

ORIGINAL RESEARCH

There's No App for That: Assessing the Impact of mHealth on the Supervision, Motivation, Engagement, and Satisfaction of Community Health Workers in Sierra Leone



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Abstract

BACKGROUND The unprecedented access to mobile phones in resource-poor settings has seen the emergence of mobile-health (mHealth) applications specific for low- and middle-income contexts. One such application is the Mobile Technology for Community Health Suite (MOTEC Suite). Given the importance of community health worker (CHW) perceptions of a health program toward its successful implementation, this study explores whether the introduction of an mHealth application, as a human resource management tool, is associated with changes in CHW perceived supervision, motivation, work engagement, and job satisfaction over time.

METHODS We employed a 3-arm randomized longitudinal cohort design in Bonthe District, Sierra Leone. Three hundred twenty-seven CHWs were assessed over an 18-month period, with 3 different rounds of data collection. CHWs were assigned to 3 different intervention groups and given either a mobile phone with access to both the application and to a closed user group; a phone set up on a closed user group but with no application; or no mobile phone but the same level of training as the previous 2 groups.

RESULTS Findings indicated that there were no initial or sustained differences in perceived supervision and motivation across the 3 experimental groups over time with the introduction of the MOTEC Suite as a human resource management tool. Furthermore, there was no significant change in the self-reported measures of work engagement and job satisfaction across each of the intervention groups over time.

DISCUSSION/CONCLUSION Findings suggest that there are no systematic changes in perceived supervision, work engagement, job satisfaction, or motivation between CHWs who received a mobile phone set up on a closed user group with the MOTEC Suite application and those who either only received a phone with the closed user group or no phone at all. Therefore, the results of this study do not provide sufficient evidence to support the use of mobile technology or mHealth applications to strengthen these organizational factors within CHW programs and interventions. We argue that strengthening the organizational factors within CHW programs must therefore extend beyond the introduction of a technological solution.

KEY WORDS mHealth, community health workers, Sierra Leone, organizational factors

The authors declare they have no competing interests.

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INTRODUCTION

The evidence for the effectiveness of community health workers (CHWs) is strong, and with appropriate support and sufficient training, CHWs can substantially strengthen health systems in areas with scarce human resources for health.¹ As a result, CHWs have been deployed across a number of different maternal and child health interventions.^{2–4} World Vision Ireland's Access to Infant and Maternal Health (AIM-Health) uses CHWs to regularly promote 7 key health intervention messages targeting pregnant women and 11 intervention messages targeting mothers of children younger than 2. Dubbed the 7-11 Timed and Targeted Counseling (7-11 TTC) strategy, these health interventions are encouraged using a behavior change communication and counseling approach, held across a minimum of 10 household visits by a CHW. In Sierra Leone, World Vision Sierra Leone trains CHWs in the 7-11 TTC approach in collaboration with the Bonthe District Health Management Team. Moreover, all selection, training, and supervision of CHWs is done in accordance with the Policy for Community Health Workers in Sierra Leone, introduced in 2012 by the Ministry of Health and Sanitation.⁵ The policy states that CHWs must undergo a minimum 10-day basic training course; each CHW is expected to serve between 100–500 people, should be willing to serve as a volunteer, and must be a resident of the village and willing to work with the community. The policy also states that a staff member from the peripheral health unit (PHU) is expected to supervise CHWs on a monthly basis and make quarterly visits to supervise CHWs in their communities.

Motivation is widely recognized as an important mediating factor between work environment and organizational outcomes, such as job satisfaction and work engagement,⁶ all of which influence one's desire to stay in an organization or health program.^{7,8} Promoting professional ethos and positive perceptions of self-efficacy has also been determined to strengthen motivation and engagement of health workers across a variety of contexts.^{9,10} Similarly, health workers' perceptions of their supervisor and health program, as well as the extent of community and social support, are influential in their retention and motivation.^{11–13}

CHWs are not exempt from the same underlying system and organizational factors that affect more qualified health workers. Like any other health worker, the quality of health services delivered by

CHWs is compromised by a lack of proper investment in supportive organizational policies and structures.^{14,15} Inadequate supervision, lack of resources, poor working conditions, low engagement, insufficient community support, the absence of refresher training, unrealistic expectations regarding workload, and low satisfaction have all been identified as factors contributing to the failure of CHW programs over time.⁸ Factors found to influence the sustainability or scale-up of CHW programs include elements of ongoing management and supervision, contextual compatibility, and effective design of programs, as well as integration and support of programs within a larger health system.¹⁶ Put simply, the organizational and social factors influencing the relationships between CHWs, their communities, and the wider health system are vital to the overall success of CHW programs.^{12,17}

The rapid expansion of information communication technology in low-resourced settings has given rise to a number of mobile health (mHealth) applications designed specifically for CHW programs.¹⁴ The Mobile Technology for Community Health (MOTEC Suite) is one such application. The MOTEC Suite is designed to address critical gaps in health information and human resource management caused by limited resources, inadequate training, and insufficient supervision, all of which lead to lapses in care delivery.¹⁸ As part of the AIM-Health program in Sierra Leone, the MOTEC Suite is being used to help CHWs register pregnant women and their children for the program, alert CHWs when household visits are overdue, allow CHWs to make referrals to their affiliated PHU, and collect household data during household visits.

Rationale. Given that perceptions of supervision, motivation, job satisfaction, and work engagement of CHWs are key factors influencing health care delivery, then it stands to reason that the successful implementation of targeted community health interventions, mHealth or otherwise, should consider these organizational factors. That said, there is a lack of evidence-based research on the specific application of mHealth solutions in relation to the management of CHWs in low- and middle-income contexts, with few studies demonstrating an impact on clinical health outcomes and fewer still focusing on underlying organizational factors of CHW management, motivation, and supervision.¹⁹ Recently, with impetus from systematic reviews and protocol designs, there has been a push toward gathering more insight into the extent of an

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