

**RESEARCH ARTICLE**

The home visit communication skills inventory: Piloting a tool to measure community health worker fidelity to training in rural South Africa

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Abstract

Community-based home visiting programs using community health workers (CHWs) have become popular modes of delivering health care services, especially in settings where health workers are overburdened and resources are limited. Yet, little is known about the processes that shape effective implementation in low-resource settings, and whether these processes adhere to home visitors' training. This study used the newly-developed Home Visit Communication Skills Inventory (HCSI) to explore the delivery of a CHW program in rural South Africa. Routine home visits from CHWs to their maternal care clients were audio-recorded with consent, and later transcribed and translated into English. The HCSI, devised and piloted using existing frameworks and program-specific training components, consisted of 21 items covering domains related to active listening, active delivery, and active connecting, and was used to score English transcripts of the home visits. The HCSI was used to generate general frequencies and aggregate scores for each CHW. Eighty-four home visits by 14 CHWs showed a diverse application of communication skills. Active listening and active delivery were common, with fewer instances of active connecting observed. Practices disaggregated by CHW showcased varying strengths by an individual. In reviewing visit characteristics, longer average visit duration was significantly correlated with the presence of multiple types of active connecting skills. While technical skills were widely observed, fewer CHWs engaged in more complex "connecting" skills. The HCSI is a feasible, low-cost, and practical way to describe home visit fidelity among CHWs. Audio-based checklists can be used to describe fidelity to a model in the absence of additional supervisory resources.

KEYWORDS

communication skills, checklist development, community health workers (CHWs), home visiting, rural health, South Africa

1 | INTRODUCTION

Community-based home visiting programs are key modes of delivering health care services, especially in settings where facility-

based health workers are overburdened and resources are limited (Tulenko et al., 2013). Much of the evidence promoting home visiting programs have come from studies focused on assessing their impact (Bhutta et al., 2013; Christopher, Le May, Lewin, & Ross, 2011;

Haines et al., 2007; Hill et al., 2014; Lewin et al., 2010). While for the most part impacts have been positive, there have been varied results, in part because the ways in which these programs are implemented can vary tremendously. The evidence supporting home visiting programs has often failed to translate to practical, “real world” effectiveness, especially when these programs are expanded and replicated in new settings. Barriers to this knowledge translation include the lack of human and financial resources to adequately scale programs (Haines et al., 2007), inattention to contextual factors that may limit a program’s acceptability to its beneficiaries (Blacklock et al., 2016), and fidelity to the intended intervention.

Fidelity is a crucial, yet often overlooked, part of implementing home visiting programs (Kim et al., 2015). Fidelity to an intervention relates to both content (is key content delivered as intended?) and structure of delivery (are core practices being enacted as intended?; Dunst, Trivette, & Raab, 2013). The first category presents practitioners and researchers with more clear-cut tools, enabling the measurement of dosage, and content delivered. However, less tangible processes, such as implementer competence, are more difficult to engage, identify, and measure (Tomlinson, Hunt, & Rotheram-Borus, 2018). Implementer competence relates to communication, skills, and abilities that can affect the intended delivery of an intervention (Breitenstein et al., 2010). These factors are likely to be just as important in determining a program’s success as the number of visits completed, or the degree of adherence to a manual (Korfmacher, Green, Spellmann, & Thornburg, 2007; Schodt, Parr, Araujo, & Rubio-Codina, 2015). Nonetheless, measuring dosage and content has up to now proven to be easier, and less expensive, than more thoroughly examining soft implementer skills.

A number of contextual factors highlight the need for more investment in implementer skills, especially in low-resource settings. Evidence from home visiting programs indicates that simply relaying content or delivering instructions is not sufficient to make interventions effective (Brookes, Summers, Thornburg, Ispa, & Lane, 2006). Implementer competencies such as manner of engagement, body language, and communicative style can determine whether or not a client wants to begin or continue a clinical relationship (Breitenstein et al., 2010). Often, community health workers (CHWs) from low-resource settings require more training in these skills. While they may have local buy-in and be culturally similar to their clients (Kilpatrick, Cheers, Gilles, & Taylor, 2009), they also tend to be lay workers with limited employment, education, and preservice training experience (Glenton et al., 2013; Kemp & Henderson, 2012). Supportive supervision, which can mitigate these shortcomings, is often not possible in programs that are under-resourced and geographically dispersed. Thus, for CHWs to deliver interventions with fidelity, they ideally require a core set of competencies and opportunities to build and develop individual skills for their role, as well as an organizational environment conducive to nurturing these skills. Limitations in funding, supervision, and geographical and social context can act as barriers to quality in implementation.

It is important to consider means to extract key implementer skills and find simple, yet valuable ways to measure these skills and how they

may affect the delivery of an intervention. Motivational interviewing and communication analysis literature, which includes analysis of patient–clinician interactions (Kilian, Swartz, & Chiliza, 2015; Roter & Hall, 2006), can provide a template for measuring softer implementer skills, such as communication style and interpersonal competencies. The available evidence emphasizes creating solidarity or establishing an emotional bond; using different types of questions or speech prompts to gather information; providing information through facilitation, instruction, or direction; responding to information given as well as to feelings or concerns; and a focus on reciprocity or cooperation in making decisions about health behaviors (King & Hoppe, 2013; Roter, 2000b). To capture these factors, checklists can present more streamlined ways of translating findings to operational contexts; they have also been used in process research as well as health care settings to assess quality, standardize delivery, and observe fidelity (Dorsey et al., 2018). However, few checklists are present in community-based care settings, or as related to implementer skills.

In this study, we considered the most effective and practical way to capture implementer (CHW) competence related to a specific set of communication strategies. Communication strategies are one skill set that training may cover, yet little research has been done on how well this training translates into a home visiting setting (Roter & Hall, 2006). We piloted a communication checklist, which we entitled the Home Visit Communication Skills Inventory (HCSI), to explore the delivery of a CHW program in rural South Africa. This descriptive study aimed to capture communication skills in a home visit set as part of a larger study about CHW fidelity to a home-based maternal and child health intervention. What happens as CHWs move from training to delivery, and do we observe CHWs implementing core strategies from training on communication and rapport-building in the context of the home visit?

1.1 | The model and context

The Enable program is a rurally based home visiting intervention, established as the first “social franchise” of the Philani Mentor Mother model. “Social franchising” involves similar concepts to commercial franchising, where a model is taken to a new setting under new management, but aims to accomplish social ends, instead of seeking profit. In the Mentor Mother model, local mothers are identified through informal networks such as community leaders or village/neighborhood meetings, then selected and trained to deliver a home-visiting intervention (Le Roux, 2015). The program specifically looks for “positive deviants”—mothers who have been able to rise above adversity to raise healthy children—to provide support and education to their peers (Marsh, Schroeder, Dearden, Sternin, & Sternin, 2004). Master trainers conduct a 6-week training course for Mentor Mothers (MMs), which includes didactic lessons on health information, practical skills about establishing relationships and connecting to clients, and role-play and problem-solving practice sessions. Following this training, trainees complete a final examination. Performance during training and on the examination, as well as logistical considerations such as where each woman resides,

determine which of the trainees are ultimately selected as MMs. The selected MMs recruit pregnant mothers from their own village catchment areas and conduct routine home visits to educate and support clients through pregnancy, delivery, and their infants' first years of life. The program's key focus areas include maternal and infant wellbeing, child nutrition, immunization, HIV/AIDS prevention and treatment, and access to social and health services. In addition to supporting pregnant and recently-delivered women, MMs also identify and visit undernourished children and clients with chronic conditions requiring home-based care.

2 | METHODS

Stellenbosch University's Health Research Ethics Committee granted ethical approval to collect home visit data (N16/05/062).

2.1 | Setting

The Enable program is based in the Nyandeni Municipality, in the O.R. Tambo district of South Africa's Eastern Cape Province. Preparations for the Enable social franchise began in early 2016. Training of potential MMs took place in May and June, and the MMs selected for employment began recruiting clients in July 2016. In addition to 14 MMs each operating in their own area, the original supervision team consisted of two supervisors (one with a clinical background and the other with operational roles), and one program coordinator.

Nyandeni was selected for its poor health outcomes and access. Many of the critical health considerations facing South Africa's urban population, for which the Philani MM model was originally developed, are intensified in deeply rural settings like Nyandeni, where infrastructure is poor, options for transport to health centers are limited, and economic and employment opportunities are scarce (Massyn, Padarath, Peer, & Day, 2017). As such, the social franchise approach and the translation of a model from one setting to another presents an opportunity to consider fidelity in implementation and process.

2.2 | Data collection procedure

This study used audio recordings of routine home visits to pregnant and recently-delivered clients of the Enable program. The data for this study were collected during a sample of routine home visits conducted by Enable MMs during visits with pregnant clients and new mothers and their infants. An independent isiXhosa-speaking research assistant accompanied each MM on a randomly selected day to all of her planned perinatal and infant visits, to obtain consent to audio-record the visit. No supervisors were present for these specific visits. We employed an independent research assistant to reduce risk of bias or of jeopardizing the client-MM relationship, separating the MMs from the data collection process as much as possible. MMs were notified 1–2 days prior that they would be

accompanied. Before the routine visit began, the research assistant sat one-on-one with the client to review an informed consent form that contained simple language recommended by the ethics review board. Our method of translation included having all consent forms translated into isiXhosa by a research team member and quality-checked by a senior team member before use in the field. During and after review, the research assistant gave the client the opportunity to ask questions or to refuse to participate. If the client consented, the research assistant would start a new recording on a handheld audio recorder and exit the household, and the MM would enter.

Recordings began in January 2017, and were staggered by MM, with some MMs revisited to capture additional recordings, until February 2018. Additional recordings were sought to ensure a roughly equal number of visits for each MM. Informed consent forms were signed by all participants; audio recordings were downloaded and removed from the recorder on the same day as collection and kept in a secure location. Two isiXhosa-speaking transcribers were responsible for simultaneous transcription and translation from isiXhosa to English; approximately 25% of transcripts were reviewed by a senior isiXhosa-speaking team member for quality control purposes. All transcripts were anonymized using a participant identifier.

2.3 | Developing the Home Visit Communication Skills Inventory (HCSI)

To analyze key themes across transcripts of these audio-recorded home visits, we developed a checklist, the HCSI. We decided to use a checklist to capture the presence of key skills, in lieu of coding each phrase in the transcripts. The HCSI was developed using a combination of reported best practices from similar research, program-specific guidelines, and iterative additions. First, existing frameworks and measures from client-provider communication research were surveyed through literature searches including keywords such as "patient-provider communication," "client-provider-communication," and "physician-client communication" (Abdel-Tawab & Roter, 2002; King & Hoppe, 2013; Roter, 2000b; Roter & Hall, 2006; Watermeyer & Penn, 2009). Related work evaluating home visit program quality was also reviewed (Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007; Roggman et al., 2016). Further literature was identified from these initial searches.

Second, in-depth notes were made from the Philani training manual's module on communication, which teaches specific skills for communication and broader strategies for relationship-building within the context of the home visit (Philani Maternal Child Health & Nutrition Trust, 2016). Six key questions about MM skills and behaviors during the visit were formulated, based on the core components of the training chapter. These questions guided the design of a draft checklist, synthesizing the reviewed communication skills, and adopting "best practice" frameworks to reflect specific features of the training. CL devised an initial checklist of 17 items, which was checked by SS and MT. During a pilot stage, approximately 20 transcripts were read and coded using this draft checklist, after which minor iterative changes were made to reflect the

TABLE 1 Home visitor communication skills inventor

| Domain | Communication strategies, guided by key questions |
|-------------------|--|
| Active listening | <p>Does the mentor mother employ each of the following active listening skills?</p> <ul style="list-style-type: none"> Ask for clarification^a Gather information^b Reflect content/information given^a Reflect feelings/concerns^b <p>Does the MM encourage dialog by asking open questions, and engaging “tell me more” techniques or rhetorical devices?</p> <ul style="list-style-type: none"> Asking open questions consistently (at least three examples)^b “Tell me more” techniques^a |
| Active delivery | <p>Does the MM share relevant information that addresses the client’s situation, and/or reference prior visits to build on knowledge?</p> <ul style="list-style-type: none"> Relevant new information (at least three examples)^a Information retention (checking on information retained from a prior visit)^b Visit continuity (regarding knowledge, health education imparted previously)^c <p>Does the MM ensure that the client understands her, and understands the choices she has to make?</p> <ul style="list-style-type: none"> Ensuring comprehension^b Soliciting questions^a Using questions to probe understanding^a <p>Does the MM counsel the client in a way that suggests, rather than dictates or directs—meaning that the client has room to make her own health decisions?</p> <ul style="list-style-type: none"> Clear “suggest” statements present, more than directives^a |
| Active connecting | <p>Does the MM show a range of diverse examples of connecting to the client?</p> <ul style="list-style-type: none"> Empathy and/or understanding^a Recognize, praise, or affirm^a Nonjudgmental attitude^a Articulating confidentiality^a Articulating trust in the relationship^b Sharing similar experiences/observations^c Other rapport-building evident^b Visit continuity (regarding connecting again)^c |

Note: Items have been drawn from three main sources (mentioned below) and some concepts have been rephrased for clarity and applicability.

^aPhilani Training Manual, 2016.

^bRoter Interaction Analysis System framework.

^cSharing similar experiences/observations.

communication skills observed, resulting in the final HCSI, comprising 21 items (Table 1). Changes included the addition of two new categories and the combination/division of existing categories.

2.4 | Checklist scoring and analysis

Transcripts were organized in ATLAS.ti software, where codes were applied that matched the 21 HCSI items. A primary coder (CL) reviewed each transcript against the HCSI items and coded a given phrase or exchange as reflecting this communication skill. After the transcript was reviewed twice by CL, the strategies coded were entered into a database using a 1 (present) or 0 (absent). A secondary coder (SG) trained on the HCSI coded 10% of transcripts and discussed scores with CL for reliability. In cases of disagreement, both coders met to discuss and resolve discrepancies; however, overall, there were very few instances where coders disagreed on the presence of an element (15/200 disagreements, 7.5%).

The analysis was conducted across two levels: first, general frequencies of observed communication strategies were recorded across all MMs. These frequencies were organized individually, and

also into the following three domains: active listening, active delivery, and active connecting. These domains were devised as a way to group like skills thematically: listening, delivery, and connecting were chosen as three overall strategies that encompassed key skills for MM-client engagement, and that necessitated MMs taking an active role in driving the interaction. Active listening is commonly understood as having skills to concentrate, comprehend, and adequately respond to an individual over the course of a conversation or counseling session. Active delivery was conceptualized as a further step beyond this skill: selecting a response to the client’s individual situation or needs, and following through on the information shared with that client to facilitate understanding, retention, and confidence on the part of the client. Active connecting, as a third overarching domain, was seen as additional skills related to fostering a relationship with the client and utilizing strategies to build rapport in diverse ways.

Second, strategies were disaggregated by MM to observe variation among MMs and by domain. For each MM at each visit, items within each domain were summed (how many strategies observed of the total available), and an average of these scores was taken. These averages were then converted to proportions.

3 | RESULTS

3.1 | Descriptive information

3.1.1 | Home visit recordings

Table 2 shows a summary of descriptive information. In total, 84 home visits were recorded, transcribed and coded. While each of these 84 transcripts reflected separate home visit sessions, five clients were recorded twice ($n = 79$ clients). The majority of clients were pregnant. Visit duration ranged from a quick check-in visit of three and a half minutes to a 34-min session; the recorded visits averaged just over 16 min.

3.1.2 | Mentor mothers

All 14 MMs were accompanied for a subsample of their visits with different clients to be recorded. On average, six visits per MM were recorded. To obtain a substantive number of audio recordings across all MMs, each MM was accompanied on either one or two full days to all of their daily visits.

3.1.3 | Clients

Clients ($n = 79$) were a mix of first-time mothers and experienced mothers; just over one-third of clients sampled were expecting or had delivered their first child (35.7%), whereas seven clients (8.3%) already had four or more children before entering the program. Eight

clients (9.5%) were 18 years or under at the time of recruitment into the program. While the duration of the relationship between MM and client ranged from one prior visit to 34 visits, the average number of visits before our recording session was 11.

3.2 | Observed practices

The communication practices observed in-home visit sessions are reflected using illustrative examples, as well as frequencies of HCSI observations by cohort and by individual MM, shown in Figure 1.

3.2.1 | Active listening

Across recordings, most visits showed evidence of gathering information, and asking open questions (e.g., inquiring about feeding practices and follow-up dates), as well as probing clients to give more context about clinic visits or ongoing health issues. Most visits also gave evidence of the MM reflecting the information or content she was given. These instances included reflecting information given verbally, information gathered from observing the child, and information gathered from reviewing health records such as the mother's maternity card or the infant's Road to Health Card (e.g., "Since it's written here on your card, it shows that you are HIV-negative").

The practice of asking for clarification was also present in over 80% of visits, for example, the MM asking, and "tell me more" techniques, which might constitute a MM prompting, "Mmhm...", or "What else?" were also observed across nearly 70% of visits. While reflecting content and information was common, reflecting feelings and/or concerns of the client was less common.

3.2.2 | Active delivery

Nearly all visits showed at least three instances of the MM delivering information relevant to the client about her own health or pregnancy, as well as preventative health advice for her baby's health. Ensuring comprehension and using suggestive (rather than a directive) language were also common practices, present in over 80% of visits. Often MMs would conclude with "You see?" or "Do you understand?", but sometimes they used demonstrations or visual aids to ensure comprehension, such as the child's growth chart attached to the case file:

MM: [She] was on 3.4 kg, now on 3.7 kg, you see on this chart since there are these black lines, then there are these ones below, the baby's weight needs to be here (pointing), inside, if it is here, that means the baby's weight doesn't correspond with her age, maybe she had...flu or stomachache or whatever. So yours is inside this thing, she is on this thing (pointing) here.

TABLE 2 Descriptive information about the home visit recordings

| Session information | N | Mean (M), standard deviation (SD), range |
|--|----|--|
| Audio-recorded home visits sessions coded | 84 | |
| Home visits during client pregnancy | 53 | |
| Home visits after client delivery (with child) | 31 | |
| Length of visits (mm:ss) | | M = 16:13 SD = 7:15 Range = 3:30–33:54 |
| Client information | 79 | |
| Age of clients | | M = 25.72 SD = 6.23 Range = 15–41 |
| Clients who are first-time mothers | 30 | |
| Number of previous children, mean | | M = 1.42 SD = 1.57 Range = 0–7 |
| Mentor Mother information | 14 | |
| Recorded visits per mentor mother | | M = 6 SD = 1.52 Range = 3–8 |

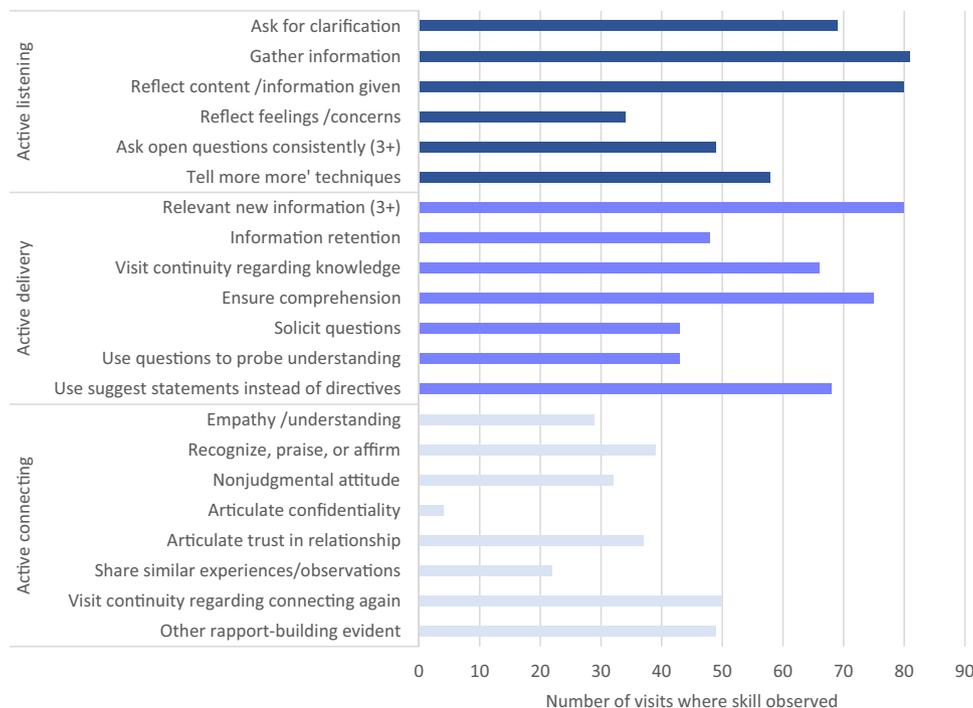


FIGURE 1 Frequencies of communication strategies observed in Home Visit Communication Skills Inventory ($n = 84$ visits), domains coded by color. [Color figure can be viewed at wileyonlinelibrary.com]

Suggestive statements used key words such as *emphasize*, *suggest*, *encourage*, or other words conveying importance, without clearly instructing or directing the client: “because us, as MMs, we do not encourage [baby cereal].” At times, these phrases were also used to give the client guidance about how to broach the topic with their partner, such as insisting on using condoms during sex:

The condom protects you and protects the baby...so now you need to show that you will be the caring parent, you will be the responsible parent from now, if you say something goes this way, say it to your partner that “it is like this,” also by the time you [are] breastfeeding, even though we are not there yet, [a] condom needs to be used.

A majority of visits also showed the MM following up on a health problem or behavior discussed in prior visits, ensuring a sense of continuity in health education.

Over half of visits included checking on information retention from prior visits, soliciting questions, and using questions to probe understanding, such as: “Do you still remember your date to go for a checkup at [the hospital]?” When MMs solicited questions, they would often finish explaining a health issue by saying, “Is there anything you don’t understand that you want to ask?” Using questions to probe understanding encompassed more deliberate examples, or using a client’s words to invite more explanation, such as, “why [are] you saying [your] baby doesn’t get full with breast milk?”

3.2.3 | Active connecting

Discussing visit continuity regarding visiting again was the most commonly observed active connecting skill (59.5%). Examples of visit continuity included general statements, such as, “I’m going to visit you often, visiting you often as you are about to give birth, weekly, chatting and advising each other about constructive things.” They also included more specific scheduling by day or date, or conveying a sense of MM availability: “When there is something that you don’t understand, you just call me, I am easy to reach. You would ask what is happening, then I would tell you what to do.” A high proportion of visits demonstrated MMs employing similar rapport-building (connecting) techniques. Sharing similar experiences was less commonly observed, but used to establish rapport as well, such as a MM instructing her client to communicate with her after a clinic visit, “Yes, because—there is that thing of going to [the clinic] and not receiving immunizations.”

Nearly half of the visits (46.4%) showed evidence of the MM recognizing, praising, or affirming the client. Often these phrases included a compliment about the baby, but sometimes comprised other affirmations: “You are doing an important thing, sis, it is important to test and to know your [HIV] status.” Articulating trust in the relationship was also present in nearly half of the sessions, in which the MM might indicate a shared commitment: “as we come here often, we want to raise this child together.” Discussing trust also encompassed requests for openness by the MM:

A Mentor Mother then, as I'm visiting here, is a person to look after you and also when there is something that you don't understand, you must ask and tell [me] that I have this thing, this problem, I have this thing that I don't understand and ask. You are allowed to ask anything to a Mentor Mother without hiding anything.

Fewer MMs were observed clearly articulating confidentiality by explicitly stating that they would not share the information covered in the sessions. One of the few examples included the following reassurance: "Every problem that you have... I don't share it with anyone, I don't go around talking about it, I don't share it anywhere, even at home." Empathy and understanding, and nonjudgmental statements were also less commonly employed. In a nonjudgmental statement, the MM might convey information with a certain sensitivity: "The reason to check this virus is for in case it happens, I am not saying [it] is, if it can happen, that there is to try and protect the baby on time."

3.3 | Observed practices, by Mentor Mother

The observed practices disaggregated by MM are shown in Figure 2, and indicate significant variations by MM. All MMs had higher scores in active listening and delivery than they did in the active connecting domain; however, some MMs showed a higher proportion of active listening skills, whereas others scored higher on active delivery skills. Within specific practices, there was also considerable variation. Active connecting skills were less commonly observed and applied in different combinations. On average, MMs exhibited just over three diverse types of active connecting skills per visit. Just over one-third of visits (34.5%) employed four, five, or six types of these skills, and 12 visits (14.3%) employed one or none.

3.4 | Variation in mentor mother performance

To add a further dimension to these findings, we looked at the age, education level, and average visit duration, captured by the length of the audio recording, for each MM. Table 3 shows these variables together with MMs' performance across domains, and Table 4 presents them in a correlation matrix. These findings indicate longer average visit duration was correlated with the presence of multiple types of active connecting skills ($r = 0.81$; $p < .001$). No other variables were highly correlated.

4 | DISCUSSION

This analysis is the first of its kind to document communication practices in a rural home visiting program, and specifically in a low-resource, community-based setting. There was high fidelity of best practices for communication observed in the visits, especially with regard to active listening and delivery. MMs used a variety of techniques to gather and reflect content from their clients; they consistently delivered relevant information, and engaged their clients through dialogue, ensuring their own understanding as well as verifying clients' understanding. Core intervention skills taught in training and supported through supervisory structures center on the ability of the MM to assess her client's situation and deliver a relevant intervention. These skills were widely observed.

As an opportunity to pilot a newly devised communication checklist, the HCSI, this study also reflects key areas for further application. Over 80% of home visits showed evidence of "suggestive" language, instead of didactic, directive statements, to equip the client with the knowledge and at the same time give her space to make her own health decisions. While this figure is high, it is important to recognize that collaborative interactions encouraging client-agency are central to the MM model, and should be aspects of every visit. Our

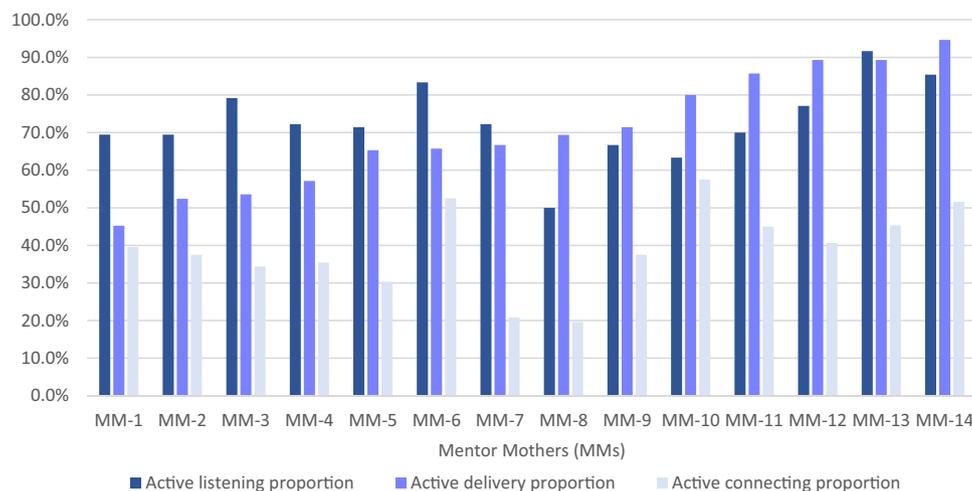


FIGURE 2 Performance by mentor mother across domains, by percentage. [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 3 Mentor Mother variables and communication domains

| MM | Age at job start date | Highest education completed (grade) | Average visit duration (mm:ss) | Active listening (proportion) | Active delivery (proportion) | Active connecting (proportion) |
|----|-----------------------|-------------------------------------|--------------------------------|-------------------------------|------------------------------|--------------------------------|
| 1 | 29.83 | 12 | 07:36 | 0.694 | 0.452 | 0.396 |
| 2 | 33.42 | 11 | 17:40 | 0.694 | 0.524 | 0.375 |
| 3 | 38.83 | 12 | 16:53 | 0.792 | 0.536 | 0.344 |
| 4 | 31.67 | 12 | 10:16 | 0.722 | 0.571 | 0.354 |
| 5 | 22.92 | 11 | 13:04 | 0.714 | 0.653 | 0.304 |
| 6 | 25.67 | 12 | 22:31 | 0.833 | 0.657 | 0.525 |
| 7 | 45.67 | 10 | 10:42 | 0.722 | 0.667 | 0.208 |
| 8 | 41.67 | 11 | 8:51 | 0.500 | 0.694 | 0.196 |
| 9 | 29.33 | 12 | 15:09 | 0.667 | 0.714 | 0.375 |
| 10 | 34.17 | 11 | 29:09 | 0.633 | 0.800 | 0.575 |
| 11 | 50.17 | 10 | 14:25 | 0.700 | 0.857 | 0.450 |
| 12 | 38.42 | 12 | 17:35 | 0.771 | 0.893 | 0.406 |
| 13 | 31.67 | 12 | 19:39 | 0.917 | 0.893 | 0.453 |
| 14 | 34.67 | 12 | 23:41 | 0.854 | 0.946 | 0.516 |

Note: Proportions shown are out of a total of 1. For each Mentor Mother at each visit, the number of strategies observed of the total available was summed, and an average of these scores was taken across all visits. These were subsequently converted to proportions.

initial exploration indicates that this method of observation can be used to comprehensively highlight the strengths and limitations of implementer skills in communication and program delivery.

While active listening and active delivery were consistently well-documented, active connecting was less so. Our findings indicate that, beyond core informational and conversational strategies, more complex rhetorical strategies were not readily observed across all MMs, or within all visits. Soliciting questions, using questions to probe understanding, reflecting feelings and concerns, and active connecting skills were unevenly distributed across visits and MMs. Regarding active connecting skills, most MMs spoke about continuing visits and demonstrated general rapport-building; however, fewer explicitly articulated confidentiality, empathic statements, or offered anecdotes or similar experiences to relate to clients.

A necessary next step is distilling whether or not these less-frequently observed practices are “central” features of the intervention, or if their presence adds to the value of the intervention. Existing evidence shows that communication practices and styles form a crucial basis for building trusting clinical relationships, which

can affect health service delivery and access. In periurban settings in South Africa, mistrust between clients and health providers and unclear expectations negatively influenced otherwise accessible and affordable care (Scheffler, Visagie, & Schneider, 2015). Within home visiting programs, in particular, research has shown that relationship quality has a significant bearing on participant experience of the program (Bain, Dawson, Esterhuizen, Frost, & Pininski, 2017). Furthermore, home visitor conscientiousness and home visitor–client compatibility have been found to strongly influence relationship quality and uptake (Brookes et al., 2006). While the contexts in which health-focused interventions are implemented vary widely, the literature suggests that certain core principles of good communication between provider and recipient are standard across settings (Rollnick, Miller, Butler, & Aloia, 2008; Roter, 2000a). The HCSI may be overly inclusive—for example, not every visit may require an articulation of confidentiality. However, these data emphasize the importance of selecting core communication strategies to train and support MMs to employ to ensure a high-fidelity, standard set of expectations.

TABLE 4 Correlation between communication domains and Mentor Mother information

| | Age | Education | Average visit duration | Active listening | Active delivery | Active connecting |
|------------------------|-------|-----------|------------------------|------------------|-----------------|-------------------|
| Age | 1.00 | | | | | |
| Education | −0.61 | 1.00 | | | | |
| Average visit duration | −0.18 | 0.18 | 1.00 | | | |
| Active listening | −0.24 | 0.45 | 0.40 | 1.00 | | |
| Active delivery | 0.27 | −0.06 | 0.52* | 0.31 | 1.00 | |
| Active connecting | −0.27 | 0.34 | 0.81** | 0.47 | 0.42 | 1.00 |

** $p < .001$.

* $p = .05$.

There are a few possible reasons for our finding that active connecting skills were less commonly employed. In examining variation between MMs, different personal styles predominated. Some MMs may master these social skills naturally, whereas others struggle. Individual characteristics, diverse personalities, and differential motivation must be accounted for in interventions like Enable that rely so heavily on interpersonal engagement and trust. There is also some evidence indicating that maintaining professional boundaries can be a challenge for community-based health workers, who are part of the local community yet are set apart through their training and employment (Kemp & Henderson, 2012). Future work with this sample will explore these challenges in a more nuanced way.

Furthermore, MMs may decide, or be asked by supervisors, to prioritize content over communication style, especially when they have other clients to visit. This decision might lead to the MM covering content in clear, explicit ways to ensure knowledge transfer and efficiency—while simultaneously undervaluing skills related to active connecting that might facilitate relationship building, as these skills are less quantifiable. Research about empathic communication in clinical and therapeutic relationships finds that building relationships requires “emotional labor” on the part of the practitioner, which is essential but takes time and effort to cultivate (Larson & Yao, 2005); thus, this observation may be a function of time and workload.

This last point speaks directly to an additional finding of ours that MMs whose average observed visits were longer were also those with higher average scores on active connecting skills. While a range of factors might predict higher scores on active connecting skills—including communication fluency, closeness with the client, and command of intervention content—it is notable that conducting longer visits may encourage MMs to develop and engage a wider range of such interpersonal skills. Longer visits may also be a sign of stronger relationships, where MMs may be inclined to spend a longer time with particular clients. It is important to recognize, however, that long visits may not always be possible, and more work is needed to understand barriers to connecting with clients among CHWs. Upcoming analyses from this project will reflect on how MMs articulate in their own words the process of connecting to clients and building relationships, which may not be fully captured in these visit recordings. Furthermore, more work is needed to ascertain the effect of these softer skillsets on client behavior change and intended health outcomes.

4.1 | Implications for practice

The findings from this checklist analysis, across the MMs, observed, show strengths in skills that are easy to convey in a training set—such as using questions to gather information—and shortcomings in less tangible skills. Two core areas that might be most directly served by these findings are training and supervision. Adhering to a traditional, didactic training format has been shown to inhibit

critical thinking skills and learning (Glenton et al., 2013). Supervision strategies must be sensitive and responsive to differences in the dosage, quality, and style of support given (Rotheram-Fuller et al., 2017). As such, extra opportunities for training and support, as well as differential support, should ideally be accessible and built into program models. It is evident that a number of this program’s MMs struggled with some of the more complex interpersonal skills on which they were assessed; improving fluency in delivery might most easily happen through initial and/or ongoing training (Duthie, Hahn, Philippi, & Sanchez, 2012). Employing the HCSI in a training setting—as a means of evaluating skills learned or structuring communication-based sessions—may be practical and valuable. The HCSI may also offer opportunities for supervisors to tailor feedback, or for funders to monitor program implementation around skills translation and use.

The Enable program has adapted more hands-on supportive supervision strategies for MMs whose case folders show problems with delivering intervention content, pairing them with high-performing colleagues who can provide guidance and support. However, Enable and other programs might benefit from more closely examining implementer competence in action, and by adjusting ongoing training and supervision efforts to speak to specific, measurable needs in this area. In considering ways to increase fidelity, it is also important for program models to set up realistic expectations for CHWs that accomplish program goals while also addressing client needs. While a command of intervention content is key, implementers’ communication skills have a central role in how clients respond to and engage with an intervention.

4.2 | A practical method of data collection

The method we piloted also has implications for use in other community settings. Client-home visitor interactions have been assessed by directly observing home visits (Peterson et al., 2007), as well as coding video observations (Roggman et al., 2016). However, few studies from low- and middle-income countries have employed these kinds of systematic methods in-home visit settings, in part due to logistical barriers. Our decision to use audio recordings addressed some of these concerns; using a mode of data capture that was portable and unobtrusive was essential, and we were able to smoothly integrate our data collection efforts with the typical delivery of the intervention. Although audio recordings do have some disadvantages, for our purposes they were a feasible way to investigate what took place in the home setting (Brownson, 2017). Client-provider communication has been more widely documented and analyzed in clinical settings in both high-income (George, Manuel, Gandy-Guedes, McCray, & Negatu, 2016) and low-income country settings (Abdel-Tawab & Roter, 2002; Jennings, Yebadokpo, Affo, Agbogbe, & Tankoano, 2011; Kilian et al., 2015; Kim, Kols, Mwarogo, & Awasum, 2000; Watermeyer & Penn, 2009). However, our research shows that client-provider communication skills can be

measured in programmatic settings at the community level, where health-related consultations may exist outside of a traditional clinical setting due to resource constraints and overburdened health systems.

4.3 | Limitations

It is important to note some limitations of this analysis. As these home visit recordings are “snapshots” of the long-term client-MM relationship—taken at a particular place in time, and not observing the client-MM interaction in its entirety—it is not possible to ascertain case history or a full sense of the relationship’s continuity beyond the sampled sessions. The longevity of a relationship may contribute to the building of trust and improve communication, and we recognize the potential for more contributing factors that may affect our findings, and that could be added to future iterations of this work. There is also the potential for desirability bias if the MM decides to perform differently or better than she usually would due to an external presence; however, we aimed for our method of observation to be as discreet as possible (Breitenstein et al., 2010). Our use of audio transcripts instead of video recordings, selected for the reasons detailed above, nonetheless glosses over nonverbal communication cues that might invite a different perspective on the relationship or communication skills employed. Using transcripts also poses a complicating factor for working across a language barrier; even for coders who are familiar with Xhosa culture, and who consulted Xhosa colleagues for further questions or clarifications about meaning and translation, there are still potential limits to how conversation is phrased, a topic is framed, or an exchange understood (Xian, 2008). An upcoming replication of the HCSI plans to utilize Xhosa-speaking research assistants to complete the checklist using audio recordings of home visits that will then be quality-checked, reducing the resources required for transcriptions and translations. Finally, although we developed the HCSI based on “best practices” of communication and program-specific training skills, it is possible that other cultural, social, or contextual realities may influence communication styles. Further iterations of the HCSI might solicit perspectives from supervisors and CHWs to integrate their views or to tailor this checklist to suit programmatic needs more specifically. Nevertheless, this analysis establishes important formative work in the development of a checklist for analyzing communication strategies and affirms the viability of more granular, detailed modes of implementation research at a household level.

5 | CONCLUSION

Home visit settings, while often overlooked, are important sites of program delivery, especially as community health programs expand. The findings presented here from the newly-piloted HCSI offer novel insights for researchers and practitioners alike about how to approach monitoring and fidelity in these settings, and how capturing communication strategies can be a specific and measurable way to gauge success in program delivery at a more detailed level.

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CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest.

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