

# Teamwork in Qualitative Research: Descriptions of a Multicountry Team Approach

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## Abstract

Multicountry teamwork in qualitative research is receiving increased recognition in an attempt to address global health problems. We report our experience of teamwork implementing a multicountry study (Zambia, South Africa, and Kenya), employing qualitative research to gain insight into met needs of contraception. Using this study example, we demonstrate the innovative development of a multicountry, south–south relationship (i.e., collaboration and sharing of knowledge between developing countries located in the Global South) within the health-care research setting. In addition, strategies employed for a collaborative research process and approaches used for data collection and analysis are described. We also describe the parallel but interlinked processes of developing a collaborative relationship, rigorous data collection, and the process of teamwork in data analysis. We discuss how we collaboratively developed and tested codes and themes and the use of a shared codebook in a team. The end result was country-specific data analyses reports using a single shared codebook, allowing for analyses that were appropriate to the region yet comparable across countries. The success of this project can be attributed to the methodological rigor, facilitated by intense communications, and support processes in this south–south collaboration.

## Keywords

qualitative research, multicountry study, south–south collaboration, reproductive health research methodologies, teamwork

## What is already known?

- There are rigorous steps for data collection, analysis, and presentation in qualitative research.
- Teamwork in multicountry research is increasing in popularity in order to address global problems.
- Multicountry work is often based on north–south relationships.

## What this paper adds?

- Details of the development of a multicountry relationship, in particular a south–south relationship, and strategies employed for a collaborative qualitative research process—including the advantage of working in close time zones, facilitating working in real time.
- Practical approaches used for qualitative data coding and analysis, as a team, across countries, including the development of a master code list that worked well across three countries even though local contexts differed.

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- Demonstration of the advantages of having context-specific researchers coding and analyzing qualitative data.

## Introduction

Much has been written about conducting qualitative research within health settings and outlining the rigorous steps involved in qualitative work (Bradley, Curry, & Devers, 2007; Denzin & Lincoln, 2005; Sandelowski & Leeman, 2012; Savage, 2006; Ulin, Robinson, & Tolley, 2012). These steps include strategies for data collection, analysis, and presentation (Pope & Mays, 2006). Qualitative research was traditionally undertaken by a single researcher immersed in both the setting and the data (Geertz, 1973; Jarzabkowski, Bednarek, & Cabantous, 2015; Richards, 1999). While early qualitative methodology focused on a single researcher approach, this practice has changed over time with more research projects being undertaken by a team of researchers (Jarzabkowski et al., 2015). Traditionally, qualitative research was individual, “instinctive, feeling your way,” whereas teamwork has led to more planning, enabling systematic and less messy data collection and analysis (Hall, Long, Bernbach, Jordan, & Patterson, 2005; Richards, 1999). In addition, postmodernist and feminist theorists challenge the authority of the researcher as the sole interpreter of data production and understanding (Denzin & Lincoln, 2005).

Globalization has changed and shaped the interconnectedness of different locales across the world and has created the opportunity for localized context to interact and engage with globalized partners and researchers (Denzin, 2014; Moyo Okwaro & Geissler, 2015; Quinlan, 2000). There is, therefore, a need for local researchers to situate their findings within the larger context of the global community but also for the global community to be contextualized and identified within the local context (Denzin, 2014; MacClancy, 2002).

Teamwork, especially multicountry teamwork, in qualitative research is increasing in popularity in an effort to address global problems that extend beyond the local setting (Jarzabkowski et al., 2015; Montgomery, 2012; Moyo Okwaro & Geissler, 2015). The health setting provides a rich context for collaborative teamwork, where researchers from various epistemological orientations can engage and interact about a research question (Ulin et al., 2012). Teamwork in qualitative research can broaden understandings of concepts and allow for the meaningful development of interventions.

Although some literature describes teamwork, it largely focuses on fieldnotes and reflexivity. Very little has been written on the practical methods of how teams work together, especially in the context of health research and “south-south” partnerships (Gerstl-Pepin & Gunzenhauser, 2002; Jarzabkowski et al., 2015; Montgomery, 2012; Wasser & Bresler, 1996).

The goal of this article is to provide a practical example of a successful multicountry qualitative data collection and analysis process. Using a study example, we demonstrate the development of a multicountry relationship, strategies employed for a collaborative qualitative research process, and approaches used

for collaborative data coding and analysis. The end result was that individual countries used a single, shared codebook to conduct separate country data analyses. As a result, country-specific data analyses reports were written, allowing for analyses that were appropriate to the regions, yet comparable across the three countries.

## The Context

*Our research project.* Unmet need for contraception remains high in many settings (Jain, Obare, RamaRao, & Askew, 2013; Singh, Darroch, & Ashford, 2014). Additionally, many women using contraceptives are not satisfied with their method, potentially putting them at risk for discontinuation without replacement with a more acceptable method, leading to unintended pregnancy (Singh et al., 2014). Exploratory, qualitative research was done as part of a larger study which aimed to develop an intervention to reduce unmet family planning/contraceptive need that involved community and health system participation. The key objectives of this exploratory qualitative research were to gain deeper insight into the knowledge, attitudes, and practices of family planning/contraceptive users and nonusers and understand barriers and enablers who influence family planning/contraceptive use. Furthermore, understandings of what quality of care meant to community members and health-care providers were explored. Finally, community participation activities and practices in the relevant areas were considered and assessed.

The Human Reproduction Team in the Department of Reproductive Health and Research at the World Health Organization [WHO] initiated this study. The qualitative exploratory research was conducted in selected districts in 2015—eThekweni District in South Africa, Kilifi County in Kenya and Kabwe District in Zambia—based on the existence of a contraceptive policy, availability of family planning/contraceptive services and infrastructure. Details of this research project is to be published elsewhere (Cordero et al., 2017).

The South African team acted as the qualitative research component coordinators, bringing the three country researchers together to perform the qualitative research activities as a team. The country teams were responsible for the qualitative research instrument development (i.e., interview and discussion guides which were common to all countries), data collection, and the management and analysis of the data.

A south-south collaboration between the three countries was established. Most health-related research such as interventions and more specifically clinical trials are based on north-south collaborations (Jentsch, 2004; Moyo Okwaro & Geissler, 2015; Thorsteinsdóttir et al., 2010). The “north” comprises largely of the developed world compared with the “south” which consists predominantly of developing countries (Moyo Okwaro & Geissler, 2015; Quinlan, 2000). North-south relationships may have challenges including vastly different sociocultural backgrounds, different country wealth and development statuses, varying service delivery scenarios, and even time differences. Additionally, the unbalanced power dynamic

between the two groups has received some criticism (Montgomery, 2012; Moyo Okwaro & Geissler, 2015). Increasingly, it is argued that research topics, design, and ethical concerns should be guided by the south, who should also provide input to analysis and dissemination of results, in an attempt to balance these north–south relationships (Jentsch, 2004).

In our study, although we had a partner from the north (the WHO), the qualitative component was driven by a south–south relationship. This provided an enabling environment of collaboration, teamwork, and sharing of knowledge between three developing countries (South Africa, Zambia, and Kenya).

The study received approval from the respective authorities in each country involved: WHO: scientific approval from the Research Project Review Panel, ethics approval from the WHO Ethics Review Committee, A65896. South Africa: Department of Health approval, ethics approval from the University of the Witwatersrand's Human Research Ethics Committee (Wits HREC), M1504101. Kenya: Ministry of Health approval, ethics approval from the Kenyatta National Hospital/University of Nairobi Ethics and Research Committee (KNH/UoN ERC), P592/09/2014. Zambia: Ministry of Health approval, ethics approval from the Biomedical Research Ethics Committee of the University of Zambia, 003-03-15.

*Why qualitative research?* The aim of qualitative research is to provide rich, detailed information with an emphasis on depth, insight, and the elucidation of human behavior (Mays & Pope, 2000; Silverman, 2013; Ulin et al., 2012). The exploratory, in-depth methodology of qualitative inquiry was ideal to produce powerful data which could inform the development of an intervention for this project. In addition, it facilitated a participatory approach to the development of a single intervention with country-specific caveats due to the nature of the cross-country teamwork.

*Our theoretical paradigm.* Theory provides the framework through which the observations and interpretations of human behavior and responses can be understood and plays an instrumental role in the analysis and interpretation of qualitative data (Ulin et al., 2012). Theory and theoretical framework identification are important in teamwork. Different researchers may have different theoretical stances that could create conflict between team members when reflecting on and discussing data (Moyo Okwaro & Geissler, 2015). It is, therefore, important to discuss the theoretical stances of team members from the outset of a project, particularly prior to the development of a codebook.

Qualitative health research has both practical and theoretical components that must be taken into consideration (Bradley et al., 2007; Morse, 2011).

We employed a thematic content analysis approach within a social constructionism paradigm. Social constructionism is useful when studying human reproduction, since the practice is steeped in socially constructed cultural understandings and interpretations (Burr, 2015; Patton, 2002) and is further complicated by adding in health seeking behavior, in our study

focusing on uptake and use of contraception/family planning methods and services. The constructionist approach allowed us to identify socially constructed meanings that participants attached to their everyday behavior and provided a guide for us to become more reflective about the data analysis process. Reflexivity allowed us to acknowledge that participants provided socially constructed meanings to their behavior, which were further understood through the construction of codes and interpretation of themes elucidated (Barry, Britten, Barber, Bradley, & Stevenson, 1999).

Our analytical approach was both inductive and a priori. Health-care models, such as the Andersen (1968) Model of Health Behaviour Use employed in this study, have already established some aspects of health-seeking behavior and utilization but are not necessarily comprehensive or context specific since most of these models are developed in the global north (Montgomery, 2012). In this regard, the constructionist approach was followed. Each team member is situated within their own local context and therefore has their own localized understanding and professional background, resulting in different interpretations of seemingly familiar terms or concepts. For example, with the categorization of the concept of “health-care personnel” in the codebook, local knowledge and circumstances required interaction and discussions between researchers to collectively construct what we understood each category to mean. This process of developing a combined codebook was both iterative and constructionist.

During the data analysis process, it became clear that a certain degree of flexibility and dialogue was necessary for the combined approach to work. The strength and value of the south–south collaboration allowed for each country team to add to the definition of both new and well-established concepts.

*Rigor and quality assurance in qualitative data.* Rigor in qualitative research is achieved in numerous ways including paying meticulous attention to the data collection and analysis process as a whole. However, rigor and quality assurance in qualitative data can be challenging to measure as the researcher is the instrument for data collection and analysis, and the nature of qualitative research is flexible, reflective, subjective, and iterative (Greenhalgh, 2010; Mays & Pope, 2000). There is also discordance about the criteria needed to measure quality in qualitative inquiries and some caution that a single set of criteria is incompatible with the epistemological underpinnings of qualitative inquiry (Denzin, 2013; Denzin & Lincoln, 2000). Despite this conflict, qualitative researchers set out to produce accounts of data that are credible, dependable, confirmable, and transferable with trustworthiness being a fundamental objective (Ulin et al., 2012).

Ulin, Robinson, and Tolley (2012) note that the goal for transferability in qualitative research “is to produce data that are conceptually, not statistically, representative of people in a specific context” (p. 27). This applied to our research project, conducted in a health-care context, where the same research problems occur with similarly sampled populations.

Additional criteria for measuring rigor and quality include reflexivity, transparency, reliability, validity, and triangulation

(Greenhalgh, 2010; Mays & Pope, 1995; Reynolds et al., 2011). In our study, reliability was achieved by meticulous documentation of the data collection and analysis process, from the outset, facilitated by the nature of our teamwork processes (Mays & Pope, 1995). Consistency in applying methodological methods and conventions of inquiry was key to producing dependable results within our multicountry project team. Furthermore, study findings were triangulated with previous research data reported for the study areas.

Framework sets of criteria have been proposed to assess rigor in qualitative studies (Reynolds et al., 2011). Although rigor and quality assurance in qualitative research go beyond checklists, they can offer some guidance in maintaining quality standards, especially when working in a team. In this project, we took the COREQ-32 item checklist (Tong, Sainsbury, & Craig, 2007) into consideration during data analysis and reporting along with criteria outlined by Greenhalgh (2010). Using such checklist(s) can provide some guidance in quality management within a team.

*Intercoder reliability.* Although intercoder reliability is not the most credible method to show reliability of qualitative research findings, it can be useful in teamwork projects to help ensure that coding is consistent across teams (Bazeley & Jackson, 2013; Bernard, 2002; Greenhalgh, 2010). Some authors caution against running coding comparisons exclusively as a test for quality assurance, since many factors could influence findings and interpretations within qualitative studies (Bazeley & Jackson, 2013; Greenhalgh, 2010).

NVivo software (Version 10, QSR International) was used in this study to facilitate data analysis. It allows for coding comparisons to be run between different coders. The results are reported according to the Cohen's  $\kappa$  score and the percentage of agreement between coders (Bazeley & Jackson, 2013). In this project, after double coding of transcripts, we used the coding comparisons as points of discussion and reflection on the data, rather than a numeric measure of reliability. The numeric measures are easily influenced by many arbitrary factors, so instead of reporting these measures, we used them to gauge if there was agreement and understanding of the definitions of the codes among the team members. Any discrepancies were discussed until agreement was reached.

### Teamwork in Qualitative Research

Qualitative research has been portrayed as a lone research activity (Barry et al., 1999; Jarzabkowski et al., 2015), undertaken by a single researcher (Geertz, 1973; Jarzabkowski et al., 2015; Richards, 1999). However, increasingly, it is a team activity (Gerstl-Pepin & Gunzenhauser, 2002; Jarzabkowski et al., 2015; Wasser & Bresler, 1996), especially in qualitative health research, where team members can be from diverse backgrounds and fields (Richards, 1999). Teamwork in qualitative work can be challenging, including disagreements in data interpretation and lack of clarity of roles, but meticulous attention to the process—from protocol development to write up of

results—can benefit the teamwork experience (Barry et al., 1999; Jarzabkowski et al., 2015; Richards, 1999). Despite the increase in teamwork, there is a paucity of literature on the practical methods of how this is done (Gerstl-Pepin & Gunzenhauser, 2002; Jarzabkowski et al., 2015; Wasser & Bresler, 1996). There is also a lack of literature on qualitative teamwork in the context of a south–south relationship (Moyi Okwaro & Geissler, 2015; WHO, 2017).

In numerous ways, teamwork facilitates rigor in the process. Data management in teams is often controlled and explained in standard operating procedures (SOPs) that guide the work and ensure that everyone in the team follows the same process. The development of a codebook by a team may also contribute to study rigor—if new codes emerge from the data, a team is called together to discuss and reflect on these new codes—facilitating reflexivity of the data, probably more so than with individual researchers (Barry et al., 1999; Richards, 1999).

### The Process

The following section describes the development of our multicountry relationship and strategies we used to facilitate a collaborative qualitative research process.

#### Study Team Set Up

All three countries were involved in the qualitative component of the project throughout the study—from study conception and design, development of data collection instruments, to study implementation and data analysis ensuring that there was ownership and contribution from multiple sites.

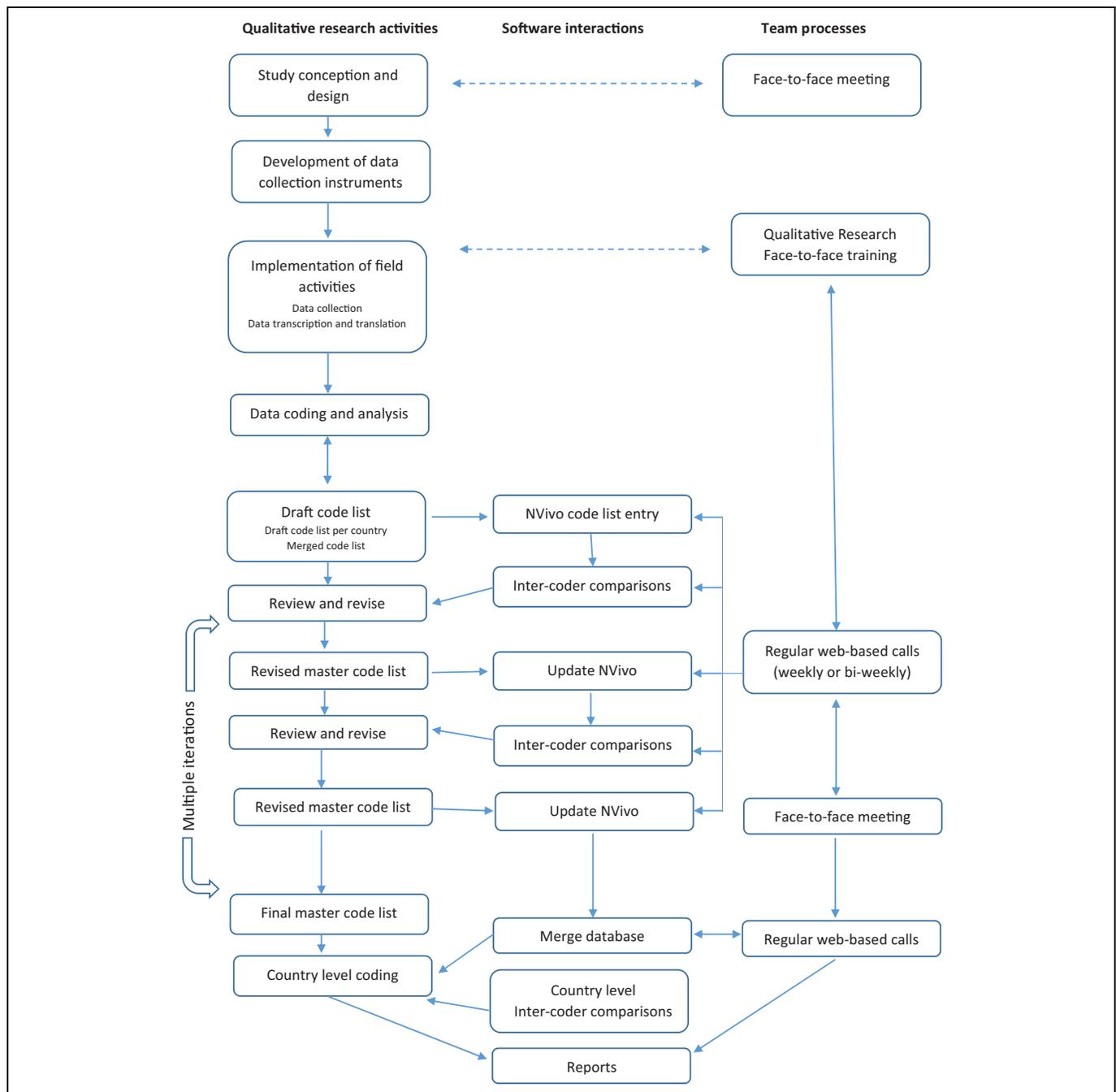
Initial research conceptualization and design of data collection instruments were done in a team meeting held in Zambia. At this meeting, the WHO representatives, study principal investigators, and researchers from all three countries met face to face and brain-stormed study activities and tools. This face-to-face meeting allowed for real-time identification of research priorities and discussions. It also enabled discussions of how to collect comparable data for the same research objectives in potentially different research settings. Data collection instruments and tools were then developed, taking the various cultural and developmental contexts into account.

After study initiation, the teams expanded to include additional researchers, research assistants, interviewers, and transcriptionists. All team members were fully trained on the study protocol, objectives, and research activities.

It is important to note that the process of teamwork was parallel and interconnected to the process of data collection, coding, and analysis (see Figure 1 for details of the activities and processes).

#### Data Collection Strategies

As part of this study, based on scientific and expert guidance and input, we conducted 12 community participant focus groups, 2 health-care provider focus groups, and 8–10 in-depth interviews in each country (South Africa, Kenya, and



**Figure 1.** Qualitative research activities and processes.

Zambia). Data collection strategies were discussed and agreed upon by study principal investigators and researchers from all three countries to ensure uniform strategies that were appropriate to the different country settings.

Community members were purposively selected via snowball sampling to represent various age-groups, marital status, parity, and urban/rural status. Health-care providers were purposively selected from the health facilities in the study districts and represented a range of staffing categories. Focus groups were conducted to facilitate discussion within homogenous groups on the topics of interest. Key informants were also

selected via purposive and/or snowball sampling and represented individuals with expertise and/or influence in the field of family planning and reproductive health in the study regions. In-depth interviews were conducted with them to explore detailed information and experiences on the study topics. All participants provided written informed consent to study participation.

Participant recruitment and data collection were done by trained and experienced researchers, research assistants, and interviewers. For the community representatives, group facilitators were matched with participants by sex and language,

and age was also taken into consideration so that participants would feel comfortable discussing sensitive issues in their groups. Health-care provider discussions were conducted by facilitators with experience in health-care settings.

### *Coordination and Training*

At the onset of the study, it was evident that the members of the teams in the three different countries had different levels of qualitative research understanding and experience. One country team (South Africa) was allocated a coordination role, which included training to ensure that all teams were at the same starting point. Once the research activities and data collection instruments were designed, when data collection was about to commence, an in-depth initial training was held face to face in Zambia, with data collectors, researchers, and other team members, from all three countries. The training covered the basics of qualitative research, data collection methods (including skills for interviewers and facilitators), transcribing conventions, how to develop codes and then code data, and tips for using NVivo 10 (QSR International) software.

### *Communication Between Sites*

We established that there needs to be ongoing and regular communications between sites. Ongoing communication was an important part of our teamwork process, to ensure that all team members were always up to date on study progress at each site, to ensure ongoing sharing of lessons learnt, and to facilitate understandings of study data. This was critical to provide good quality data collection, analysis, and interpretation. These communications were planned in person and virtually, via web-based teleconferencing (such as Skype) and other electronic means.

Throughout the study, there were planned team conference calls—initially biweekly and then weekly as study activities intensified. Representatives from all three countries (including but not limited to, country principal investigators, researchers, research assistants, and fieldworkers) and WHO participated in these calls. In addition, there were ad hoc conference calls and team e-mails for any in-between issues that arose. The coordinating team from South Africa initiated and led all regular communications.

The initial purpose of these calls was to provide updates on study activities, to share fieldwork challenges and successes, and to plan activities according to study timelines. As the study progressed, the purpose of the calls shifted to discuss interesting themes arising across and between countries; the development of a codebook; testing the codebook; and finally data coding, analysis, and report writing strategies. During the data analysis stage of the project, some calls were scheduled for a full day to facilitate discussions on codebooks, intercoder reliability and to develop strategies for ongoing data coding and analysis.

A face-to-face meeting was also held in South Africa with researchers from all three countries during the data analysis

phase of the study. At this meeting, detailed coding issues were discussed and compared.

A number of factors facilitated the communications processes across the countries. Firstly, project time lines were aligned therefore fieldwork activities happened simultaneously across all three countries, facilitating real-time communications about field experiences. This also meant that data transcription and analysis activities occurred simultaneously, which enabled relevant and study-specific communications across sites. At a more practical level, there were very little variations in time zones across the countries, so it was easy to coordinate times for regular calls and discussions. The face-to-face meeting during the data analysis phase allowed for ease of discussion, troubleshooting with using NVivo software, and planning for ongoing activities. Finally, having one study team responsible for coordinating communications and research discussions, meant that there was accountability for these activities. Despite the coordination role, it was recognized that each country team had expertise in their study areas and context, and all suggestions were acknowledged and discussed.

The main challenges with the regular calls were technology and Internet variability across countries which impacted on web connections and quality of the calls. However, where necessary, calls were rescheduled to ensure representatives of all teams had an opportunity to contribute to the discussions and processes.

Regular and good levels of communication between the three country groups created a sense of ownership of the data. This was established from the beginning of the project and played a key role in the success of the qualitative work. In addition, there was ongoing support and oversight by the study principal investigators and the WHO team, who hosted a Share-Point site to facilitate communications and sharing of documents and ensured that the overall study objectives and activities were continually aligned.

### **The Data Coding and Analysis Approach**

There is no singularly appropriate way to conduct qualitative data analysis, although there is agreement that it is an ongoing, iterative process that begins in early stages of data collection and continues throughout the study (Bernard, 2002; Bradley et al., 2007; Charmaz, 2000; Denzin & Lincoln, 2005). As is outlined in the ongoing communications throughout the study above, the data analysis was also ongoing in this study. Furthermore, it was a time-intensive process.

In this study, interviews and focus group discussions were audio recorded, with participant permission, transcribed verbatim, and translated where necessary. All transcripts were reviewed by study researchers to ensure quality control and adherence to the study-specific transcribing SOPs. NVivo (Version 10, QSR International) was used to organize, code, and analyze the data. A single master codebook and definitions were entered, transcripts imported, and coding was done in NVivo. Data were organized per country to allow for individual country data management as well as cross-country data

comparisons. Each country worked on separate databases, which were merged into a single master file—allowing for the individual country analysis as well as comparative analyses where appropriate.

Researchers and research assistants were the primary people involved in developing the codebook. The codebook was also shared with interviewers/fieldworkers, who had insight to the data from the field, and could provide input to the themes and code names that were identified. Due to ongoing communications between country teams, there were no marked challenges with data coding and analysis.

### What Are Codes?

Codes are labels that are used to reduce or summarize data from something complex into something simple and understandable (DeCuir-Gunby, Marshall, & McCulloch, 2011; Miles & Huberman, 1994). They enable organizing the data and expressions into something meaningful (Charmaz, 2000). Codes can be theory driven and developed a priori, they can be structural—based on the research goals and questions asked, and they can be more analytical—arising from the emergent themes in the data (Bradley et al., 2007; Charmaz, 2000; Ryan & Bernard, 2003). Our codes were a combination of these.

Each code listed in a codebook contains a name and a description of what that code means (Bradley et al., 2007; DeCuir-Gunby et al., 2011). The meanings may be prescriptive, which is necessary for accurate coding (Bazeley & Jackson, 2013; DeCuir-Gunby et al., 2011). If there are discussions in the data that do not fit into any of the existing codes and their definitions, then new codes can be created (Charmaz, 2000) which enables strengthening of the codebook and later can confirm data saturation.

The constructionist stance adopted by the team allowed for the identification of codes and themes within the data. This approach facilitated the thematic organization of the focus group and interview data according to the study objectives. This resulted in a code book that was flexible enough to be applicable across the three countries, yet was also context specific, allowing for comparison of themes. Thus, the qualitative work was interpretive and, in the development of a codebook, constructionist (Charmaz, 2000).

The act of developing a codebook and coding shows how this theoretical stance is pragmatically used. The qualitative researchers interpreted the data and then constructed the codes and definitions that lead to further interpretation and understanding of the data, resulting in themes. Relationships between themes within the data lead to the development of theory.

### How We Conducted Our Data Analysis

*Developing our codebook.* Data analysis for this study was conducted as a team effort across the three countries (Zambia, South Africa, and Kenya) in which this research was conducted. This was done to enable the development of a master codebook which would be applicable, reliable, and valid across

the three country sites and to enable comparisons of data at a later stage. The initial codebook was developed by researchers from all three countries reviewing transcripts from across the countries—so data represented in this codebook were not specific to one country.

Although the process of developing the codebook was integrated and reflective, it is presented here in a stepwise fashion.

*Step 1: Identification of codes.* Researchers from each country independently reviewed two to three transcripts each (representing focus group and interview data from across the three countries). Codes were generated iteratively based on input from the questions in the interview guides and emergent themes. Some of the codes were structural (based on the questions asked), and others were more analytical (arising from the emergent themes). The codes were thematically arranged in three separate codebooks—one for each country team.

*Step 2: Creation of an initial codebook.* These three country codebooks were reviewed by the individual country teams. The coordinating country team was responsible for merging them into a single, initial master codebook. Single code names were created for overlapping codes, and any additionally identified codes were evaluated to determine significance and incorporated into the codebook as applicable. Definitions, relevant to data from South Africa, Kenya, and Zambia, were assigned to code names.

*Step 3: Testing the codebook.* Following the development of the initial draft of the master codebook, six transcripts (representing different focus groups and interviews, two from each country) were double coded by researchers from the three countries. Intercoder comparisons were conducted using NVivo (Version 10, QSR international) which has a function to calculate these reliability scores. These scores were used as a rough guide, and double coded data were reviewed to facilitate discussion on differences in interpretations of code names and coding practices. Where necessary, new codes were identified and differences in coding were discussed until agreement in definitions were reached. The master codebook and definitions of codes were updated based on these discussions.

*Step 4: A master codebook.* Making use of the updated codebook, an additional three transcripts were double coded across the three countries. Again, intercoder comparisons were performed and any differences discussed and agreement reached. Based on the data coding and consultations, there were multiple iterations of the master codebook. The master codebook was finalized when agreement was reached.

*Testing our codebook.* A final master codebook was developed by all three country teams and entered into NVivo (QSR International). Data coding was then conducted at country level—researchers from each country coded their own country data making use of the master codebook. In addition to providing each site with ownership of their own country data, we felt that researchers would have a more in-depth understanding of their country-specific data. We used a single master codebook to

ensure that cross-country comparisons could be conducted at a later stage.

Additional transcripts were double coded at country levels to facilitate ongoing discussions and ensure consistency in coding at a country level. The remaining transcripts were single coded. It is important to note that the development of the codebook was intense and time consuming.

**Theme development.** Theme development follows on from initial data coding, and uncovering themes is a central aim in qualitative research analysis (Bazeley & Jackson, 2013; Ryan & Bernard, 2003). Themes take on a more abstract role in the interpretation of the data and add meaning to descriptive codes. Themes are developed by using the constant comparison method. This method includes comparing discussions within coded data sets and in particular observing for agreement, disagreement, tensions, and conflict (Charmaz, 2000; Ryan & Bernard, 2003). Themes are developed by looking for repetitions, cultural categorizations, metaphors, shifts in topics, similarities and differences, and theoretical interpretations of the data (Ryan & Bernard, 2003). NVivo (Version 10, QSR International) is useful in theme development. Running code reports, conducting coding matrices and queries, allows for detailed exploration into data and the development of themes (Bazeley & Jackson, 2013).

Similar to codes, themes can also be developed a priori or inductively from the data. The a priori themes can be derived from the literature, theoretical framework, or the study protocol. Inductive themes are derived from the data itself (Ryan & Bernard, 2003) and tend to be more abstract. In this study, we developed themes using a combination of the two methods. The theoretical framework of Andersen's (1968) health utilization behavior model and the study protocol guided a priori theme development. More abstract themes were developed inductively from the data and were less anticipated and more natural to the data.

Data were reported at a country level according to the objectives of the study. From the data, we were able to develop domains per country, which were the thematic areas used to inform our intervention. Based on the individual country reports, a single intervention was proposed and tested—which was adaptable at country level.

## Using Qualitative Data Analysis Software

Qualitative data analysis software can be extremely helpful to manage and organize large quantities of data (Ryan & Bernard, 2003). In this study across the three countries, there were in total 36 focus group discussions with 323 community participants, 6 focus group discussions with 51 health-care provider participants, and 28 in-depth interviews. While we used NVivo (Version 10, QSR International), the same can be said of other similar programs. The use of qualitative analysis software enabled us to summarize detailed discussions about specific thematic areas in a user-friendly way. It also enabled us to compare study data

across countries and within-population groups and other demographic characteristics at a country level.

While qualitative data analysis software can be an excellent tool for managing data, it is a critically important point to remember that the researcher(s) is/are still the main interpreter(s) of the data. Although a computer program can assist in organizing the data, any depictions or summaries of the data will still depend on how the data were coded and then will also be subjected to the further interpretation by the research team.

Using qualitative data analysis, software may also have challenges. In particular, NVivo (QSR International) files are very large and difficult to share across countries. We used Internet-based facilities (such as Dropbox) to share files, but version control was critical. Country databases were regularly shared and merged to facilitate intercoder reliability checks and data comparisons. No code name changes or structural changes could be made to the database without discussions as a team. All changes had to be made to a merged master database before team members could work on data again. The coordinating team in South Africa managed any database changes to ensure that version control was accounted for by one team. Versions of NVivo (QSR International) used across the countries also had to be compatible for merging of databases to be done. In addition, program licensing can be expensive, meaning that access to the qualitative analysis program could be limited. Web-based programs may be useful to address these issues but may have challenges of their own.

Despite the challenges, individual country coding was successfully performed on individual databases. The initial one-on-one team and ongoing training ensured that we were all familiar with the data analysis software and coding practices. The end result was a merged database, with country-specific data which had been coded at country level, but which was comparable across the three countries.

## Limitations

Team members had varying levels of experience with qualitative work, and as a result, there had to be training to ensure that the same level of analysis was applied across countries. However, the collaborative nature of the relationship between countries, as well as the support of an overall coordinator, meant that analyses were similarly conducted and comparable across countries.

As with all qualitative work, it could be argued that the sample size was small and the results of the analyses were not generalizable. However, the intention of this formative qualitative work was exploratory, and the collaborative nature of the analysis led to results which were similarly categorized across the three countries.

## Conclusions

In our study, the process of communications within and between the study teams and the data analysis occurred in parallel. The regular cross-country team communications

began at study start up and continued throughout the study and were beneficial in that they enabled timeous troubleshooting and learning from others' experiences. Effective communications enabled effective teamwork. As has been demonstrated elsewhere (Hall et al., 2005), the sharing of information, acknowledgement of individual and group goals, articulation of project elements, reciprocity, and respectful communication all lead to effective teams in qualitative research projects.

Although our study was a multicountry study and there was potential for various factors to influence communications and analysis, the fact that it was a south–south (African) collaboration was advantageous. Many multicountry studies are north–south collaborations which have multiple challenges. In this south–south collaboration, we aimed to address shared barriers to uptake of contraceptive methods. All three countries are developing countries, with similar health-care needs. By pooling expertise and resources, we were able to strengthen our capacity to address shared problems that may not affect the developed world (Thorsteinsdóttir et al., 2010).

Although qualitative research itself is viewed to have limitations such as poor generalizability due to the small sample size, in the context of this study, qualitative research was the most appropriate methodology to achieve our research aims and objectives. The development of a single, cross-country codebook enabled us to identify more generalizable findings for the respective countries' contexts.

Furthermore, although qualitative work has traditionally been done at an individual level, studies have demonstrated the advantages of teamwork in analysis and multicountry analysis more specifically—and this was also demonstrated in our research. Teamwork in analysis encourages critical questioning and constructive criticism, allowing for divergent viewpoints, which can make a codebook more relevant (DeCuir-Gunby et al., 2011). It allows for data which is comparable across countries and which is relevant within countries. It must be remembered that this active and circular process of discussion and reconciliation with constant comparisons is also very time consuming (DeCuir-Gunby et al., 2011; Ryan & Bernard, 2003). In addition to time, teamwork requires high levels of energy, commitment, skill, and creativity from all team members which can prolong the data analysis process (Hall et al., 2005).

All teams were involved in the data collection and development of the codebook. Our training in the use of the codebook was systematic and structured. Qualitative research processes that are systematic and rigorous can be labor intensive and lengthy (DeCuir-Gunby et al., 2011; Mays & Pope, 2000), and this was also noted in our study. These processes facilitate high-quality data collection and analysis.

We believe that this study provides an example of successful teamwork in a multicountry qualitative analysis. The success of this project can be attributed to the intense communications and support processes between study teams and the nature of the south–south collaboration.

## Authors' Notes

The authors alone are responsible for the views expressed in this article, and they do not necessarily represent the views, decisions, or policies of the institutions with which they are affiliated. Research materials can be obtained from the corresponding author.

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## References

- Andersen, R. (1968). A behavioral model of families' use of health services. In *Research Services*, 25. Chicago: Centre for Health Administration Studies, University of Chicago.
- Barry, C. A., Britten, N., Barber, N., Bradley, C., & Stevenson, F. (1999). Using reflexivity to optimize teamwork in qualitative research. *Qualitative Health Research*, 9, 26–44. doi:10.1177/104973299129121677
- Bazeley, P., & Jackson, K. (2013). *Qualitative data analysis with NVivo*. Los Angeles, CA: Sage.
- Bernard, H. R. (2002). *Research methods in anthropology: Qualitative and quantitative approaches* (3rd ed.). Oxford, England: Alta Mira Press.
- Bradley, E. H., Curry, L. A., & Devers, K. J. (2007). Qualitative data analysis for health services research: Developing taxonomy, themes, and theory. *Health Services Research*, 42, 1758–1772. doi:10.1111/j.1475-6773.2006.00684.x
- Burr, V. (2015). *Social constructionism*. London, England: Routledge.
- Charmaz, K. (2000). Grounded theory: Objectivist and constructivist methods. In N. Denzin & Y. S. Lincoln (Eds.), *The handbook of qualitative research* (2nd ed., pp. 509–535). Thousand Oaks, CA: Sage.
- Cordero, J. P., Steyn, P. S., Gichangi, P., Kriel, Y., Milford, C., Munakampe, M., . . . Kiarie, J. N. (2017). *Community and provider perspectives on addressing unmet need for contraceptives*. Unpublished, cited with permission from the authors.
- DeCuir-Gunby, J. T., Marshall, P. L., & McCulloch, A. W. (2011). Developing and using a codebook for the analysis of interview data: An example from a professional development research project. *Field Methods*, 23, 136–155.

- Denzin, N. K. (2013). The death of data? *Cultural Studies ↔ Critical Methodologies*, 13, 353–356. doi:10.1177/1532708613487882
- Denzin, N. K. (2014). Reading the challenges of a global community and the sociological imagination. *Qualitative Inquiry*, 20, 1122–1127. doi:10.1177/1077800414542934
- Denzin, N. K., & Lincoln, Y. S. (2000). *The handbook of qualitative research* (2nd ed.). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (N. K. Denzin & Y. S. Lincoln, Eds., 3rd ed.). Thousand Oaks, CA: Sage.
- Geertz, C. (1973). *The interpretation of cultures*. New York, NY: Basic Books.
- Gerstl-Pepin, C. I., & Gunzenhauser, M. G. (2002). Collaborative team ethnography and the paradoxes of interpretation. *International Journal of Qualitative Studies in Education*, 15, 137–154. doi:10.1080/09518390110111884
- Greenhalgh, T. (2010). *How to read a paper: The basics of evidence based medicine* (4th ed.). London, England: Wiley-Blackwell BMJ Books.
- Hall, W. A., Long, B., Bermbach, N., Jordan, S., & Patterson, K. (2005). Qualitative teamwork issues and strategies: Coordination through mutual adjustment. *Qualitative Health Research*, 15, 394–410. doi:10.1177/1049732304272015
- Jain, A. K., Obare, F., RamaRao, S., & Askew, I. (2013). Reducing unmet need by supporting women with met need. *International Perspectives on Sexual and Reproductive Health*, 39, 133–141. doi:10.1363/3913313
- Jarzakowski, P., Bednarek, R., & Cabantous, L. (2015). Conducting global team-based ethnography: Methodological challenges and practical methods. *Human Relations*, 68, 3–33. doi:10.1177/0018726714535449
- Jentsch, B. (2004). Making Southern realities count: Research agendas and design in North-South collaborations. *International Journal of Social Research Methodology*, 7, 259–269. doi:10.1080/1364557021000024776
- MacClancy, J. (2002). *Exotic no more: Anthropology on the front lines*. Chicago, IL: University of Chicago Press.
- Mays, N., & Pope, C. (1995). Rigour and qualitative research. *BMJ: British Medical Journal*, 311, 109–112.
- Mays, N., & Pope, C. (2000). *Qualitative Research in health care* (2nd ed.). London, England: BMJ.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage.
- Montgomery, C. M. (2012). Protocols and participatory democracy in a “North–South” product development partnership. *Sociology of Health & Illness*, 34, 1053–1069. doi:10.1111/j.1467-9566.2011.01455.x
- Morse, J. M. (2011). What is qualitative health research? In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (4th ed., pp. 4010–4014). Thousand Oaks, CA: Sage.
- Moyi Okwaro, F., & Geissler, P. W. (2015). In/dependent collaborations: Perceptions and experiences of African scientists in transnational HIV research. *Medical Anthropology Quarterly*, 29, 492–511. doi:10.1111/maq.12206
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Pope, C., & Mays, N. (2006). *Qualitative research in health care* (C. Pope & N. Mays, Eds., 3rd ed.). Malden, MA: BMJ.
- Quinlan, T. (2000). Anthropologies of the South. *Critique of Anthropology*, 20, 125–136. doi:10.1177/0308275X0002000202
- Reynolds, J., Kizito, J., Ezumah, N., Mangesho, P., Allen, E., & Chandler, C. (2011). Quality assurance of qualitative research: A review of the discourse. *Health Research Policy and Systems*, 9, 1.
- Richards, L. (1999). Qualitative teamwork: Making it work. *Qualitative Health Research*, 9, 7–10. doi:10.1177/104973299129121659
- Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15, 85–109. doi:10.1177/1525822x02239569
- Sandelowski, M., & Leeman, J. (2012). Writing usable qualitative health research findings. *Qualitative Health Research*, 22, 1404–1413. doi:10.1177/1049732312450368
- Savage, J. (2006). Ethnographic evidence: The value of applied ethnography in healthcare. *Journal of Research in Nursing*, 11, 383–393.
- Silverman, D. (2013). *Doing qualitative research: A practical handbook*. Thousand Oaks, CA: Sage.
- Singh, S., Darroch, J. E., & Ashford, L. S. (2014). *Adding it up: The costs and benefits of investing in sexual and reproductive health 2014*. Retrieved from <http://www.unfpa.org/sites/default/files/pub-pdf/Adding%20It%20Up-Final-11.18.14.pdf>
- Thorsteinsdóttir, H., Melon, C. C., Ray, M., Chakkalackal, S., Li, M., Cooper, J. E., . . . Ke, W. (2010). South-South entrepreneurial collaboration in health biotech. *Nature Biotechnology*, 28, 407–416.
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19, 349–357.
- Ulin, P. R., Robinson, E. T., & Tolley, E. E. (2012). *Qualitative methods in public health: A field guide for applied research* (1st ed.). San Francisco, CA: Wiley.
- Wasser, J. D., & Bresler, L. (1996). Working in the interpretive zone: Conceptualizing collaboration in qualitative research teams. *Educational Researcher*, 25, 5–15. doi:10.2307/1176204
- World Health Organization. (2017). *South-South and triangular cooperation*. Retrieved from <http://www.who.int/country-cooperation/what-who-does/south-south/en/>