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Molly Linabarger Date

A qualitative process evaluation of maternal and baby
WASH and nutrition project using a Care Group approach in western Kenya

By

Molly Linabarger
Degree to be awarded: MPH

Hubert Department of Global Health

_____

Matthew C. Freeman
Committee Chair

_____

Anna Ellis
Committee Member

A qualitative process evaluation of maternal and baby WASH and nutrition project using a Care Group approach in western Kenya

By

Molly Linabarger
Bachelor of Science
Duke University
2015

Thesis Committee Chair: Matthew C. Freeman, PhD MPH

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Master of Public Health
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2018

Abstract

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Nearly 6 million children under the age of 5 die each year and many of these deaths could be prevented by low-cost or no-cost behaviors. Interventions to improve health practices have been found to have varying levels of effectiveness in short- and long-term behavior change and maintenance. One commonly used approach designed to stimulate long-term behavior change is the Care Group model. By training local volunteers to facilitate behavior change among neighbors, the Care Group model creates a multiplying effect allowing messages to reach more households than a traditional community health worker. As the use of the Care Group model increases, understanding factors that affect its implementation can improve delivery of behavior change messages to project beneficiaries. However, few studies have been done to determine what level of fidelity projects using the Care Group model have to their intended delivery. We conducted a qualitative, theoretically-driven, cross-sectional process evaluation of an intervention that used a Care Group model in western Kenya to examine the fidelity, dose delivered, dose received, and context of the project through project document review, in-depth interviews, and observations. Communication of messages did not follow the intended timeline or order. Topics delivered did not match the work plan. All observed meetings missed some messages and many did not include specific behavior change components. Meetings and home visits were shorter than designed. Some care group volunteers were perceived by project staff to have poor facilitation skills. The implementation of the project was affected by low acceptability of a messages-only approach. Project staff and volunteers made some adaptations to the local context. Proper training, tools, and a thorough monitoring plan are recommendations for projects using the Care Group model. The applicability of the project in areas with intervention burnout should be determined before implementation at scale.

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I am so grateful for Emily Awino, Richard Muga, and Lily Lukorito, who helped me navigate life and work in Kenya. Thank you to all of the participants in this study, including INGO staff, implementing partners, CHVs, CGVs, and NW, who took their valuable time to provide their insight to make this project possible.

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CHAPTER I: Introduction

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One commonly used approach designed to promote hygiene and nutrition, among other behaviors is the Care Group model. First developed by World Relief in 1995, the Care Group model uses a modified training-of-trainers system to deliver behavior change messaging and problem solving activities to beneficiaries by recruiting and training local volunteers called Care Group volunteers (CGVs).[16] In a traditional community health worker model, one community health workers (CHW) may be responsible for many households, resulting in infrequent or no visits to some households. By training local volunteers to facilitate behavior change with their neighbors, the Care Group model in theory creates a multiplying effect that allows messages to reach more households than a traditional community health worker. Messages and knowledge from one training of local CGVs can be passed on to each household in the neighbor women group, resulting in greater reach from one single training. This model can be used in conjunction

with CHWs, expanding upon the network that currently exists in many countries. The model is designed to leverage peer-to-peer health promotion to support behavior change and the formation of new community norms.[16]

Projects implemented by 25 organizations – including PLAN International, Catholic Relief Services, CARE, and Curamericas – in 28 countries have utilized the Care Group model to deliver messages in a cost-effective, community-based manner. These projects have reached over 1.3 million households by 106,000 CGVs.[17] An evaluation of 13 projects utilizing the Care Group approach in 8 countries estimated a decline in the under-5 mortality rate of 12-48% associated with the project.[18] Near Cochabamba, Bolivia, behavioral messaging through the Care Group approach reduced self-reported 2-week diarrheal prevalence to 25% of baseline levels compared to a randomly allocated control group.[19]

A Technical Advisory Group on Care Groups determined that "when implemented well" the Care Group model is highly effective and cost-effective, though the term "well" is not defined.[20] Perry and colleagues[17] outlined what they deem "Essential" and "Suggested Additional" criteria for optimal functioning of the Care Group model. These criteria, while helpful, focus on the design of the program rather than the fidelity of its implementation. The model relies on information transmission through various disseminators, creating opportunities for misunderstanding, misinterpretation, or dilution of information. These challenges have been identified in other training of trainer projects,[21-23] but not yet in Care Group projects.

As the use of the Care Group and other community-based care network models increase, it is important to rigorously track their fidelity to both understand potential challenges and identify ways to improve the intervention modality across different contexts; however published fidelity assessments have been limited.[23] In a study of the fidelity of a training-of-trainers substance abuse prevention project, content was diluted when disseminated by trainers, with an average content fidelity of lessons of 72% (range = 17% to 100%).[21] A review of United Way programs, which rely heavily on training-of-trainers style programming, found that implementers had overestimated the ability of their participants to implement the trainings at the level at which they were trained.[22]

Organizations and governments are exploring the idea of incorporating projects using the Care Group approach into existing government programs to provide a sustainable platform for program delivery.[17,24] As agencies consider the large cost and time commitment of implementing this model at scale, understanding how the model is delivered can provide opportunities to improve the implementation and in turn the effectiveness of the model.

A process evaluation is an important programmatic tool that is used to test a program's fidelity to its intended delivery.[25] Process evaluations allow implementers to see what happened during the project, allowing for a better understanding of what is currently being done and what needs to be improved on to improve the effectiveness of the project. We conducted a qualitative, cross-sectional process evaluation of an intervention that used a Care Group model in western Kenya following the approach of Saunders, Evans, Joshi [25] to examine the fidelity, dose delivered, dose

received, and context. In this article, we discuss the results of this process evaluation and their implications on the use of the Care Group model.

CHAPTER II: MANUSCRIPT

Contribution of the student

Molly developed research protocol and data collection plan, including research question and 11 data collection tools; conducted 12 in-depth interviews with implementing partners and Ministry of Health staff; collaborated with local implementing partners to mobilize over 200 participants in 4 communities; trained 7 local research assistants in qualitative methods, research ethics, transcription, and translation; managed 2 distinct teams of local research assistants and a budget of $6,000; protected and organized data from 52 data activities through data collection, transcription, translation, and analysis; created data analysis plan and conducted thematic analysis using MAXQDA software; and wrote the manuscript.

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A qualitative process evaluation of maternal and baby WASH and nutrition project using a Care Group approach in western Kenya

Molly Linabarger, BS,[1] Anna Ellis, MDP,[2] Emily Awino, BA,[2] Bethany Caruso, PhD MPH,[2] Matthew C. Freeman PhD MPH[1,2]

[1]Hubert Department of Global Health, Rollins School of Public Health, Emory University
[2]Department of Environmental Health, Rollins School of Public Health, Emory University

Abstract

Nearly 6 million children under the age of 5 die each year and many of these deaths could be prevented by low-cost or no-cost behaviors. Interventions to improve health practices have been found to have varying levels of effectiveness in short- and long-term behavior change and maintenance. One commonly used approach designed to stimulate long-term behavior change is the Care Group model. By training local volunteers to facilitate behavior change among neighbors, the Care Group model creates a multiplying effect allowing messages to reach more households than a traditional community health worker. As the use of the Care Group model increases, understanding factors that affect its implementation can improve delivery of behavior change messages to project beneficiaries. However, few studies have been done to determine what level of fidelity projects using the Care Group model have to their intended delivery. We conducted a qualitative, theoretically-driven, cross-sectional process evaluation of an intervention that used a Care Group model in western Kenya to examine the fidelity, dose delivered, dose received, and context of the project through project document review, in-depth interviews, and observations. Communication of messages did not follow the intended timeline or order. Topics delivered did not match the work plan. All observed meetings missed some messages and many did not include specific behavior change components. Meetings and home visits were shorter than designed. Some care group volunteers were perceived by project staff to have poor facilitation skills. The implementation of the project was affected by low acceptability of a messages-only approach. Project staff and volunteers made some adaptations to the local context. Proper training, tools, and a thorough monitoring plan are recommendations for projects using the Care Group model. The applicability of the project in areas with intervention burnout should be determined before implementation at scale.

Introduction

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A process evaluation is an important programmatic tool that is used to test a program's fidelity to its intended delivery.[25] Process evaluations allow implementers to see what happened during the project, allowing for a better understanding of what is currently being done and what needs to be improved on to improve the effectiveness of the project. We conducted a qualitative, cross-sectional process evaluation of an intervention that used a Care Group model in western Kenya following the approach of Saunders, Evans, Joshi [25] to examine the fidelity, dose delivered, dose

received, and context. In this article, we discuss the results of this process evaluation and their implications on the use of the Care Group model.

Methods

We conducted a process evaluation of an intervention developed by a large, international non-governmental organization (INGO) to prevent stunting among children under the age of 2 (CU2) in Kenya. For purposes of anonymity of the study site and participants, the INGO will hereby be referred to as "INGO" and the project will be referred to as "the project." The evaluation utilized the syntax set forth by Saunders et al. [25] We examined four process components - context, fidelity, dose delivered, and dose received - based on their relevance to the project and the scope of the evaluation. The components were given evaluation-specific definitions and research questions for each component were developed (Table 1).

Intervention and Setting

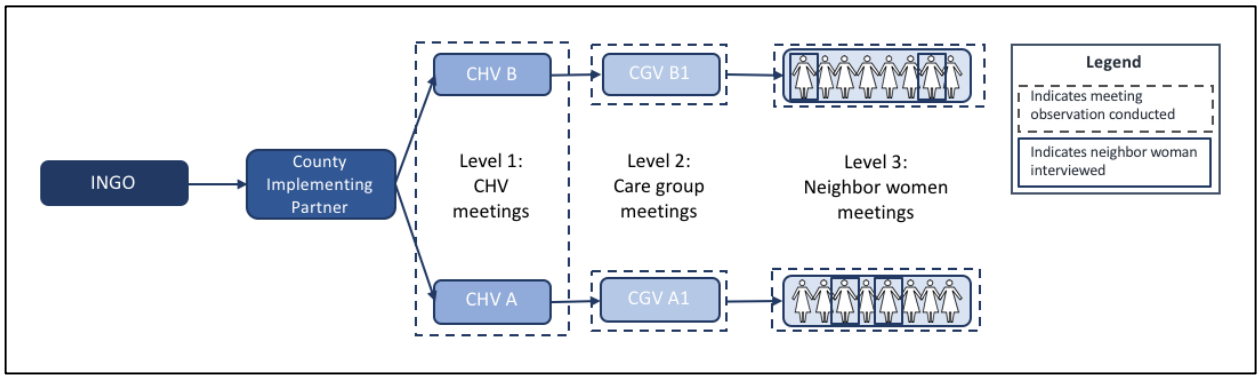
The project targeted 2,640 pregnant mothers and caregivers of CU2 with the goal that CU2 in Kenya thrived in a sustainable culture of care and support. Building upon a previous project, the project intended to enhance capacity of pregnant women and mothers of CU2 through the Care Group model and build capacity in local health care centers. The Care Group model was used to facilitate behavior change related to early stimulation, positive parenting, water, sanitation, and hygiene (WASH), and nutrition in pregnant women, lactating women, and women with CU2. The project also instituted a referral system to health facilities and equipped and supported operations of early childhood development spaces in healthcare facilities; these activities are outside the scope of this process evaluation.

Component	Definition	Research question
Fidelity	Extent to which the project was implemented as planned	• Was the project intervention being delivered as originally planned? If not, what factors led to implementation changes?
Dose delivered	How delivery of intervention activities compared to theory of change and work plans	• Was the delivery complete according to the theory of change and work plans?
Dose received	How and what messages were delivered and received by different levels of the project	• What messages were delivered and received by different stakeholders? • How were these messages delivered and received by different stakeholders? • How did those messages change as information flows between varying levels of project implementation?
Context	Aspects of the environment that may have influenced intervention implementation or outcomes	• How did the local context affect the implementation of the program? • How were messages and program activities tailored for local context?

Table 1. Definition of evaluation components and research questions

In their adaptation of the Care Group model (Figure 1 and Table 2), the INGO engaged two local implementing partners. Implementing partner project officers formed neighbor groups of 8-15 women living in close proximity to each other (neighbor women; NW). Each neighbor group chose one mother to serve as the leader of their group, also known as a CGV. CGVs were responsible for training other NW in monthly meetings (NW meetings) as well as reinforcing key messages through home visits at the NWs' homes. CGVs met in so-called care groups to receive training from community health volunteers (CHVs). CHVs received training from the project officers and from Ministry of Health (MoH)-employed community health assistants (CHAs) (Figure 1). Thus, in summary, there are three distinct levels of information transmission in this

Figure 1. Structure of intervention delivery and study sampling



model that will be referred to as Levels 1-3 for ease of understanding. A description of the levels can be found in Figure 1 and Table 2. In addition, a community focal person from each county was identified as a contact person within the MOH and to support the implementation of the project through feedback and supervision. Training was given by implementing partners to CHVs for 3 days prior to the start of the project using flipcharts developed by the INGO. Training consisted of didactic modules covering all messages from the flipcharts. CGVs were supposed to be trained monthly, covering only the information that they will relay to their NW at the next meeting. CHVs and CGVs were given flipcharts to use during training.

The project was implemented in two counties located in rural western Kenya bordering Lake Victoria. Both countries have been greatly affected by the HIV epidemic; HIV prevalence in Homa Bay and Migori counties are 26.0% and 14.9%, respectively, much higher than the national average of 5.9%. Homa Bay County has the highest prevalence of HIV in Kenya: 10.4% of people living with HIV in Kenya live in Homa Bay County. A high burden of HIV led to high numbers of orphans in these counties, over 13,000 total.[26]

Level	*Meeting title*	*Trainer*	*Trainees*
1	CHV meeting	Implementing partner staff	CHVs
2	Care group meeting	CHV	CGVs
3	NW meeting	CGV	NW

Table 2. Description of meeting names, trainers, and trainees

Data Collection

Qualitative research methods, including review of project documents, in-depth interviews (IDIs), and observations were used to gain detailed, nuanced information about the implementation of project programming (Table 3). For each component of the process evaluation (fidelity, dose delivered, dose received, and fidelity), potential data sources were identified.

Key project documents were reviewed by the research team to define "complete" delivery of the project. Proposal documents, theory of change documents, training reports, and quality improvement verification checklist (QIVC) forms were used to determine ideal project delivery. QIVC forms were adapted by INGO staff to be used during supportive supervision checks in which INGO staff, implementing partner staff, or CHVs oversaw meetings or home visits conducted by CHVs or CGVs to ensure compliance with project guidelines.[16] Activity schedules were used to determine the intended schedule of different project activities.

IDIs were conducted with project stakeholders to determine 1) what complete delivery of the project would consist of; 2) the role of the interviewee in project delivery; 3) strengths and weaknesses of project delivery; 4) factors both internal and external that may have influenced strategy implementation; and 5) the acceptability of the project to the interviewee.

IDIs were conducted with INGO, implementing partner, and MOH staff, as well as CHVs, CGVs, and neighbor women (Table 3). Staff were chosen purposively based on their involvement with the programming. In order to follow the transmission of information, representatives from four pathways of project delivery were interviewed. Four CHVs were interviewed after being purposively selected based on county and catchment area. One CGV supervised by each of the CHVs were interviewed after being chosen purposively based on care group and distance from local health facility. Two neighbor women from each CGVs' neighbor women group were chosen purposively based on age and gender of NW's child and interviewed. Interviews were conducted by the researcher in English when possible and by trained research assistants in the local language. In total, 30 IDIs were conducted.

Observations were conducted to document the mode of training delivery, the content delivered in trainings, the interaction between the trainers and trainees, the presence and use of training materials, and the attendance of group members. In addition, observations allowed for the tracking of information transmission from project officers to project beneficiaries through the Care Group model. Observations were conducted by 1-2 trained research assistants at CHV meetings (Level 1; 1 meeting in each county), care group meetings (Level 2; 2 meetings in each county), and NW meetings (Level 3; 2 groups in each county observed twice and one additional group observed once). The observed meetings corresponded to the CHVs, CGVs, and neighbor women who participated in IDIs, with an additional NW group observed for added diversity. Project-specific QIVC forms and study-specific observation tools were used to record information during observations. QIVCs were used to collect information related to the structure (what did the meeting leader do?) and facilitation of the meetings (how did the meeting leader do

it?). Study-specific observation tools were used to collect information related to the content of the training (what did the meeting leader say or demonstrate?) because that information was not included in the QIVCs. In total, 15 observations were conducted.

Data Analysis

IDIs were transcribed in the language in which they were conducted. IDIs in the local language were then translated into English. Research assistants used their completed observation forms to write observation reports. Transcripts and observation reports were analyzed in MAXQDA 12 software using thematic analysis. A subset of transcripts was read to identify key emergent themes and identify potential codes. Then, an initial codebook was developed using key domains of the interview guides, four identified evaluation components (dose delivered, dose received, fidelity, and context), related topics, and key players. This codebook was updated iteratively throughout the analysis process as new themes emerged. Transcripts and observation reports were coded. Observation reports were also compared to QIVC documents and the English flipchart in order to determine fidelity to proposed meetings. Interpretive analysis was used to explore the strengths and weaknesses in the implementation of the project focusing on the four evaluation components.

Method	*Population*	*Number of activities*
In-depth interviews	INGO staff	4
	Implementing partner staff	6
	Community focal persons	2
	Community health extension workers (CHEWs)	2
	Community health volunteers (CHVs)	4
	Care Group volunteers (CGVs)	4
	Neighbor women (NW)	8
Observations	CHV meetings	2
	Care group meetings	4
	Neighbor women group meetings	9
TOTAL		45

Table 3. Summary of activities

Ethical Approval

All research activities were reviewed and approved by the Great Lakes University of Kenya Ethical Review Board; National Commission for Science, Technology and Innovation Review Board; and Emory University Institutional Review Board (#IRB00090057). All participants provided written informed consent and received an additional information sheet for their reference. Participants who traveled to an interview location received a travel reimbursement for incurred costs.

Results

The results generated by this study by the project records review, in-depth interviews, and observations are presented based on their evaluation component (fidelity, dose delivered, dose received, and context).

Fidelity

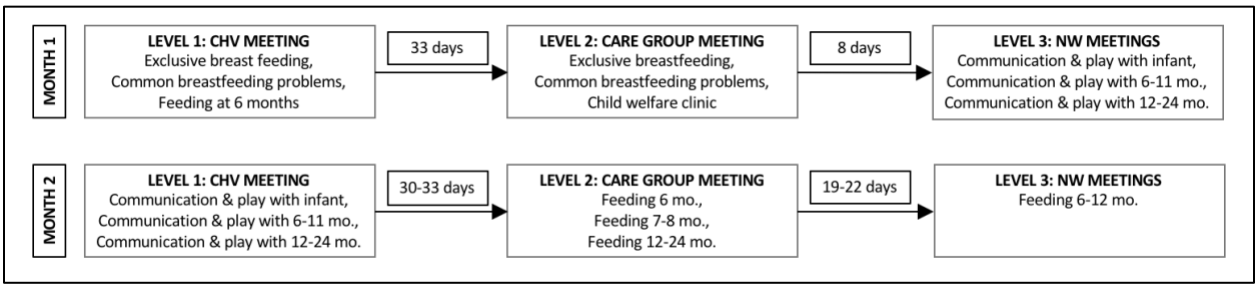
Compared to project documents, the fidelity – the extent to which the project was implemented as planned – was determined to be inconsistent through IDIs and observations, especially in

relation to the truncated timeline of the project, the order of CHV and care group meetings, and the topics covered at meetings. Many components of the meetings were delivered as intended, but most CGVs failed to include behavior change activities in neighbor women meetings.

This was the first Care Group project the INGO had implemented in this context, and though the INGO had previously implemented the Care Group model in Malawi, project staff experienced challenges in adapting the Care Group model to work in Kenya. After women were recruited into the project, "getting the groups to function was an issue," shared one project officer; project staff had to figure out how to adapt the Care Group model to Kenya: how to group NW into groups and select CGVs. This delayed project implementation by over six months.

In a traditional Care Group model, master trainers/promoters (in this case, CHVs) receive training on topics (Level 1), consisting of several messages, and subsequently train the trainers (in this case, CGVs) on the those topics (Level 2).[16] This timeline allows for review of the information that had been presented to CHVs at their initial training or quarterly refresher trainings to improve correct and complete delivery of messages. In this adaptation of the Care Group model, the implementing partners prioritized the order of meetings to facilitate their reporting to the INGO. Thus, the CHVs would be trained on topic A one month before delivering it to the CGVs. Following the CGV meeting on topic A, CHVs would deliver their monthly reports to the implementing partners and be trained on topic B. This deviation led to breaks of a full month between CHV training on a topic and when they delivered it to the CGVs leading to inevitable loss of message fidelity (Figure 2).

Figure 2. Topics covered at CHV, care group, and NW meetings in Homa Bay County, April – July



The topics covered at different levels of the care group structure were not consistent. Care Group projects are designed so that topics delivered to the CHVs (Level 1) are then delivered to the CGVs (Level 2) and the same topics are delivered to the NW (Level 3). However, based on observations and recall from interviews with CHVs, CGVs, and NW, there was little consistency between the topics discussed at CHV meetings, care group meetings, and neighbor women meetings (Figure 2). For example, in Homa Bay County, the April CHV meeting (Level 1) included training on exclusive breastfeeding, common breastfeeding problems, and feeding at 6 months. At the corresponding care group meeting (Level 2), the CHVs delivered messages on exclusive breastfeeding and common breastfeeding problems, but covered child welfare clinics instead of feeding at 6 months. Then, at the corresponding NW meetings (Level 3), CGVs delivered messages on communication and play with infants and children 6-24 months of age, completely different topics than those delivered at the CHV and care group meetings. In Migori county in July, NW meetings were scheduled to deliver messages on child nutrition for 9-11-month olds and feeding a child during and after an illness. However, of the two observed NW meetings in Migori County in July, one covered iron and folic acid and the other covered communication and play with children 0-6 months of age, exclusive breastfeeding, and common breastfeeding problems.

Observations were also used to understand how the messages were being delivered. QIVC forms, provided by the INGO, were used to assess the fidelity of the structure of meetings. CHVs and

CGVs consistently followed many steps identified on the QIVCs in order to deliver quality meetings, including having participants sit in a circle, asking questions that were provided on the flipchart, and performing demonstrations of behaviors (e.g., how to position a child to breastfeed).

Although some steps were followed, key behavior change activities were often not included during meetings. Per the design of the project, at the end of each NW meeting, CGVs were supposed to ask NW to make a commitment to practicing a new behavior related to the messaging from that month's session. At the next session, the CGV would ask the NW if she had followed through with her commitment, if she had experienced any barriers to practicing the behavior, and brainstorm solutions to any problems mentioned. CGVs asked members to make a new commitment in fewer than half (four of nine) of the observed NW meetings, asked about commitments made at previous meetings at only two meetings, and asked about barriers to at only a single meeting.

Per project design, care groups should consist of 3-9 CGVs. One CHV was responsible for multiple care groups. Out of the four observed care group meetings, those held by the 2 CHVs observed in Migori County were held as intended (3 and 6 CGVs). However, both CHVs in Homa Bay County held their meetings with all of the CGVs they were responsible for, instead of separate meetings with each care group. This resulted in group meetings of 16 and 21 CGVs, a large enough size to potentially prohibit the ability of CHVs to give personal attention to each CGV.

Dose delivered

The dose delivered by the project was limited by the occurrence and length of meetings and home visits. The project was expected to hold one CHV meeting (Level 1), care group meeting (Level 2), and NW meeting (Level 3) each month, as well as one home visit to each NW by CGVs each month. We observed meetings of all levels (CHV, care group, and NW group) and triangulated and expanded on observations through interviews.

NW meetings must be held regularly, and although some groups turned in monitoring documents stating that they were meeting regularly, the overall number of meetings recorded may not have been indicative of the actual rates. One CGV noted that she has failed to meet with her NW in the past and several care group meetings that were scheduled to be observed did not happen. All researcher-observed and some recalled meetings and home visits ran for less time than recommended by key Care Group resources and implementing partner staff. World Relief Care Group guidelines state that care group meetings should last "up to two hours" in order to have sufficient time to complete all of the necessary tasks[27] and the Food Security and Nutrition Network Social and Behavioral Change Task Force recommend that care group and NW meetings last between one to two hours and home visits last one hour.[16] Implementing partner staff said that all meetings should last one hour, although this information was not stated explicitly in any project documents nor consistently understood by CHVs, CGVs, and even INGO staff. One care group meeting observed in Migori County lasted only 40 minutes and covered only one topic, instead of three as designed. Some observed NW meetings were also short, with two lasting only 30 minutes and one lasting 40 minutes. One CHV described a 40-minute NW meeting as taking "a long time." Some home visits were reported to be much shorter

than project guidelines. One NW in Homa Hills said that her most recent home visit lasted "at most ten minutes." She explained that the CGV "wants to be fast."

Dose received

The dose received of the project - how and what messages were delivered and received by different levels of the project – was low due to the observed failure to deliver messages and reported and observed quality of facilitation of meetings. The dose received of beneficiaries was affected by their acceptance of the Care Group approach. Implementing partner staff, CHVs, and CGVs reported feeling empowered from the project trainings and grateful for the opportunities presented to them. CHVs and CGVs have a clear understanding of the Care Group model and their roles.

Direct observation of CHV, care group, and NW meetings allowed researchers to understand which messages were being delivered by different stakeholders and compare these to which messages should have been delivered as designated in the project work plan and training materials. In every observed meeting, some of the key messages that should have been delivered were not included, with some meetings missing many messages. Commonly missing from observed meetings were specific details (e.g., number of recommended feeding times per day); specific examples (e.g., mentioning that children should eat five food groups a day, but not naming the food groups); and a focus on positive parenting (e.g., always positively encourage your child to eat). This issue was not unique to meetings facilitated by CGVs (Level 3); information was also omitted by implementing partners (Level 1) and CHVs (Level 2) during the meetings they facilitated. An example of the messages that should have been covered based on

the project work plan and training materials and those that were covered in a care group and NW meeting can be found in Table 4.

Although we originally intended to track message delivery through the various levels, this was not possible due to the different topics being covered at different levels within the Care Group model (see Fidelity results). We were able to compare the messages delivered at one care group meeting (Level 2) and the corresponding NW meeting (Level 3) in Homa Bay County on feeding between 6-24 months (Table 4). According to the delivery schedule and training materials, facilitators at both meetings failed to deliver some messages. On one topic (feeding at six months), nine out of 13 messages were delivered at the care group meeting (Level 2) and four out of 13 messages were delivered at the NW meeting (Level 3). All four messages covered at the NW meeting had been covered at the care group meeting.

Supervision of NW meetings by implementing partner staff, MOH community focal persons, and CHVs led to identification of perceived low facilitation skills among CGVs. One staff member from an implementing partner stated, "sometimes (CGVs) have not actually done this work before, so they need to be capacity built on facilitation skill, how to communicate, how to change your tones when you're doing the facilitation, how to maybe handle women because people have different characters." If a CGV has poor facilitation and communication skills, an INGO staff member explained "that means the kind of messaging they are giving the NW at the group and also at the household could be faulty, or it could be half cooked."

One key facilitation skill as identified by implementing partners during in-depth interviews is the ability to confidently and effectively use the provided training material, a flipchart. Using the flipchart can give CGVs confidence as leaders; as one CGV noted "I go with that book and when I am training I flip the pages as I read…so it shows that is the truth." However, some CGVs felt that in order to be perceived as a leader, they could not refer to the flipchart during their sessions. By referring to the flipchart, as recommended by project staff, CGVs believed that they would be showing a lack of expertise over the topics. In an interview, one CGV expressed low confidence in her ability to be accepted as a leader because she was much younger than her NW, a feeling she believed to be exacerbated by the close relationship that she shared with many of the NW.

NW reported that they felt disconnected from the project because they were only interacting with community members, not interacting with implementing project staff. They believed that interactions with INGO and implementing partner staff (project staff that are not community members) gave greater credibility to the project than local volunteers.

Implementing partners, CHVs, and CGVs reported that they were grateful for the opportunities to learn provided by the INGO and implementing partner staff. As one implementing partner stated, "the something that I can say is that [the INGO] has been very much capacity builders…We all have [the messages] and it helps us very much." A CHV in Homa Bay county said that the implementing partner has "taken us to many trainings." CGVs have been empowered to feel like leaders within their community.

CHVs and CGVs have a clear understanding of the structure of the Care Group model and their roles within the model. One CHV volunteer had this description of the benefits of peer-to-peer interaction that occurs at NW meetings: "when they meet they put ideas together...she will get another woman who will help solve their problem…that what is disturbing me my other women will help me so that I can be well." CGVs understand that they should act as role models within their community, as one CGV puts it: "...the trainer said that we should not just train the neighbor women and forget to practice the same ourselves. You should start practicing it yourself before going outside your home."

Context

The local context influenced the implementation of the project, most notably through the local financial environment. Project staff and beneficiaries adapted the implementation of the project to the local context in a variety of ways.

NW and their families believed that projects should provide some form of monetary or material benefit. Using an approach that focused on messages, providing no monetary or material benefit, the project faced many challenges in gaining community acceptance. Although project officers had explained the implementation strategy to NW before they registered, interviewed NW believed that they would eventually receive monetary or material benefit from the project, as they had in past experiences with other organizations and former and concurrent projects run by the INGO. Some NW prioritized attending meetings of other organizations or working in their own or others' fields, opportunities where they received monetary or material benefit. As one CGV in Migori County explained, "[A NW] says that she has got some charcoal which she has

prepared to take to ((town name)) tomorrow in order for her children to eat something…you cannot force someone to come to the group. And then when she comes from the group her children are going to stay without taking food."

Some CGVs made alterations to the project structure in order to increase NW acceptability and attendance at meetings. In order to decrease pressure on women who feel that they could not take away large amounts of time from other responsibilities to attend meetings where they do not receive monetary or material benefit, some NW groups met weekly or twice a month for shorter periods of time. Group fundraising activities were also used to incentivize NW attendance at meetings. So-called "merry-go-rounds" are systems by which each member of the group contributes some small, agreed-upon amount of money at each meeting and the sum of everyone's contributions is given to 1-2 pre-determined individuals for their own discretionary spending. This strategy incentivized NW attendance at meetings by increasing group cohesion and creating financial motivation to attend.

The INGO and implementing partners adapted the project to the local context during development and implementation of the project using formative research, detailed translation, and including other family members in the project. The INGO conducted formative research to determine baseline practices of desired behaviors. This informed which lessons should be incorporated into the flipchart. The flipchart was first developed in English and then translated by implementing partner staff into Luo, the local language. During translation, implementing partner staff highlighted the differences in local dialect between the two counties and produced individual flipcharts for each county that are tailored to each local dialect.

The INGO and implementing partners were aware of the large role that families (specifically husbands and mothers-in-law) would play in CGV and NW involvement in the project. As one CGV explained, “When [a CGV] goes to teach, their husbands want them to do other jobs at home.” Mothers-in-law could provide necessary childcare so that NW could attend meetings, as well as provide emotional support promoting or inhibiting NW attendance at meetings. Recognizing the critical roles of family members, implementing partners held “influential group meetings” where selected husbands, mothers-in-law and NW were invited to learn about the project together. Implementing partner and INGO staff reported that these meetings helped husbands and mothers-in-law be more informed about the messages-only approach of the strategy and increase acceptance of NW involvement. However, these meetings were held with only a limited number of families and were not project-wide.

Key message	*Covered at care group meeting*	*Covered at NW meeting*
When the baby turns 6 months, he/she requires more nutrients from other foods.	A child requires various nutrients at this age.	Ensure to give your children food that is rich in vitamins, carbohydrates, and proteins.
Breastmilk continues to be very important for your baby. Breastfeed your baby first before giving other foods.	A mother should never stop breastfeeding the child even after introducing other foods.	A child between 6-12 months should be breastfed.
Breastfeed until your baby is two years or older. Continue breastfeeding your baby whenever he or she wants, day and night, for good health.	Mothers should breastfeed anytime the child wants to breastfeed.	Not covered
Start to give soft food (porridge, mashed banana, or mashed potato) at 6 months of age, 2 to 3 times a day.	A child should be fed at least three times in a day: morning afternoon and evening.	Not covered
Start with 2-3 tablespoonful per feed.	Not covered	Not covered
Add breastmilk or other animal milk to prepared soft food.	Not covered	Not covered
Food should be thick enough so that it does not run off the spoon.	A child's food should be heavy enough so that it can sustain him/her. An example is that porridge made for a child should be eaten and not drunk hence should be fed using a spoon.	Not covered
Feed your child slowly and patiently, make eye contact, encourage and motivate the child to eat. Never force-feed children.	A child is not forced to eat. A child should be fed slowly as the caregiver encourages him/her to keep on eating.	Give food to your children and monitor and encourage them while eating.
Look for cues that show your child is hungry before s/he starts to cry (e.g. puts fingers in mouth, spits, looks what others are eating).	Not covered	Not covered
Do not use bottles to feed your baby. They are very difficult to keep clean and can make your baby sick with diarrhea.	Always use a spoon when feeding a child.	Not covered
Wash your hands with soap before preparing food and feeding your child.	Washing hands before and after feeding a child is important.	Not covered
Boil water for 10 minutes and let it sit before offering.	Not covered	Not covered
Use clean utensils to serve babies foods. Store babies' foods in covered and clean containers.	All food prepared should be covered.	Keep food safe in order to avoid cholera and diarrhea.

Table 4. A comparison of intended messages from training materials and those delivered at a care group meeting and a NW meeting over the topic of feeding at 6 months

Discussion

This study revealed the importance of the quality of implementation of Care Group projects. Fidelity of the project was low, including a failure to hold meetings as designated by Care Group literature, to follow the determined work plan, and to include behavior change components in meetings. Meetings were sometimes skipped and were shorter than recommended. At all observed meetings, some messages were delivered and the omitted messages were not consistent between meetings. The low level of facilitation skills of CGVs negatively impacted the dose received. The local context, especially the financial environment due to intervention burnout, negatively affected the acceptability of the messages-only approach of the Care Group model. Project staff, volunteers, and beneficiaries adapted the project to the local context.

The low fidelity of the project, including the disjointedness between topics covered and the failure to disseminate large portions of the material at different levels, highlights the importance of monitoring for Care Group projects. A similar need for monitoring has been highlighted by others working with training-of-trainers and Care Group approaches. A review of training-of-trainers by UNICEF's Emergency Preparedness and Response Training also highlighted the importance of monitoring, concluding that a training-of-trainers project implemented without systematic follow-up is considerably less effective.28 A Technical Advisory Group meeting on Care Groups highlighted the need for the development of tools to monitor the program.20 The Food Security and Nutrition Network Social and Behavioral Change Task Force developed and shared the QIVCs that can be used to monitor project implementation at various levels.16 The project in this study was using QIVCs, yet there were many issues with implementation. When incorrect topics are being covered, facilitators are training on topics that they may have been

trained on months before, potentially affecting their ability to effectively train on these topics. Studies done on training-of-trainers projects that show that content fidelity varies, even when using educated trainers in high-income settings such as the United States.21-23

Project beneficiaries and staff members expressed low acceptability of a messages-only approach where no material or monetary benefit was given. This was likely affected by the large number of projects that have been implemented in western Kenya due to the high prevalence of HIV. Project beneficiaries face many difficult decisions related to the opportunity cost of attendance at meetings and many do not see the benefit of attending a meeting where they will only receive education and not material or monetary goods. NW and CGVs have implemented strategies to circumvent opportunity cost by holding group fundraising and limiting the lengths of meetings, but additional considerations are necessary in implementing a Care Group model, especially in areas that face intervention burnout. The amount of time that is expected of NW, CGVs, and CHVs to implement or take part in this project, as well as make the desired behavior changes, should be considered when designing projects that use this approach. Guidelines recommend the work load expected of CGVs16,17 and researchers have examined the workload of CHWs as trainers of CGVs,24 but the time and opportunity costs that is expected of project beneficiaries should be explored. If one-hour meetings every month is too time intensive for some women, project designers should be cognizant of what behaviors they ask them to change and how they go about doing it.

Providing capacity building and tools to CGVs would allow them to serve as more effective leaders of NW groups. All training provided at all levels was focused on didactic communication

of messages; no training was provided that covered facilitation skills, despite the lack of leadership experience among CGVs. As discussed by some CGVs in this study, the flipcharts made them feel more confident while others believed they couldn't refer to the flipcharts during the meetings for fear of seeming ill-prepared. Project staff deemed it necessary to add additional training about facilitation skills for CHVs in hopes that the information would be transmitted to CGVs. Low confidence of trainers has been an issue in the implementation of training-of-trainers projects.29 It is important to study how CGVs understand and can convey messages, as training-of-trainers projects have overestimated the knowledge, skills, and sustainability of knowledge among their training-of-trainers participants.22

This study sought to follow the transmission of information between the varying levels in the Care Group model and observe how messages change through the pathway. However, the same topics were not addressed consistently at the various meetings (see Figure 2), so we were unable to trace this message transmission in all but one instance (see Table 4). In addition, a lack of a clear written protocol with project details, including recommended lengths of all meetings, made it difficult to determine precisely what entailed complete delivery of the project. As a qualitative study, the results of this study cannot be assumed to be representative of the whole project.

The sampling structure of this evaluation allowed for data to be triangulated between various levels and through direct observations of meetings, meaning that nuanced detail gathered from IDIs could be confirmed via observation by a trained enumerator. As a qualitative process evaluation, this study adds to previously constructed guidelines17 by determining the fidelity of the implementation of a project that uses the Care Group model. Although previous research has

looked at fidelity of training-of-trainers projects, few, if any, publications have addressed the fidelity of the implementation of Care Group projects. The results from this study can be used to inform the implementation of Care Group projects by INGOs or governments.

Observing the fidelity of home visits was not included in this study but is an important area for future study as a variety of different models, including strict CHW models, incorporate home visits. Further research into the acceptability of the Care Group approach and expected time and opportunity cost contributions of project beneficiaries could help design projects with greater acceptability. As Care Group projects move towards integration with Ministries of Health and implementation at scale, it is important to include mixed-methods process evaluations to determine that the quality of implementation is high.

Lessons learned from studies of current implementation can be used to determine when and if Care Group projects are acceptable and how to alter the design to improve performance. Furthermore, issues present in this case study are not unique to Care Group projects. Other projects that rely on messages-only approaches in highly intervention-dense settings should consider methods to improve beneficiary acceptability. Projects that use local lay volunteers may include additional trainings focused on improving facilitation skills. Strong monitoring systems should be considered in projects that include multiple levels of dissemination (including training-of-trainers and CHW projects).

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