Training and experience outperform literacy and formal education as predictors of community health worker knowledge and performance, results from Rongo sub-county, Kenya

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Background

The study conducted in Rongo Subcounty, Kenya, investigated predictors of knowledge and performance for community health workers (CHWs) in relation to obstetric and early infant danger signs, antenatal care, and immunization. CHWs play a crucial role in improving health outcomes, particularly in maternal and neonatal health. The study took place in the context of an intervention led by Lwala Community Alliance and the Kenya Ministry of Health aimed at professionalizing CHWs through training, payment, and supervision. The key design elements that lead to high-quality CHW programs are not well-studied, making this research important.

Objectives

- Assess the predictors of CHW knowledge of obstetric and early infant danger signs.
- Evaluate CHW performance in achieving antenatal care and immunization uptake among their clients.

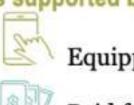**Characteristics of professional CHWs supported by Lwala:**

- Inclusive of traditional birth attendants
- Community acceptance
- Integrated with health facilities
- Equipped with digital tools
- Paid fairly
- Enhanced training
- Supervised consistently

Intervention

Implemented by Lwala and the Kenya Ministry of Health, the intervention focuses on professionalizing CHWs by providing enhanced training, payment, and supervision. It involves four cohorts: two received the intervention before the baseline, one received it between the baseline and endline, and one did not receive the intervention. The study area is in Rongo Subcounty, Kenya, which is divided into four wards.

Methods

The study design includes data collection on CHW demographics, knowledge tests, and key performance indicators for 234 CHWs. The data is analyzed using regression analyses to explore the potential predictors of CHW performance, including education, literacy, experience, training, and gender.

Results

- CHWs who received training through the intervention were 15% more likely to have clients who were fully immunized and 14% more likely to have clients who completed four or more antenatal care visits. This suggests that the intervention significantly improved CHW performance in these areas.
- The study revealed mixed results regarding the relationship between education and literacy and CHW knowledge and performance. While education was positively associated with one domain of knowledge (postpartum danger signs), literacy was negatively associated with another (neonatal danger signs). Neither education nor literacy was predictive of CHW performance in terms of antenatal care and immunization.
- The study highlights that education and literacy are not reliable factors associated with CHW competency and that other factors, such as training and supervision, play a more critical role in CHW performance.

Chart 1. Training topics. All training was based on Kenya's national curriculum for CHWs

Training Topic	Length	Refresher Period
Basic CHV Module	7 days	2 years
Maternal Newborn and Child Health Technical Module	5 days	Annually
Integrated Community Case Management Technical Module	5 days	Annually
Family Planning Technical Module	3 days	Annually

Chart 2. Linear regressions, performance

	Immunization				ANC			
	Coef.	95% Confidence Interval		value of P	Coef.	95% Confidence Interval		value of P
Trained in Intervention	15.471	11.415	19.526	0*	13.683	3.837	23.528	0.007*
Educated (> class 8)	0.736	-2.638	4.11	0.667	-3.975	-12.504	4.554	0.358
Literate	3.518	-0.478	7.514	0.084*	4.875	-4.603	14.354	0.311
Female	0.904	-2.908	4.716	0.64	8.177	-4.11	20.464	0.19
Recency of Training (Months)	0.11	-0.084	0.303	0.264	-0.259	-1.028	0.504	0.506
Experience (Years)	0.037	-0.384	0.458	0.863	-0.332	-1.167	0.503	0.433
Constant	77.991	70.004	85.977	0	73.503	54.676	92.329	0

*means statistically significant

Discussion

- Positive impact of the intervention on CHW performance, with increased rates of full immunization and antenatal care completion among clients of trained CHWs.
- Emphasis on the importance of frequent training, payment, and supervision in improving CHW performance.
- Questions the value of education and literacy requirements for CHW selection, suggesting that other design factors may be more important.
- Encourages further research into the selection criteria for CHWs and design choices that influence their performance, especially in the context of government efforts to professionalize CHWs.

Acknowledgements