that their integration within the HIV clinic also made coordination of care easier for local clinicians. High-risk patients often required coordinated care for a combination of these ailments (2). In the future, participants hope to have access to an electronic documentation and referral system that can further integrate their cervical screening services with a follow up in a national system.

There are few LMIC countries with data systems and cancer registries with sufficient data to accurately report the burden of cervical cancer in their regions (10). As mentioned above, Tanzania is among those lacking sufficient records and data (10). Regions without cancer registries present an opportunity for innovation and the implementation of new record keeping systems for patient follow up (10). In Tanzania, there have been efforts by various international funders and projects that have attempted to implement cervical screening services in different regions but this fragmented approach could pose some challenges (1).

The lack of a coordinated approach meant Tanga was originally left out of screening and follow-up efforts (7). There is an opportunity for the research and development of a comprehensive, cohesive national system that connects existing cervical screening projects (22). Participants in this study expressed that they believe their project can contribute both qualitative and quantitative information to future work in this area. The collaborative team has intentionally grounded their work in the community's priorities and has involved local Tangan clinicians in budgeting and decision-making. Further, the partners intentionally designed their clinical documentation systems and follow-up flow charts so that they would be able to smoothly integrate with regional cancer registries as they developed (40). This, in addition to their long-term consistent progress and attention to continuity of care, makes their project a potential contributor to nationally integrated cervical screening scale up (22).

It is natural for international collaborations to occur in phases, including origin, development and conclusions (34)(39)(46). Participants had many reflections and hopes for the future stage of their project. Future research is required to determine the best course of action as project leadership changes to accommodate new partners (34)(47). In an ideal world, their cervical screening project could be funded and supported by Tanzania's national health system.

5.7 Strengths and Limitations of this Study

This study explored the experience of Canadian and Tanzanian clinicians and gained insight according to the research aims. There were strengths and limitations to the study. Among the study's strengths: a flexible and iterative design, a reflexive element to analysis, and data collection methods that engaged participants in dynamic discussion. Among the study's limitations: a remote and removed key investigator, a Swahili-English language barrier, and a highly specific sample of participants making generalisability difficult.

The study had a flexible and iterative design. This made it possible to accommodate the priorities and busy schedules of the participants. The research team was open to input and change that incorporated feedback that resulted in shifts to timelines and interview techniques. Embracing the need for adaptability contributed to the quality of this study and contributed to making the research work ethically sound (15)(16). Adaptations and changes to the study's focus themes were an integral part of iterative design. Main themes that emerged in the first stages of participant discussions helped to focus the content of key informant discussion protocol. This made the findings rich and dynamic as it allowed for a connection between the content of the focus group and key interviews. It also allowed for multiple perspectives and insights surrounding themes that the participants found to be important.

The reflexive element of analysis also contributed to the study's focus on themes that were important to participants. Over the course of the study, the Lead Investigator's codebook was revisited and revised as they gained a greater understanding of the participant's perspectives. Further, the reflexive elements of the analysis made the study strong as it acknowledged the influence of culture on lived-experience (35).

The qualitative data collection methods using both focus group and key informant interview methods also contributed to the strength of the study. This approach is particularly well-suited in this context where the researcher seeks to understand perspectives rooted in societies with world views and cultures distinct from their own (27). Further, the data collection methods mirrored the structure of the collaborative team; the TRRH team had a group discussion in Swahili with their Clinical Leader as moderator, the Canadian project leaders were key informants in English, and the Tanzanian project leader was a key informant in English. This meant that participants were in familiar and language settings. Further, focus groups are especially useful in the beginning of a cross-cultural, iterative process as they open the study up to conversation themes that the research team may not have seen from their removed perspective (35). Focus groups are well suited to cross-cultural research as they have the potential to generate themes and discussions that the removed research team could not anticipate or plan (26). The focus group was also hosted in Swahili with a moderator who had existing rapport with participants. This created an environment that was conducive to participants sharing their lived-experiences and engaging with the discussion topics (30)(31). The key informant interviews were valuable in the second stage of data collection as the semi-structured guides allowed the research team to address topics and themes that emerged in the focus group (27)(35).

The mixed qualitative data collection did also pose some methodological challenges. The involvement of a focus group moderator and translator had impacted the findings and distanced the Lead Investigator from the data (48). The Lead Investigator became, to a certain extent, removed from the data by both language and distance much like the Canadian participants felt removed from some aspects of their collaborative work. This degree of removal from the primary data collection meant the Lead Investigator and project coordinator undertook additional processes to become familiar with and connected to the focus group findings (26)(32).

The Lead Investigator wrote the focus group protocol and held meetings with their co-researcher before and after the discussion to ensure the objectives were clear and to gather an impression post-discussion.These steps did compensate for some of the connection lost between the Lead Investigator and the data collection, but the remote nature of all the discussions also meant there was less opportunity for the Lead Investigator to observe the non-verbal aspects of participants communication. This study was limited by time and may have produced additional knowledge and gained additional perspective if the Lead Investigator had months or years to establish rapport with participants (13)(42). Further, the Lead Investigator did not speak Swahili so some level of nuance and understanding was possibly impacted by the translation process (48).

The use of online interviews via video calling are also relatively new in the world of research(42). The research team would have preferred to collect data in person and benefit from the information gained through face-to-face interaction, but they also recognized that the virtual approach increased the flexibility of their timeline and made data collection possible over vast distances.

The methods used for the online study can also be informative for cross-cultural, qualitative studies in the future (42)(41). This study shows that remote cross-cultural research can make valuable contributions to global understanding of human experience. Important factors to the success of the study included the use of team approach to research with members located in various parts of the world, the use of translation to allow participants to share reflections in a language in which they are comfortable, and the use of reflexivity and critical consciousness in the analysis process. The use of remote data collection did pose some challenges, including the inability to converse in-person in a common language (41).

Finally, this study investigated a small project with highly specific context. The experiences of individuals, though informative, are not necessarily generalisable to all international collaborations. This study should not be regarded as a guide for cross-cultural collaboration within cervical cancer prevention, but rather an informative collection of insights on factors that can influence the success, strength, and sustainability of such projects.

Section 6. Conclusion

In conclusion, the study explored the experience of clinicians working in an international, cross-cultural collaboration. Participants provided insights into the factors that contribute to strong and sustainable projects. Their approach to collaboration was multi-dimensional with elements of professional partnership, mentorship, sponsorship and friendship. The participants' stories and experiences demonstrate that despite cultural and geographical differences, there is much that connects clinicians in their efforts to prevent cervical cancer in Tanzania. The findings from this study provide information for global health collaborations in LMICs contexts looking to focus on personal connection, intentional incorporation of local priorities, and investment in consistent long-term progress. The focus on local priorities, a genuine interest in learning, and a shared sense of purpose can help build trust and facilitate two way knowledge exchange between partners. The success of the collaborative effort in improving local screening rates, encouraging community members to engage in cervical screening and implementing services that catch cervical cancer before it becomes palliative shows the value of sustainable, cross-cultural partnerships in healthcare.

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Appendices

Appendix A. Lead Investigator's Orientation in Reflexive Thematic Analysis Context

I am sitting in a farmhouse, looking over Trondheim Fjord in Norway. In many ways, my life for the past five years in this rural Norwegian town has been isolated and the recent pandemic exacerbated this distance to the 'outside' world. I was born and raised in Canada, so connection to the 'outside' world is of great personal interest as my family and friends live across the world.

I am also invested in connecting with the outside world academically. My post-secondary education has been a journey through many different aspects of health. I have studied at a nursing school and gained hands-on experience working with patients in a clinical setting. Though the personal aspect of nursing did appeal to me, I was drawn to examine the theories driving systems of care and social determinants of health. I pursued my interests in the study of international health systems and sociocultural elements of population's health outcomes, and now find myself here at my computer in the northern reaches of Scandinavia, writing about the burden of a women's health concern in the Tanga region of Tanzania.

This is my first time leading a recent project and implementing methods of analysis in a real world scenario. I am highly aware of my inexperience and my physical, cultural, professional distance from the participants in my study. As I have designed my project, I have leaned into elements of my cultural safety training and the expertise of other members in the research team.

I have also reflected over my role in this project. I am a student of global health, and even though I have never been to Tanzania nor have been involved in the process of screening a patient for cervical cancer, I can harness my research skills and analytical insights so that I can contribute in a meaningful way to closing the existing research gap.

As I lay my imposter syndrome to the side and embrace this learning process, I realise there are elements of my world view and positioning within this project that are important for me to acknowledge.

Firstly, I am a visual learner, which is useful in identifying patterns and finding golden threads within the research, but it also means I feel more distant from the data without being able to put faces to some of the participant voices. I also feel slightly at a loss when analysing spoken words collected through an audio file or Zoom screen without having properly observed the physical behaviour that accompanied them.

Secondly, for all my life I have lived in a high-income country. So, my understanding of the world and health is potentially more similar to that of the Canadian participants than the Tanzanian participants. For this reason and because I too do not speak Swahili, I have recruited nine Tanzanian participants and only two from a Canadian background. I require more narrative reflections from Tanzanian clinicians in order to come closer to an understanding of their experience.

Thirdly, my understanding of the HIC perspective is even more established as I have a social connection to the key informants outside of the study setting. RTA discounts the positivist notion of ‘bias’, as increased connection to the material does not inherently make a researcher's contribution less valuable, but it is important to acknowledge that it does impact it in some way. My ability to understand their references and engage in conversation about common experience brings me closer to the insights they shared in their key informant narratives.

Finally, the impact of the pandemic has changed the way I engage with people and studies. I have become more nervous in social interactions and more inclined to connect with the world through my computer. Though my social anxiety is slowly resolving, much of my global health studies at NTNU have taken place over a screen. Many other students and researchers can relate to this shift in the way we all interact and can speculate on its longer term impact for the world of global health research.

Now that I have provided a sense of who and where I am in relation to the research context, I have also included excerpts from my research journal.

Appendix B. Research Journal Excerpts: Reflections from my analytical process

The following reflections from my analytical process illustrate some of my decision making and thinking that led me to the findings I present later in this thesis. The first excerpt is from my first session of coding as I started figuring out a system for how I would move through the content from the focus group data:

"*As I opened the file in DeDoose, I was overwhelmed by the amount of content. In order to stay focused and on track, I have set a work timer for 45 minutes and then I will take a 15 minute break and continue. I think this will make my coding approach more sustainable and keep my mind fresh. I have also printed out a copy of my research questions and have them staring at me from beside my computer. I am easily distracted, so hopefully this will serve as a reminder to stick to 'keyness' . The first session is based on the overarching research question. With a printed copy of the research questions beside me. It is possible that the following sessions become more and more of a hybrid as I read the text over and over."*

After I got into the flow of coding, I realised that I was reacting to certain language and patterns in the data:

"*The participants use the words 'please' and 'thank you' at the start and end of each of their contributions to conversation. They also introduce themselves repeatedly, and mention their status within the clinic as if to qualify their insights. To me, it seems overly formal and rigid. But, I suppose this could be an element of the cross-cultural nature of this study shining through. Perhaps meetings and discussions in the clinical context are always more formal than what I am used to*."

There was also language used that I recognized to have a potential impact on the content of what the participant was trying to communicate:

"*Words such as 'motivation' seem to be loaded with judgement in this text. I am not sure whether this is a function of the translator's interpretation or choice of words, but participants seem to be defensive in response to the question regarding 'motivation' and seem to regard it as something they do not need nor want to have. But, they speak of their interest in the work and things that inspire them to work ... which in my mind is what 'motivation'* *refers to…. Another example of curious language is the word 'poisoned' which they use to describe their perception of community members who aren't willing to participate in screening. I wonder whether this strong word is used to communicate frustration or whether it too is a word I interpret as strong and pointed but was not intended by the translator to carry so much judgement*."

As I became more familiar with the data, I reacted less to the formality of the focus group and to the specific weight of certain words and more to the overall codes and themes that started to emerge. I also noticed that I developed trends in my approach to coding as I became more immersed in the analysis:

"*As I am coding, I have the option to choose from codes that I have used before. I wonder if this is impacting how I am selecting meaning units and assigning codes. And, I wonder if my word choice will impact the way I later interpret the codes that exist. For example, I just applied the code 'counselling of patients' to the excerpt "we encourage them to come out for testing", but I wonder if 'connection to clients' or perhaps 'connection to community' would be more fitting. I can see there are more instances of participants mentioning the nature of their connection to clients through education and counselling, so perhaps I should go back and adjust those codes*."

I did return to my code book and adjust it over the course of the analytical process:

"*I have just completed my key informant interviews, and now I am returning to my code book with fresh eyes. I am going to circle back and review some of my original codes from the focus group data, because now I have a greater understanding of the golden threads that connect patterns throughout the participant group*."

As I rounded out my research journal, with over two hundred memos, I realised that I was indeed familiar with the content and felt immersed in the conversations of the clinicians despite my physical, cultural and professional distance:

"*I just read an excerpt where one of the participants feels connected to their work and the progress of their cervical screening project as they review 'reams and reams' of names in the clinical record book. And, in some way I feel like a parallel can be drawn to my current* *situation. I too am connected to my project through data. I am looking through the screen of my computer at transcripts and stories from some participants I have never met. But, as I have reviewed their words, my data, and found patterns and themes, I too have a real visceral feeling of relationship to the work. Just as cervical screening logbooks and biopsy records provide a window for the clinicians to look at the patterns and progress in their work, my codebook and data provides me with a window to uncover patterns in the narrative of the participant's experience*."

Appendix C. Focus Group Protocol in English & Swahili

1. Welcome (2 minutes):

Thank you for taking the time out to take part in this focus group. I will be the moderator for today's focus group. In the next hour, I will guide you through conversation topics about your experience as a clinician working in cervical screening. My role today is to ensure this is a safe space for open conversation, to encourage your participation and to ensure the technical aspect of our recording goes smoothly.

Our clinic works in collaboration with the Canadian doctors from Bombo Palliative Care Project (Dr. Ambrose Marsh & Dr. Leah Norgrove & their team). Annika Svorkdal, the student whose study we are supporting today, is interested in your reflections about how it is to work in collaboration with clinicians from a different part of the world and what makes our collaboration so strong & successful! The purpose of this focus group is to discuss your experiences working with cervical screening here at Tanga Regional Referral Hospital and your experiences working with international partners.

Itifaki Ya Majadiliano ya Kikundi

1. Karibuni (dakika mbili)

Asanteni sana kwa kuchukua muda wenu kujiunga nasi katika majadiliano haya ya kikundi. Nitakuwa msimamiza wenu au ninaye ongoza kikundi hiki. Katika dakika sitini zifuatazo nitawaongoza katika mazungumzo kuhusu mambo mnayoyapitia kama matabibu wanaofanya kazi ya uchunguzi wa kizazi (cervical screening). Jukumu langu leo ni kuhakikisha kuwa kikundi hiki ni mahali ambapo mnajihisi mko salama na mnaweza kupiga gumzo bila wasiwasi wowote. Na pia kuwatia moyo ili mshiriki katika mazungumzo haya. Mwisho, ni kuhakikisha kuwa sehemu ya kiufundi yaku rekodi mazungumzo yetu iko sambamba.

Zahanati (Clinic) yetu hufanya kazi ikiungana na madaktari kutoka Canada, wanaohusika na mradi wa Bombo Palliative Care (Daktari Ambrose Marsh na Daktari Leah Norgrove na timu zao). Annika Svorkdal, mwanafunzi ambaye kazi yake tuna fanya leo hii, angependa kujua maoni yenu kuhusu vile ilivyo kufanya kazi na madaktari kutoka sehemu nyingine ya ulimwengu. Na ni nini hufanya ushirikiano huu kuwa wa nguvu na wenye mafanikio! Kusudi la majadiliano haya ya kikundi ni kuzungumza kuhusu mambo mnayopitia mnapoifanya kazi ya uchunguzi wa kizazi (cervical screening) hapa Tanga Regional Referral Hospital na maoni yenu kuhusu vile ilivyo kufanya kazi na washirika wa kimataifa (international partners).

2. Agenda & Practical Information (5 minutes)

I will begin by giving information about privacy & practicality of our focus group:

1) We will be recording our conversation on this device (*show device*). Our conversation will occur in Swahili and the audio file will be sent to a translator who will convert the file to English for Annika, the student, to understand.
2) You will receive monetary compensation for your time. A payment will be made to each participant.
3) Participation is voluntary and you can withdraw without consequence at any time.
4) Everything we share in this group will be confidential and anonymous. Your reflections will be made anonymous and your information protected. The audiofile & translated copy will be destroyed at the end of the project. The only people with access to the audio files during the project are Annika and the translator. This also means that everything we share with each other in the focus group today is not to be shared outside of this focus group. At the end of her project, when she has listened to our discussion about our experience and listened to Canadians talk about their experience, Annika will report back her findings in the form of a presentation and written report.
5) The themes we will cover today include: Your motivation for work, your interaction with clinical systems, knowledge exchange & connection with the Canadian clinicians and what makes this clinic unique.
6) Are there any questions before we turn on the recording device & begin with oral consent to participate?

2. Ajenda na Ujumbe wa Vitendo (Practical Information) (Dakika tano)

Nitaanza kwa kuwapa ujumbe kuhusu faragha na utaratibu (privacy and practicality) wa kikundi hiki cha majadiliano:

i. Tutakuwa tuki rekodi majadiliano kwa kutumia kifaa hiki (onyesha kifaa). Majadiliano yetu yatakuwa katika lugha ya Kiswahili na faili ya sauti (audio file) itatumwa kwa mkalimani atakaye igeuza katika faili ya Kingereza ile mwanafunzi Annika akapate kuielewa.
ii. Mtapata hela kama malipo kwa muda wenu. Kila mtu atapata Dolla hamsini na tano za Canada (55 CAD$).
iii. Kutoa maoni yenu katika kikundi hiki cha majadiliano ni kwa hiari yenu, kumbukeni kuwa mnaweza kukataa kuendelea na mazungumzo haya wakati wowote na hakutakuwepo na shida yoyote.
iv. Mambo yoyote tutakayosema katika kikundi hiki yatawekwa kuwa siri na bila kujulikana. Mtakayo yasema yatafanywa kuwa siri na ujumbe kulindwa. Watakao weza kuzipata faili za sauti (audio files) wakati mradi huu unaendelea ni Annika na mkalimani wake. Hii ina maana kuwa chochote kitakacho semwa katika majadiliano haya ya kikundi hayapaswi kuzungumziwa tena tutakapo maliza kikundi hiki. Annika atakapo maliza mradi huu na kusikiliza majadiliano yenu kuhusu mnayoyapitia na pia kusikiliza madaktari kutoka Canada wakizungumzia kuhusu wanayoyapitia, ata repoti atakacho gundua katika njia ya uwasilishaji na repoti ya kuandika. Kisha tutapata reporti hiyo nasi tutaamua tunavyotaka kuutumia ujumbe huu. Mradi huu wa Anita utaandikwa kama thesis ya shahada ya master’s lakini haitachapishwa bila sisi kutoa ruhusa au kuhidhinisha.
v. Mandhari (themes) tutakayozungumzia leo ni: ni nini huwapa motisha ya kufanya kazi, mwingiliano wenu na mifumo ya zahanati (clinical systems), kubadilishana mafikira na uhusiano wenu na madaktari kutoka Canada, na nini kinachofanya zahanati hii yenu kuwa ya kipekee.
vi. Kuna maswali yoyote kabla niwashe kifaa chetu cha ku rekod? Na tuanze na nyinyi kusema kwa sauti kama mmekubali kujiunga na kikundi hiki cha mazungumzo kwa hiari yenu.

3. Consent (3 Minutes)

1. **turn on the recording device and place in the centre of the group**
2. We will begin by going around the circle, introducing ourselves to the recording and then providing consent to be a part of Annika's master's thesis. Today, we are providing consent to participating in a focus group recording that will be protect, anonymized, only accessed by Annika and Caroline (the translator) and destroyed at the end of Annika's project.
3. Please state your name for the recording & state clearly that you consent to participating in a today's focus group recording.
4. **send the device around the group to obtain consent**

3. Kukubaliana (dakika tatu)

i. *washa au anzisha kifaa cha kurekodi na ukiweke katika ya kikundi hiki*

ii. Tutaanza upande huu tafadhali, naomba kila mtu ajitambulishe ili kifaa chetu cha ku rekodi kikapate ujumbe huu na pia tuweze ku rekodi kila mtu akisema kuwa amekubali kujiunga na kikundi hiki cha majadiliano kwa hiari yake. Na kuwa mnafahamu ujumbe huu utatumiwa na Annika kuandika thesis yake ya shahada ya master's. Leo hii tunakubali kuwa tutajiunga na kikundi hiki cha majadiliano kwa hiari yetu na chochote tutakachosema kitawekwa kuwa siri na bila kujulikana (anonymized). Kisha ujumbe huu utasikilizwa tu na Annika na mkalimani wake Caroline na kuharibiwa (kutupwa) kabla ya mwisho wa Mei 2023 ambapo Annika atakapo maliza mradi wake.

iii. Tafadhali tuambie jina lako ile tuweze ku rekodi na useme kwa uwazi ya kwamba umekabali kwa hiari yako kujiunga na kikundi hiki cha majadilaino.

iv. *zungusha kifaa cha ku rekodi kwa kila mtu ili kupata makubaliano yao*

4. Focus Group Discussion (40 Minutes)

Warm up Question 1 Minute: Let's begin by going around the room and providing a quick introduction about ourselves: Can you please tell us your title and how long have you worked with cervical screening at Tanga Regional Referral Hospital?

Thank you very much. I’m now going to ask about your experiences as a clinician working in cervical screening.

4.Kikundi Cha Majadiliano (dakika arobaini)

Swali la kujitayarisha kabla tuanze (dakika moja): Tuanze upande huu tafadhali na kujijulisha. Tafadhali tuambie kitu kimoja kukuhusu. Tafadhali pia tuambia cheo chako (title) na umefanya kazi ya uchunguzi wa kizazi (cervical screening) kwa muda gani hapa hospitali ya Tanga Regional Referral.

Asanteni sana. Sasa nitawauliza kuhusu mnayoyapitia (your experience) kama madaktari au matabibu mnapofanya kazi hii ya uchunguzi wa kizazi (cervical screening).

(Category: Motivation)*5 Minutes*

Question: What do you like best about your job?
Probe: What is the most challenging part of your job?
Probe: What motivates you to work through the challenging parts of your job?
Probe: What aspect of your work are you most proud of?
Probe: Do you feel like you are making a difference in the lives of your patients?
Probe: Why do you feel that way?

Thank you for sharing your experience and motivations behind your work. Now, we will move on to talk about our clinical systems such as logbooks, care paths, and technological tools.

(Kategoria: Kujitia moyo au Kujipa Motisha) Dakika tano

Swali: Ni nini unachokipenda zaidi kwa kazi yako?
Chunguza Zaidi (probe): Ni kipi kigumu sana au ni nini inakupa changamoto kubwa katika kazi yako?
Chunguza zaidi: Ni nini hukupa motisha au ni nini hukutia nguvu kutia bidii ambapo kazi inakupa changa moto kubwa au kazi inapokuwa ngumu?

Chunguza zaidi: Ni kipi unachojivunia sana kwa kazi unayoifanya?

Chunguza zaidi: Je unahisi kwamba unabadilisha maisha ya wagonjwa wanaokuja kutibiwa hapa hospitalini?

Chunguza zaidi: Na kwa nini unahisi hivyo?

Asanteni sana kwa kutoa maoni yenu kuhusu mnayoyapitia na vitu ambavyo vinawapa motisha kufanya kazi yenu. Sasa tutasonga mbele na kuzungumza kuhusu mifumo ya kiafya (clinical systems) kama vitabu vya kurekodi (logbooks), njia mnazotumia kuwatunza wagonjwa (care paths) na vifaa vya teknolojia (technological tools).

(Category: Interaction with Clinical Systems) *8 Minutes*

Question: Have there been any changes in technology or clinical tools used at the clinic during your time working at TRRH?

Probe: Tell me about these changes: what has changed and how is it different from the technology or clinical tools you were using before.

Probe: Can you describe why these changes occurred?

Probe: How have these updates changes in technology or clinical tools impacted your work?

Probe: What changes in technology or tools would you like to see in the clinic?

Probe: How would those changes in technology impact your work?

Probe: How would electronic documentation impact your work?

Thank you for your reflections. Now we will move on to discuss our connection with international clinicians.

(Kategoria: Mwingiliano na Mifumo wa Kiafya (Clinical Systems) Dakika nane

Swali: Je, kumekuwepo na mabadiliko yoyote katika teknolojia ama vifaa vya afya (clinical tools) vinavyotumiwa wakati umekuwa ukifanya kazi hapa TRRH?

Chunguza zaidi: Unaweza kutueleza ni kwa nini kumekuwa na mabadiliko haya?

Chunguza zaidi:Je, mabadiliko haya ya teknolojia au vifaa vya afya (clinical tools) yame athiri kazi yako?

Chunguza zaidi: Ni mabadiliko gani ya teknolojia au vifaa ungependa kuona katika zahanati (clinic) hii?
Chunguza zaidi: Haya mabadiliko katika teknolojia yata athiri aje kazi yako kwa njia gani?
Chunguza zaidi: Je, kuandika nyaraka kwa njia ya kielektroniki (electronic documentation) kuta athiri aje kazi yako?

Asanteni sana kwa maoni yenu. Sasa tutasomnga mbele na kuzungumza kuhusu uhusiano wenu na madaktari wa kimataifa.

(Category: Connection to Canadians) *12 Minutes*

Question: How would you describe the nature of the collaboration between the Canadians and the local team at TRRH?

Probe: How would you describe their role in your clinic?

 Probe: From your perspective, what motivates the Canadians to do their work?

Probe: What is the most difficult part about having international partners?

Question: Do you feel like you are part of an international effort to address cervical cancer?

Probe: *IF YES*: For those of you who answered YES: is there anything in particular that makes you feel like you **are** a part of an international community of clinicians?

Probe: *IF NO*: For those of you who answered NO: Is there anything in particular that makes you feel as though you are **not** a part of an international community of clinicians?

Question: Does the clinical environment feel different when the Canadians are here?

Probe *IF YES*: How does the clinical environment feels different when the Canadians are there?

 Probe: How do patients react or behave when the Canadians are there?

(Kategoria: Uhusiano na Wananchi wa Canada) Dakika kumi na mbili

Swali: Je, utaelezaje asili ya ushirikiano (describe the nature) kati ya wananchi wa Canada na kikundi cha hapa TRRH?

Chunguza zaidi (probe): Unaweza kuelezaje majukumu yao katika zahanati yenu?

Chunguza zaidi: Kutokana na maoni yenu, ni nini huwapa wananchi hawa wa Canada motisha ya kufanya kazi yao?

Chunguza zaidi: Ni sehemu ipi ngumu sana kufanya kazi na washirika (partners) wa kimataifa?

Swali: Je, unajihisi kama wewe ni sehemu ya juhudi za kimataifa za kuchunguza saratani ya shingo ya kizazi (cervical cancer)?

Chunguza zaidi: KAMA AMEJIBU NDIO: Kwa wale ambao wamejibu NDIO: kuna jambo lolote haswa ambalo limekufanya ukajihisi kana kwamba wewe NI sehemu ya jumuiya ya kimataifa ya madaktari?

Chunguza zaidi: KAMA AMEJIBU HAPANA AU LA: Kwa wale ambao wamejibu HAPANA: Kuna jambo lolote haswa ambalo limekufanya ukajihisi kana kwamba wewe SI sehemu ya jumuiya ya kimataifa ya madaktari?

Swali: Je, mazingira ya hapa kwenye zahanti (clinic) yamebadilika tangu madaktari wa Canada kuja hapa?

Chunguza zaidi: KAMA AMEJIBU NDIO: Unaweza kutueleza kwa undani mazingira ya hapa kwenye zahanati yamebadilika aje au kwa njia gani tangu madaktari hawa kutoka Canada walipokuja.

Chunguza zaidi: Je, wagonjwa huwa wana tabia gani (how do they react/behave) madaktari kutoka Canada wanapo kuwepo kwenye zahanati yenu?

(Category: Knowledge Exchange & Future Planning) *10 Minutes*

Question: What have you learned from the Canadians?

Probe: Do you trust the information they share?

Probe: Do you feel comfortable asking them questions?

Probe: What do you think they have learned from you?

Probe: Are there things you wish you could teach the Canadians?

This is all very helpful.

I'd now like to ask some questions about how TRRH compares to other clinics that you might have worked at or be familiar with.

(Kategoria: Kubadilishana Maarifa na Mipango ya siku za usoni) Dakika kumi

Swali: Ni nini umejifunza kutoka kwa madaktari kutoka Canada?
Chunguza zaidi: Je, unaamini ujumbe au maarifa madaktari hawa wanawaambia?
Chunguza zaidi: Je, unajihisi kuwa uko huru kuwauliza madaktari hawa maswali?
Chunguza zaidi: Je, unafikiria madaktari hawa kutoka Canada wamejifunza nini kutoka kwako?
Chunguza zaidi: Je, kuna mambo yoyote unatamani ungewafunza madaktari hawa kutoka Canada?

Asanteni sana kwa maoni yenu, ujumbe huu utanisaidia sana.

Sasa ningependa kuwauliza maswali kuhusu TRRH ukiilinganisha na zahanati (clinics) zingine ambazo unaweza kuwa umefanya kazi ama kuzijua.

(Category: What makes our clinic unique) *5 Minutes*

Question: Does the collaboration with the Canadians make it a unique place to work?
Probe: How would the clinic be different without the Canadian's involvement?
Probe: Have you worked in other clinics or health settings before this clinic?
Probe: How would you say that TRRH is different from other places you have worked?

(Kategoria: Ni nini hufanya zahanati yetu iwe ya kipekee) Dakika tano

Swali: Je, ushirikiano kati ya madaktari kutoka Canada na kikundi chenu hapa hufanya mahali hapa pa kufanya kazi kuwe kwa kipekee?
Chunguza zaidi: Zahanati hii ingekuwaje BILA au PASIPO NA ushirikiano na madaktari kutoka Canada?

Chunguza zaidi: Je, umeajiriwa kwa zahanati au hospitali yoyote ingine kabla kuajiriwa hapa TRRH?
Chunguza zaidi: Kwa walio fanya kazi kwinginepo, je, kuna tofauti gani kufanya kazi hapa TRRH na ulipo kuwa umeajiriwa katika zahanati au hospitali ingine?

Wrap-Up *5 Minutes*

Thank you so much for sharing your experiences with us. Before we go, I would like to know if there is anything else that we didn't discuss today that you think is important to know about your experience at the cervical screening clinic and the collaboration with the Canadians?

Thank you for participating in today's discussion. The recording will now end. **end recording** If anyone has questions or concerns or further reflections, I can provide the contact information of Annika, the masters student!

I will distribute your monetary compensation!

Kumalizia (Dakika tano)

Ningependa kutoa shukrani zangu kwenu kwa kutoa maoni yenu kwa uwazi. Kabla hatujaenda, ningependa kujua kama kuna jambo lolote la maana ambalo hatujazungumzia siku ya leo kuhusa mambo unayoyapitia ukifanya kazi katika zahanati inayofanya uchunguzi wa kizazi ikishirikiana na madaktari kutoka Canada?

Asante sana kwa kutoa maoni yenu katika majadiliano yetu. Nitaizima hii rekodi *zima rekodi* Iwapo kuna yeyote aliye na swali, wasiwasi wowote au maoni zaidi, ninaweza kukueleza njia utakayo weza kuzungumza na Annika, mwanafunzi anayefanya shahada yake ya master's.

Nitawapa malipo yenu sasa!

Appendix D. Example Key Informant Interview Protocol

Key Informant Interview Protocol

1. Welcome (2 minutes):

Thank you for taking the time out of your busy schedule for today's interview. My goal for the next hour is to gain insight into your experience working with clinicians at TRRH to set up the cervical screening program.

2. Agenda & Practical Information (5 minutes)

I will begin by giving some information about privacy and practical aspects of our interview:

1) I will be recording our conversation on this device (*show device*).
2) You will receive compensation for your time.
3) Participation is voluntary and you can withdraw without consequence at any time.
4) Everything shared today will be kept confidential and anonymous in any and all materials produced from this research project. Your reflections will be made anonymous and your information protected. The audio file will be destroyed at the end of the project. I am the only one with access to this audio file. After today's interview, I will analyse the audio file and report back my findings in the form of a written master's thesis, academic article, and related project reports.
5) The themes we will cover today relate to your experience collaborating with the TRRH clinic to establish and maintain a cervical screening program
6) Do you have any questions before I turn on the recording device & begin with oral consent to participate?

3. Consent (2 Minutes)

1. **turn on the recording device**

2. We will begin by collecting your oral consent to participate in today's interview
3. Please state your name for the recording.
    a. Do you consent to participating in today's interview?
    b. Do you consent to audio recording?

4. Interview discussion (45 Minutes)

Warm up Q: Let us start at the beginning. How did you first get involved with TRRH? Could you tell me about the origins of your work with TRRH? What piqued your personal or professional interest?

(Category: Project Origins)

Q: How did your involvement evolve in the shift from purely palliative care to an upstream screening and preventative approach?

Q: How would you describe your current role at TRRH?
Sub-Q: How has the nature of your role evolved over time?
Sub-Q: Why do you think that is?

(Category: Motivation/Cross-Cultural Collaboration)

Q: Do you feel like you are a part of the clinical community at TRRH?
Sub-Q: What makes you feel that way?
Sub-Q: What makes you feel connected to your work in Tanzania?
Sub-Q: What makes you feel disconnected from your working in Tnz?

Q: In your experience, what is the most challenging part of working within a cultural context that is different from your own?

Sub-Q: Is there anything that has made this easier?

Sub-Q: How have local clinicians helped you make connections with the community in Tnz?

Sub-Q: What makes you feel disconnected from your work in Tanzania?

(Category: Knowledge Exchange)

Q: My understanding is that you have attended home visits with some of the local clinicians. Have the home visits affected your understanding or approach to clinical care?

Sub-Q: Do you feel like you learn things from your Tnz care partners?

Can you tell me about the kinds of things you've learned from them?

Sub-Q: Would you describe yourself as a mentor in the cervical screening clinic? Y/YN?

Sub-Q: Do you feel that there is an equal exchange of knowledge between the Tanzanian clinicians and yourself?

Q: Do you feel like you are a part of the clinical community at TRRH?

Sub-Q: What makes you feel that way?

(Category: Holistic Health)

Q:. How does the idea of holistic care inform your work at TRRH?

Q: The cervical screening program stemmed from your work with palliative cases and has come to be located within an HIV clinic. Do you feel that the cervical screening program functions in harmony with other existing systems?

(Category: Finances & Administration)

Q: I'm interested in understanding how the financial aspect of the relationship impacts collaboration.

Sub-Q: How have you, as a funder, experienced the financial relationship?

Sub-Q:Do you feel that the financial relationship affects the trust in your collaboration in any way? How so?

Sub-Q:Have you experienced any pressure from TRRH regarding finances or resources?

Q: It is my understanding that the design of care algorithms and logbooks were a team effort. How did this process function to meet the administrative needs of both parties?

Sub-Q: Is this a process you would suggest for other clinicians working towards strong connections in international collaborations?

Sub-Q: I understand you are also a part of research investigating using these logbooks & records. Is this a collaborative process?

(Category: Unique)

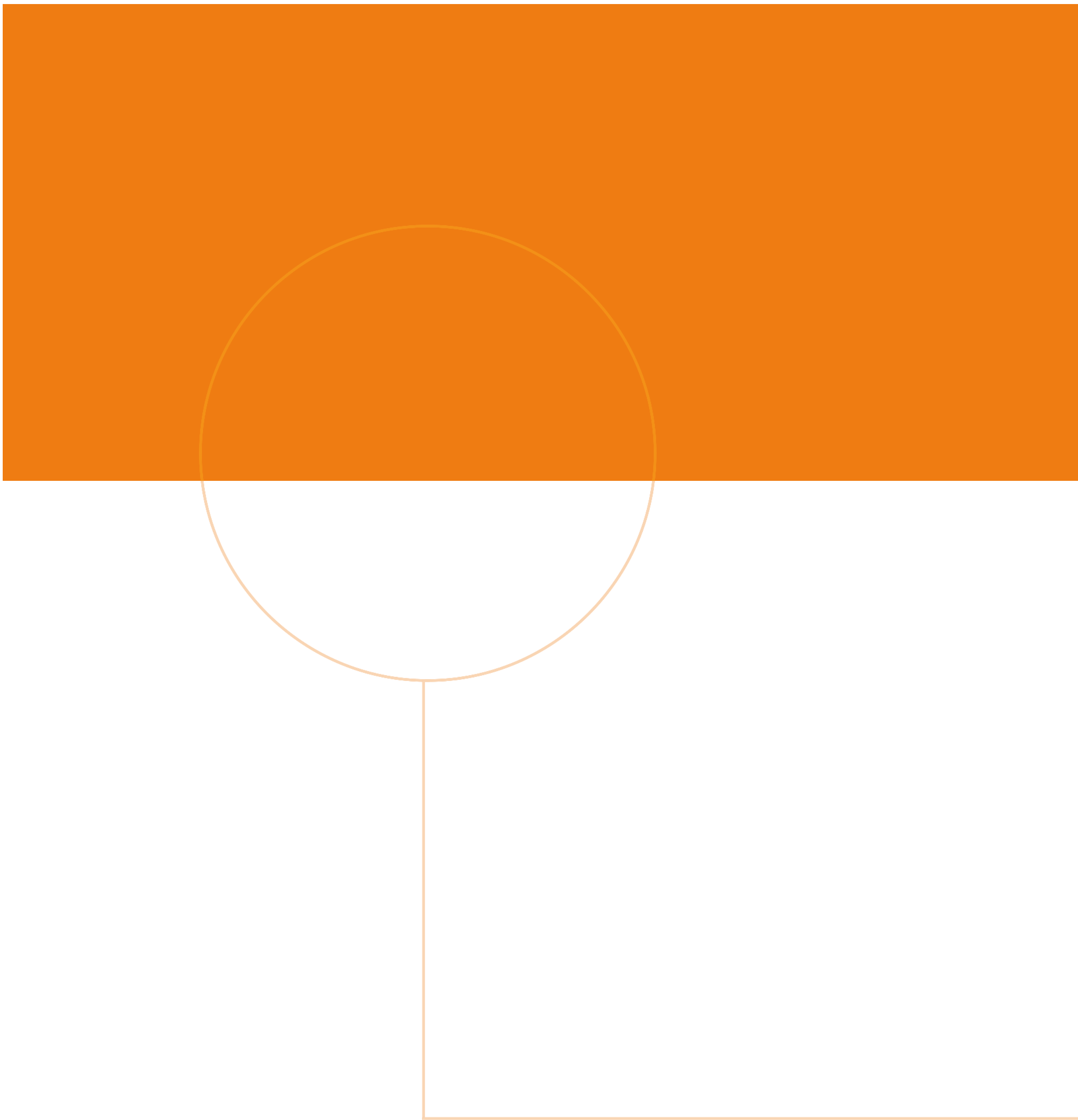
Q: How do you feel that your collaboration is different from other cross-cultural collaborations you have observed in the Tanga region?

Sub-Q: What advice would you give to others who are interested in establishing a successful cross-cultural collaboration?

Wrap-Up *5 Minutes*

Thank you so much for sharing your experience! Before we wrap up, is there anything else that we didn't discuss today that you think is important to know about your experience at the cervical screening clinic and the collaboration at TRRH?

Thank you for participating in today's interview. The recording will now end. **end recording**



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