

# Community satisfaction with Enhanced Community Health Workers Activities in Mukono District, Uganda

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## Research Article

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## Abstract

## Background

Although the community health workers' (CHWs) / volunteer health teams' (VHTs) work is widely appreciated, some households do resist their interventions, and figures of authority sometimes question their manner and ability. Despite critical shortage of health workers' world-over, little has been done to explore whether community health workers satisfy the people they serve. To fill this VHT training and support gap, Omni Med Uganda, a local Non-Governmental Organization in Uganda, has been implementing an enhanced hybrid VHT program since 2008. This study aimed at assessing community satisfaction with the CHW activities involved the enhanced CHW program.

## Materials and methods

A cross-sectional study was employed. Qualitative data was collected from 217 participants using semi-structured questionnaires. Descriptive statistics such as frequencies, proportions, and means were performed for socio-demographic characteristics, Community satisfaction, and CHW activities. Prevalence Ratios (PR) were used to determine association between Community satisfaction and enhanced CHW activities.

## Results

Majority of the respondents 81.1% (176/217) reported that the performance of the CHWs was satisfactory to maintain their health and that of their families. CHW activities such as confirming sick persons (APR:1.26 :95%CI (1.01–1.44), mobilization for cook stove building, (APR: 1.18: 95%CI (1.04–1.34), and monthly visits at participant's homes (APR: 1.17: 95%CI (1.01–1.35) were positively associated with community satisfaction.

## Conclusion

Enhancement of CHW activities should be considered during CHW programs. However, CHW performance should also be considered because community satisfaction does not imply high performance by CHWs and adherence to health interventions by the community.

## Background

Community Health Workers (CHWs) are volunteers selected from their communities as the first link with the health system [1–3]. These volunteers play an important and vital role in the prevention and control of diseases among communities through health promotion at household and community levels [4–8].

Community Health Workers have contributed to raising health awareness; acting as a bridge between the skilled health workers and the community thus increasing the demand and utilization of health services [6, 8–10]. Furthermore, they have played a role in the treatment of minor childhood illnesses of malaria, diarrhea and pneumonia [11–13], HIV/AIDS [8] and improvement of maternal and child health [14]. Due to their importance, like other countries, CHW program was even established in Uganda through the National Health Policy as part of the Uganda National Minimum Health Care Package (UNMHCP) so as to ensure that every village in the country is empowered to mobilize individuals and households for better health outcomes [1, 15]. Furthermore, the Ugandan Ministry of Health (MoH) also called for employment of volunteer CHWs to participate in the implementation of Integrated Community Case Management (iCCM) [16].

Despite the above, CHWs activities have been characterized with various challenges like high attrition levels, and poor performance and lack of motivation [12, 17] as they interact with health center and community members as they face a number of challenges. In response to this, **Omni Med Uganda, a local Non-government Organization** (NGO) has filled the CHW training and support gap in Mukono district, Uganda by implementing an enhanced program which involves the government iCCM curriculum that has been adapted for a CHW quarterly meeting schedule, as well as additional programs aimed at disease prevention [1, 18]. Such programs include mosquito insecticide-treated net (ITN) distributions aimed at reducing the burden of malaria [19]; the Cook stove Project, aimed at reducing the incidence of pneumonia by reducing indoor air pollution (IAP); and protected water source (PWS) community construction projects aimed at reducing rates of diarrhea and improving overall wellbeing [18]. This paper presents results of the assessment of community satisfaction with the these enhanced CHWs activities in Nabaale, Mukono district.

## **Materials And Methods**

### **Study setting and population**

The study was conducted among households in Nabaale, Mukono district in central Uganda. Omni-Med Uganda, the implementing organization is situated in Mukono district where it has established various training programs encompassed in the Enhanced CHW Model. The same district is also characterized with a large proportion of children under the age of five in the Mukono District who benefit from the Enhanced CHW model.

### **Study design**

The study was a cross sectional study sub study, that was part of a larger study entitled Piloting the Enhanced Integrated Community Case Management (iCCM) Model in Mukono District, Uganda; which aimed at determining the community satisfaction, feasibility, cost and efficacy of the enhanced community health worker model in one Mukono district village.

#### **Sample size and sampling strategy.**

This study's sample size constituted 217 study participants. The sample size was calculated using the Kish Leslie formula (1995) for cross-sectional studies, (considering 69.8% as the level of community satisfaction with Village health teams [6], and an acceptable sampling error of 6%) giving a sample size of 225 participants. 217 (96.4%) of the participants completed the interviews. Systematic sampling was carried out to determine the households to be included in the study. Household heads or his/her representatives in each of the selected households participated in the study.

#### **Data Collection, Management and Analysis.**

Data was collected by the trained CHWs using the developed semi- structured questionnaires. These had been loaded into Epicollect V5, and the data was synchronized onto a remote server daily. The data was collected using android mobile phones which allowed real-time data capture and entry, minimized errors at entry and eased data cleaning. To ensure that the data was secure, only the principal investigators had the security key to the Epicollect server, where the data was being sent during data collection. Validation of the collected data was done by checking a significant percentage (20–30%) of the same by field supervisors and the principal investigators. The collected data was cleaned using Microsoft Excel 2016 (Microsoft Corporation, New Mexico USA) and analyzed using STATA 14.0 statistical software (StataCorp Texas, USA). Descriptive analyses such as frequencies, proportions, and means (where appropriate) were performed for socio-demographic characteristics, Community satisfaction, and CHW activities. To assess the association between the outcome variables (community satisfaction) and each explanatory variable, we considered a binary generalized linear model with modified Poisson, with logarithm as the canonical link function and applying robust

error variance which provided crude prevalence ratios (PRs) and their corresponding 95% confidence intervals (CIs). Variables with  $p < 0.05$  were all added into the multivariable analysis to ascertain significant variables for each outcome. The statistical significance levels were two-sided at  $p < 0.05$ .

## **Ethics statement**

Ethical approvals were obtained from Mengo Hospital Research and Ethics Committee (MHREC), Uganda National Council for Science and Technology and the Ministry of Health. Written informed consent was obtained from each of the study participants before collection of the questionnaire data.

## **Results**

### **Socio-demographic characteristics**

Majority, 25.8% (56/217) of the respondents were between 46–55 years. Majority, 51.2% (111/217) of the participants were male. More than half, 53% (115/217) of the participants were married/cohabiting and 58.1% (126/217) had attained a primary level of education. Furthermore, majority, 73.7% (160/217) of the participants were peasant farmers as illustrated in Table 1.

Table 1  
Socio-demographic characteristics of the study participants.

Socio-demographic variables	Frequency ( n = 217 )	Percentage (%)
Age in years		
17–25	28	12.9
26–35	41	18.9
36–45	38	17.5
46–55	56	25.8
Above 55	54	24.9
Sex		
Male	111	51.2
Female	106	48.9
Household position		
Mother /Grand mother	90	41.5
Father/ Grand father	95	43.8
Child	11	5.1
Others	21	9.7
Marital status		
Single/ Never married	53	24.4
Married/ Cohabiting	115	53.0
Divorced/ Separated	27	12.4
Widowed	22	10.1
Education status		
No education	34	15.7
Primary	126	58.1
Secondary	50	23.0
Post-secondary	7	3.2
Occupation		
Not employed	9	4.2
Peasant farmer	160	73.7
Trader/ business	19	8.8
Technical/ craft	14	6.5
Others*	15	6.9
Others* <i>bodaboda rider, traditionalist, teacher, musician, driver</i>		

Socio-demographic variables	Frequency ( n = 217 )	Percentage (%)
Religion		
Protestant/Anglican/SDA/Born again	84	38.7
Catholic	84	38.7
Muslim	48	22.1
None	1	0.46
Others* <i>bodaboda rider, traditionalist, teacher, musician, driver</i>		

## Community satisfaction with CHW programs

Majority of the respondents 81.1% (176/217) reported that the performance of the CHWs was satisfactory to maintain their health and that of their families as illustrated in Fig. 1.

## Activities conducted by CHWs during the Enhanced CHW Model

About an eighth, 13.8% (30/217) of the respondents reported that CHWs prepare hospital referral forms and only 10.1% (22/217) reported that CHWs go to hospital with patients. Majority, 59.9% (130/217) of the participants reported that CHWs give health guidance and just over a third, 38.7% (84/217) reported that CHWs visit patients at home. About the same, 19.4%, number of CHWs visit pregnant women just as 17.5% (38/217) CHWs that visit new born babies. About half, 48.9% (106/217) reported that CHWs confirm sick people and more than half, 57.1% (124/217) of the participants reported that CHWs mobilize people to clean water sources. In addition, less than half, 47.5% (103/217) of the participants reported that CHWs mobilize people for cook stove building trainings and more than half, 62.2% (135/217) reported that CHWs give health education.

### CHW activities associated with community satisfaction during the Enhanced CHW Model.

**Table 3** shows that, confirming sick persons mobilizing cook stove building CHW visiting home every month were associated with community satisfaction with CHW activities. Participants who reported that CHWs confirmed sick persons (APR:1.26 :95%CI (1.01–1.44), were 1.26 times more likely to be satisfied with the CHW activities compared to those where CHWs did not confirm sick persons. Participants who were mobilized for cook stove building, (APR: 1.18: 95%CI (1.04–1.34), were 1.18 times more likely to be satisfied with CHW activities compared to those that reported not mobilized for cook stove building. Participants who reported CHW monthly visits at their homes (APR: 1.17: 95%CI (1.01–1.35), were 1.17 times more likely to be satisfied with CHW activities compared to those who did not receive CHW monthly visits as illustrated in **Table 3**;

Table 2  
CHW activities associated with community satisfaction towards the Enhanced CHW Model.

CHW Activity variables	Overall community satisfaction				CPR at 95% CI	P-values	APR at 95% CI	P-Values
	Yes (N = 176)		No / Don't know (N = 41)					
	Frequency	%	Frequency	%				
Prepare hospital referral forms								
Yes	27	90.0	3	10.0	-			
No /Don't know	149	79.7	38	20.3	0.89(0.77–1.02)	0.088		
Go to hospital with sick persons								
No /don't know	156	80.0	39	20.0	-			
Yes	20	90.9	2	9.1	1.14(0.97–1.32)	0.095		
Give health guidance/information								
No / Don't know	57	65.5	30	34.5	-			
Yes	119	91.5	11	8.5	1.40(1.19–1.64)	< 0.001	1.08(0.88–1.30)	0.458
Visits patients at home								
No / Don't know	95	71.4	38	28.6	-			
Yes	81	96.4	3	3.6	1.35(1.20–1.51)	< 0.001	1.09(0.96–1.23)	0.191
Visits pregnant women								
No / Don't know	138	78.9	37	21.1	-			
Yes	38	90.5	4	9.5	1.15(1.01–1.29)	0.031	0.94(0.78–1.15)	0.563
Visits new born baby								
No / don't know	139	77.7	26	22.3	-			
Yes	37	97.4	1	2.6	1.25(1.14–1.38)	< 0.001	0.93(0.79–1.09)	0.392
Confirms sick persons								
No /Don't know/refused	77	69.4	34	30.6	-			
Yes	99	93.4	7	6.6	1.35(1.18–1.14)	< 0.001	1.26(1.10–1.44)	0.001

CHW Activity variables	Overall community satisfaction				CPR at 95% CI	P-values	APR at 95% CI	P-Values
	Yes (N = 176)		No / Don't know (N = 41)					
	Frequency	%	Frequency	%				
Mobilizes to clean water source								
No / Don't know	65	69.9	28	30.1	-			
Yes	111	89.5	13	10.5	1.28 (1.11–1.48)	<b>0.001</b>	0.99 (0.84–1.15)	0.851
Mobilizes cook stove building								
No / Don't Know	82	71.9	32	28.1	-			
Yes	94	91.3	9	8.7	1.26 (1.11–1.44)	<b>&lt; 0.001</b>	1.18 (1.04–1.34)	<b>0.009</b>
Gives health education								
No / Don't know	45	25.57	26	63.41	-			
Yes	124	70.45	11	26.83	1.44 (1.23–1.72)	<b>&lt; 0.001</b>	1.01(0.90–1.35)	0.352
CHW visits home every month								
No / Don't Know	68	38.64	35	85.37	-			
Yes	94	53.41	5	12.20	1.37(1.20–1.56)	<b>&lt; 0.001</b>	1.17 (1.01–1.35)	<b>0.041</b>

## Discussion

To the best of our knowledge, this is one of the few studies assessing community satisfaction of community health workers' activities in Uganda. In this study, we analyzed community satisfaction of the Community Health workers (CHWs) enhanced activities. These findings could be useful to the public health policy makers, and other stakeholders to improve and motivate community/ village health worker activities and community satisfaction thus improving community health.

Majority, of the participants reported being satisfied with the enhanced community health workers activities. Activities like confirming sick persons, mobilizing cook stove building, CHW visiting homes every month were positively associated with community satisfaction with CHW activities.

The study indicated a high level of community satisfaction with the CHW activities. However, the level of community satisfaction was higher than that reported in other studies [6]. This could be attributed to the highly experienced CHWS involved [20] and enhancement of their activities [18, 19] such as the distribution of mosquito nets, mobilization for cook stove making, water source construction, and home visits by Omni med staff [18].

A study conducted in Busia district, Kenya indicated the highly experienced CHWs satisfied their clients and enabled them more than those with a low experience. It further revealed that CHWs below 50 years of age satisfied their clients more than those above 50 years of age [20]. Therefore, age i.e. below 50, and experience in handling community activities should be considered during CHW programs to ensure community satisfaction.

A study conducted in western Kenya among CHWs revealed that most CHWs reported that enhancement of their activities by involvement in malaria control programs had positive effects on their other CHW activities, including improving skills applicable to other tasks and community satisfaction [21, 22]. Furthermore, various activities such as good performance was associated with intervention designs involving a mix of incentives, frequent supervision, continuous training, community involvement and strong co-ordination and communication between CHWs and health professionals increases CHW performance and credibility [22–24] among clients. Therefore, enhancement of CHW activities should be considered for CHW programs to improve community satisfaction.

In contrary to the above, a high community satisfaction does not imply a high level of performance of CHW [25] and adherence to health interventions [26]. A study conducted in Pader district, Uganda revealed that VHTs/CHWs had a low job performances in the delivery of health services in the community despite positive client/community satisfaction on VHT services [25]. Another study in Siaya, Kenya showed that there was no significance between CHW enhanced activities with adherence to health interventions. Therefore, CHW performance and activities aimed at adherence to health interventions should be considered despite high community satisfaction.

A high level of community satisfaction is associated with improved knowledge about various health topics among community members [27, 28]. A systematic review conducted to identify the effectiveness of CHWs in the care of persons with diabetes revealed that participant knowledge on the disease increased immensely among participants who were generally satisfied with their contacts with community health workers [28]. This implies that community satisfaction is associated to a positive increase in knowledge.

Monthly home visits were positively associated with community satisfaction. A study conducted in Amazonas, Brazil showed an increased community satisfaction with home visits (OR 26.66) [29]. Home visits enable community members come into contact with their community health workers and have been associated with improvement in maternal and child health [4, 30–32]. Studies have revealed that home visits for antenatal and neonatal care, and community mobilization activities, are associated with reduced neonatal mortality and stillbirths in southern settings with high neonatal mortality and poor access to facility-based health care [31]. Another study conducted in Bangladesh, a low income country like Uganda showed that newborn babies who were not visited by CHWs were 7.66 times more likely to have breastfeeding problems compared to those who were visited by CHWs [30].

Another study conducted in rural south Africa revealed that mothers who also received home visits by CHWs were more likely to attend the recommended four antenatal care visits, to exclusively breastfeed at 3 months, and were less likely to consult traditional healers at 3 months than those who were not visited by CHWs [33]. Therefore, home visits should be further incorporated in the CHWs activities so as to improve maternal and child health thus community satisfaction.

Confirming sick persons in the community was positively associated with community satisfaction. This is similar to a study conducted in Brazil which revealed that community satisfaction was positively associated with confirming sick persons in the community [29]. Therefore, confirming sick persons should be incorporated among CHW programs to improve community satisfaction.

Cook stove construction was also positively associated with community satisfaction. This is similar to a study conducted in indicated that community members had a high levels of satisfaction with cook stove construction [34]. These cook stoves have been associated with increased fuel savings and reduced cooking time compared to three

cooking stones [35, 36]. Cook stoves have also been associated with reduced air pollution [37] and its adverse effects [38]. This is crucial for largescale adoption of the activity.

## Conclusions

The enhancement of community health activities by incorporating activities such as cook stove construction, confirming sick persons and conducting home visits should always be considered during Community Health Workers programs as they are associated with community satisfaction. Furthermore, CHW performance should be considered during CHW programs since studies have shown that community satisfaction does not imply a positive job performance.

## Declarations

### Availability of data and materials

The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

### Competing interests

We declare no competing interests.

### Acknowledgement

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### Author contributions

**KK, JO, HB CS MC, EN, HM, EM** and **EO** conceived and designed the study, provided technical guidance, supervised the work, wrote and reviewed the final manuscript. **DB and MM** participated in data management, analysis and results interpretation. **DB, and KK** participated in the drafting, writing and manuscript reviews. All the authors reviewed and approved the final manuscript.

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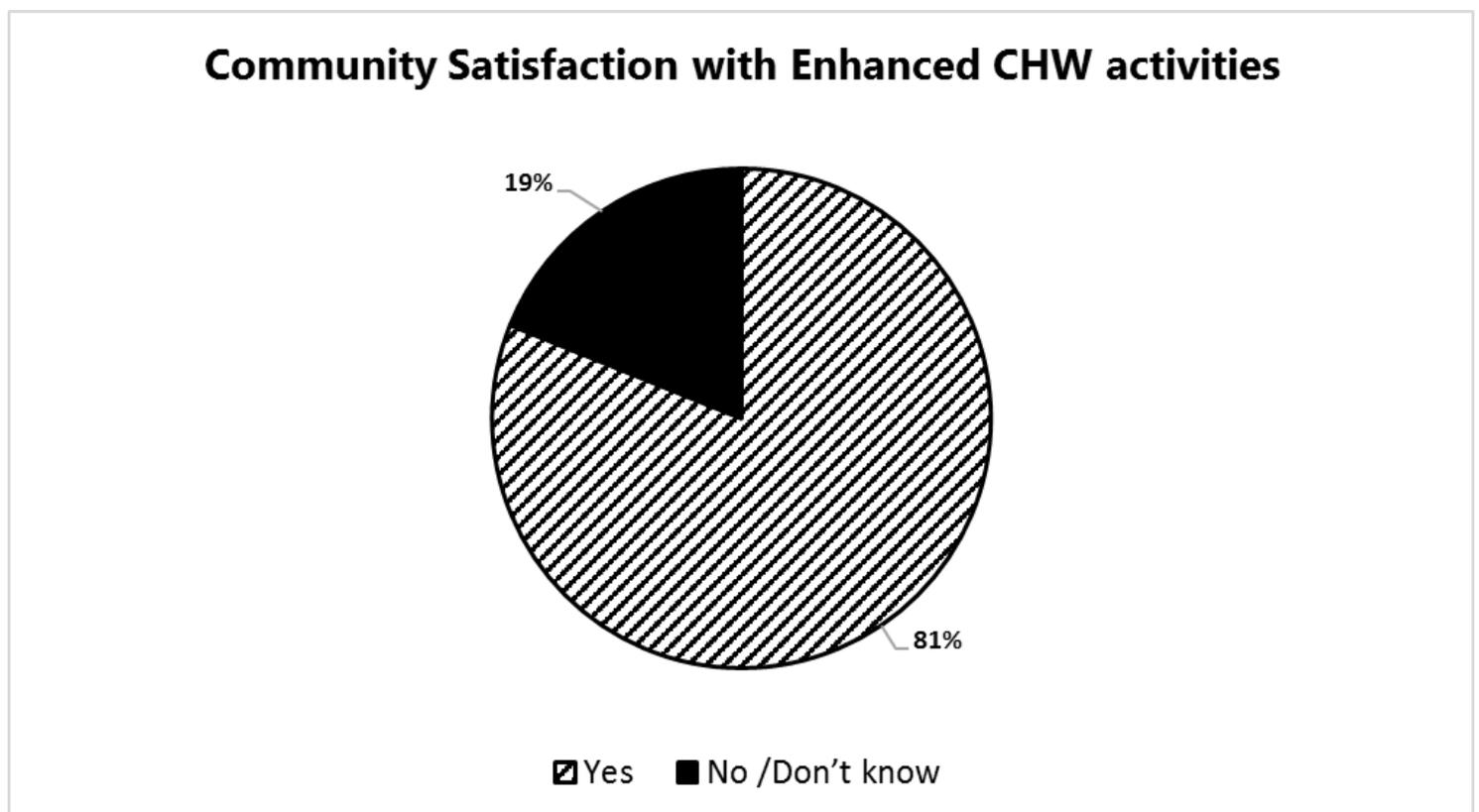
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## Figures



**Figure 1**

Community satisfaction with CHW Enhanced activities