FutureGenerations
Empowering Communities to Shape Their Futures

OPERATIONS RESEARCH BRIEF

Health in the Hands of Women: Testing Teaching Methods in Rural Peru

An innovative method for teaching female community health workers, "Sharing Histories," helps significantly reduce chronic malnutrition among literate mothers' children.

Project Overview

Location
- Huánuco Region, Peru

Population covered
- Target area: 93,441

Timeline
- October 2010-September 2014

Funding
- USAID contribution: $1,499,556
- Future Generations Peru and local implementers contribution: $10,076,771

Implementers
- Future Generations Peru
- Regional Government and Regional Health Office of Huánuco
- Huánuco health service management network
- 3 micro-networks
- 4 district governments

Key Findings

> Comparing baseline and endline survey data, the study showed a CHW providing health education to mothers in their homes achieved significant improvements in maternal knowledge and behaviors, especially for the identification of pregnancy, postpartum, and newborn danger signs; exclusive breastfeeding; "minimally acceptable" meal frequency and dietary diversity; and indicators of women´s empowerment.

> These positive results were found in both the experimental and control groups.

AUGUST 2015

Introduction

Mothers' good health and hygiene practices in the home can prevent illnesses, encourage appropriate care, and promote physical growth and mental development in children under the age of five, which are critical to reducing chronic child malnutrition, morbidity, and mortality.[1] However, it is challenging to change mothers' behaviors and achieve better health outcomes, particularly in populations where access to health information is poor, education levels are low, and unhealthy traditional beliefs are strong. One method for globally improving maternal health behaviors is training and deploying community health workers (CHWs) to teach and counsel mothers in their homes. Effective training is needed to ensure CHWs' success in changing maternal behaviors; however, there is little research on teaching methodologies that effectively prepare CHWs as change agents, especially in populations with low basic education.

The Challenge

The Huánuco Region of Peru on the eastern slope of the Andes Mountains has one of the highest rates of stunting (low height-for-age) in children, which is associated with decreased cognitive development, lower learning ability, and decreased adult productivity.[2] Programs need to reach mothers in the home to effectively change their health knowledge and practices to improve children's growth and development. Given the curative-oriented network of primary health care facilities through the Peru Ministry of Health (MoH), a sustainable strategy that links MoH services to homes through a system of well-trained and supported CHWs is essential. This effort considers that CHWs need to be empowered as change agents to effectively achieve improvements in mothers' key health and hygiene behaviors. To do so, guidance is needed on how primary health care providers, who are not educators, can most easily and effectively train and empower CHWs to be change agents to contribute to goals in maternal, newborn, and child health and nutrition (MNCHN) and reduce child stunting.

Overall Project Strategy

Between 2010 and 2014, Future Generations' "Health in the Hands of Women" Project collaborated closely with the Huánuco Regional Government and four rural districts with 26 primary health facilities and about 93,000 residents. The goal was to introduce a sustainable strategy to strengthen primary health services and link them with communities to reduce chronic malnutrition and improve maternal and child health. The community component of the project introduced a new cadre of CHWs called community facilitators who were trained and managed by

Woman leader using flipchart images and key messages to teach a mother. *Photo by Lurdes Cabello, Future Generations.*

primary health care providers, who themselves were trained as "tutors" by Future Generations. Community facilitators were each responsible for supporting 15-20 volunteer women leaders, providing the link between formal health services and the community, with support from the local government that financed their part-time stipends. Women leaders were older, respected women in the community who had already raised their children. These women fulfilled the role of a volunteer CHW in a context where many CHWs were male. Their role was to make monthly home visits to pregnant women and children under age two to teach mothers best practices and danger signs using images and messages (flipcharts), observe maternal practices, detect danger signs, and make preventive and curative care referrals. CHW trainers (also known as tutors) used specially developed teaching manuals to train community facilitators and women leaders to promote positive MNCHN knowledge and behaviors at the household level through an innovative training metodology called "Sharing Histories."

Innovation Tested

"Sharing Histories" is part of a new educational process developed by Future Generations to improve MNCHN at the community level. The "Sharing Histories" methodology is an approach to female CHW training that involves CHWs sharing their personal experiences from pregnancy, childbirth, feeding and caring for newborns and children, and events surrounding any sickness and death. This is a teaching method built on women leaders' stories, in which they describe an MNCHN experience and recall what they did or did not do, what problems they had, how they solved or did not solve the problem, who may have helped them, how they felt about the situation, and other aspects of their experience. It is a form of "testimonial learning," which can be effective health education.[3] An evaluation of the "Sharing Histories" methodology in Afghanistan showed this method to be highly effective, contributing to a 46% reduction in child mortality.[4]

Adapting this method to Peru, Future Generations trained one to three health providers from each primary care facility as "tutors" in adult education methods and on how to use seven teaching manuals and corresponding flipcharts. For both study groups, tutors led ongoing monthly CHW trainings at each local health facility for community facilitators and women leaders from January 2012 to May 2014. For both study groups, community facilitators met once or twice a month with smaller groups of five to six women leaders in their communities to review the materials tutors used, and also practice using flipcharts and checklists to teach and monitor mothers. Community facilitators accompanied individual women leaders on home visits to mothers until the leaders felt comfortable visiting on their own.

How the innovation works: "Sharing Histories" for training female CHWs

Women leaders were trained in pregnancy, birth and postpartum issues, newborn issues, breastfeeding, infant growth and nutrition, and diarrhea and hygiene. Some were also trained to manage pneumonia. Depending on the topic discussed, all women leaders shared their stories with no immediate feedback from the tutor, so that all stories would be told without fear of judgment. For each topic, women leaders were asked questions to spur in-depth accounts of their experiences for tutors to note important aspects of these histories. After women leaders recounted their experiences, the tutor(s) facilitated a discussion to identify cultural habits and practices related to a topic, followed by explanations of how each identified practice or belief was good or bad for health. This session was followed by reviewing and practicing using each image and message in the corresponding flipchart that would be used to teach mothers. Each woman leader was given a full set of flipcharts to use for home visits. They were also taught to use icon-based "checklists" to monitor specific behaviors and danger signs in pregnant and postpartum women, newborns, and children up to age two during home visits.

In telling their own stories through "Sharing Histories," women leaders took ownership of their personal experiences, learned the differences between correct and incorrect traditional practices, gained self-confidence to speak to each other and to teach others, and, thus, became empowered to effectively share new knowledge and practices with other women in their community. Seeing the value of sharing histories, 20% of the women leaders in the experimental group spontaneously asked mothers to share their histories to better engage them in discussions and learning new health practices.

Research Methodology

This study was a cluster-randomized controlled trial, which used a pretest-posttest experimental design with 22 health facility jurisdictions (clusters) matched and randomly assigned to experimental and control groups. Based on where they worked, 33 tutors were trained in the "Sharing Histories" teaching methodology (experimental group), and 33 tutors were trained in a standard participatory CHW training method (control group). Each group of tutors was trained in and given a differentiated set of teaching manuals that reflected either the experimental or control teaching methodology. The 66 tutors were responsible for the monthly training of 42 community facilitators and 500 women leaders using their respective teaching methodologies. All other interventions remained constant for the two groups (Table 1).

Outcomes were measured through knowledge, practice, and coverage (KPC) household surveys[5] at baseline (Jan. 2011), midterm (July 2012), and endline (July 2014). For each survey, two independent samples of 303 mothers with children 0-23 months of age in each of the two study arms (606 total) were selected using two-stage random sampling. Mothers were interviewed and child weights and heights measured at each survey. The primary dependent variable was the prevalence of stunting (less than two standard deviations under the

TABLE 1: COMPARISON OF EXPERIMENTAL AND CONTROL GROUP TRAINING METHODOLOGIES. WLs=women leaders, CFs=community facilitators, and CWH=community health worker.

Variable	Experimental Group	Control Group
Training of tutors on adult education methods (not including "Sharing Histories")	Yes	Yes
Training of tutors on use of facilitator manuals that use "Sharing Histories"	Yes	No
Training of tutors on use of facilitator manuals that use the "Standard CHW Training"	No	Yes
Monthly training by tutors of WLs and CFs on 7 topics and use of flipcharts to teach mothers	Yes	Yes
Refresher training by tutors of WLs and CFs on a continuous basis in monthly trainings	Yes	Yes
Monthly supervision of WLs by CFs in small groups of WL in the community	Yes	Yes
WLs and CFs provided with a complete set of seven flipcharts for teaching mothers	Yes	Yes
WLs and CFs trained with a participatory methodology	Yes	Yes
WLs and CFs trained using "Sharing Histories" throughout the training process	Yes	No

median height-for-age of the international reference population) in children 0-23 months of age. Other outcome variables were the exposure of beneficiary mothers to home visits conducted by women leaders; mothers' understanding of select flipchart messages; mothers' knowledge of danger signs during pregnancy, birth, postpartum, newborn, and with child diarrhea; exclusive breastfeeding and complementary feeding practices; other key practices for MNCHN, hygiene, and sanitation; and select indicators of women's empowerment.

The project also conducted two complementary studies at endline. A qualitative study assessed the opinions of tutors, community facilitators, and women leaders on their use of the "Sharing Histories" methodology. The second study included interviews of 100 randomly selected women leaders (50 from each study group) and all 42 community facilitators using structured questionnaires to identify their characteristics, perceptions of their training, and aspects of their work with mothers in the home.

Findings

The innovative teaching intervention was associated with a significant difference ($p<.05$) in stunting between children of literate mothers in the experimental group (24.8%) and their peers in the control group (33.3%) at endline. This difference in stunting was even greater for children of literate mothers who were exposed to project drawings and flipcharts (20.7%), compared to children in the control group of literate mothers exposed to the project drawings and flipcharts (33.1%). There was no difference in stunting for the study groups of non-literate mothers' children, whether or not they were exposed to project drawings and flipcharts, who had similarly high rates of stunting at baseline, midterm, and endline (Figure 1). Evidence supporting the association between the experimental teaching method and stunting included significant differences in hygiene and sanitation practices at endline among literate mothers—when comparing experimental and control groups—especially for washing hands after defecating and no animals living inside the house (Figure 2). There was also a significantly greater practice of exclusive breastfeeding at the midterm in the experimental group (data not shown).

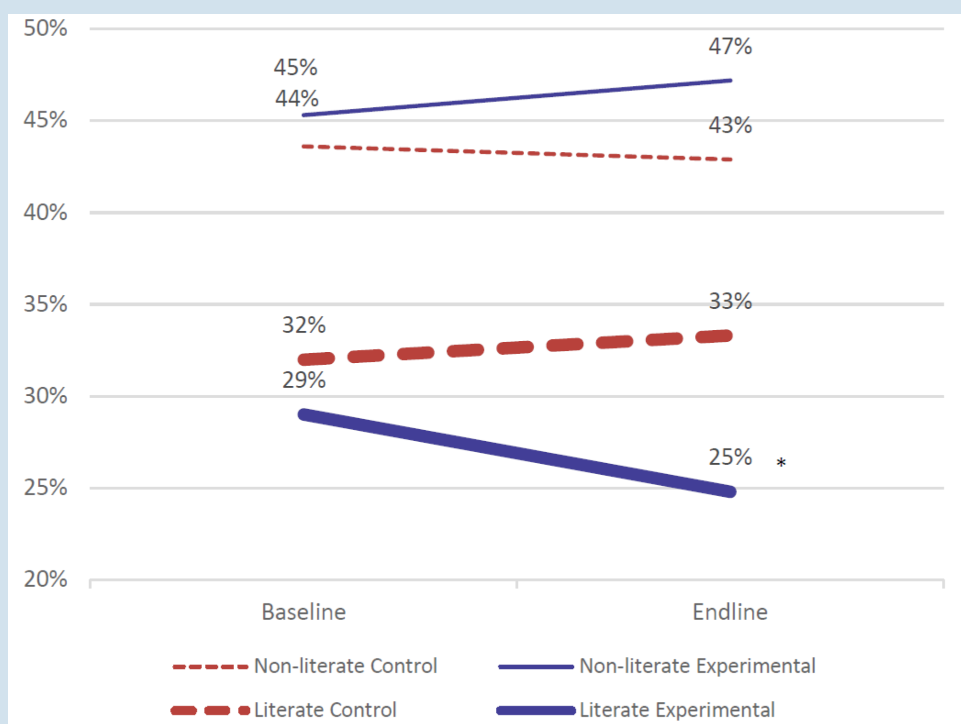
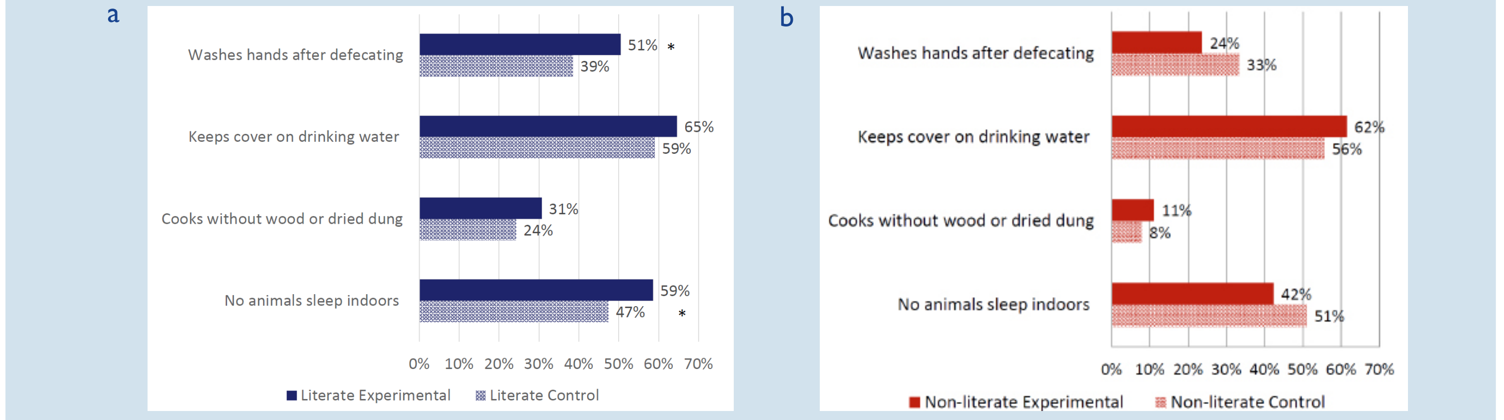


FIGURE 1: PREVALENCE OF STUNTING (HEIGHT-FOR-AGE <-2 z-score) IN CHILDREN BY STUDY GROUP AND LITERACY. Note: * = $p<0.05$ when comparing experimental and control groups at each time point.

FIGURE 2: DIFFERENCES IN KEY INTERVENTION INDICATORS AT ENDLINE BY STUDY GROUP FOR (a) LITERATE AND (b) NON-LITERATE MOTHERS. Note: * = p<0.05 when comparing control (patterned bars) and experimental groups (solid bars) at endline.



Conclusions

Few, if any, studies have experimentally tested teaching methods for CHW, particularly in relation to outcomes on health impact. This study demonstrated that using the "Sharing Histories" method to teach female community health workers (i.e. women leaders) made them more effective change agents to reduce stunting when beneficiary mothers are literate and are exposed to the project drawings/flipcharts, as compared to using a standard teaching method for CHW training. The same effect on stunting was not found in children of non-literate mothers, who continued to live in adverse environmental hygiene conditions which lead to frequent infections, nutrient malabsorption and thus stunting [6] that seems to resist the positive changes seen in maternal behaviors such as improved feeding practices, increased knowledge of danger signs and greater utilization of health services.

Recommendations

Future Generations' research suggests that teaching methodology should be considered a critical issue for CHW training programs. The organization found that it is feasible to reduce stunting with a community-based health promotion strategy that is linked to primary health care services and involves effectively trained CHWs. CHW teaching methodologies should empower women leaders (CHWs) to become effective change agents in the home. CHW training should include well-designed teaching and home-monitoring materials. With the positive outcomes on stunting and the experimental group's tutors' high opinions of the ease of using "Sharing Histories" for CHW training, Future Generations recommends this CHW teaching method be considered for wider use in Peru and other settings.

Use of Findings

The findings of this study were shared with the Huánuco Regional Government and other local partners in September 2013, and with the MOH, UNICEF, PAHO, and other in-country development partners in the capital city Lima in several events between January and May 2014. Future Generations developed a modular set of flipcharts and accompanying facilitator manuals on 7 topics for CHW training that incorporate the "Sharing Histories" methodology, and it has distributed 1,400 copies of a detailed methodological guide for reorganizing primary health care services to improve health promotion in communities. The Regional Government of Huánuco emitted a Regional Ordinance to expand the project strategy to all districts in the region. A manuscript is being prepared to publish the study results.

The "Health in the Hands of Women" Project in Huánuco Region, Peru, was supported by the American people through the United States Agency for International Development (USAID) through its Child Survival and Health Grants Program. The project was managed by Future Generations under Cooperative Agreements No. AID-OAA-10-00048 and AID-OAA-A-14-00028. The contents are the responsibility of the Maternal and Child Survival Program and the "Health in the Hands of Women" Project and do not necessarily reflect the views of USAID or the United States Government.

[1] *World Health Organization. (2014). Global Nutrition Targets 2025: Stunting policy brief. WHO/NMH/NHD/14.3.*

[2] *Black, R.E., Victora, C.G., Walker, S.P., Bhutta, Z.A., Christian, P., de Onis, M., . . . Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet, 382(9890), 427-451.*

[3] *Hinyard, LJ and Kreuter, MW. (2007). Using narrative communication as a tool for health behavior change: a conceptual, theoretical, and empirical overview. Health Education and Behavior, 5, 777-792.*

[4] *Taylor, CE. (2010). Pregnancy History in Afghanistan. WHO/EMRO Newsletter.*

[5] *Using a modified Demographic and Health Survey questionnaire.*

[6] *Korpe, PS and Petri, WA. (2012). Environmental enteropathy: critical implications of a poorly understood condition. Trends in Molecular Medicine, 18(6), 328–336.*