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Factors Associated with Dropout Among Community Health Workers in Musanze District, Rwanda: A Cross Sectional Study

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ABSTRACT

INTRODUCTION: Dropout has been renowned as one of the main challenges of Community Health Workers (CHWs) programs in addition to the health facilities. This has got a serious public health implication as it can hinder the increase of health service delivery in rural and urban areas. This study aimed to determine the factors associated with dropout among CHWs in Musanze District, Rwanda.

METHODS: A descriptive cross-sectional study was conducted. Three sectors from the district were selected purposively with a total sample size of 252 CHWs who were elected and recruited in 2013. Data was collected using semi-structured questionnaire and was analysed using SPSS version 25. Multiple logistic regression analysis was performed to determine the independent factors associated with dropout of CHWs.

RESULTS: Out of the total (252 CHWs) enrolled since 2013, about 10% had left the health system in a period of 4 years. Following the multiple logistic regression analysis; being single [AOR=2.58, 95%CI=1.09-6.93], engaged in business [AOR=3.22, 95%CI=1.25-8.27] and relationship with supervisors [AOR=0.25, 95%CI=0.09-0.67] were independently associated with dropout of CHWs.

CONCLUSION: Dropout rate during the period of four years was 9.9%. Marital status and occupation are main factors affecting dropout of CHWs in Musanze district.

Keywords: Attrition, Community, Community health workers, Dropout, Retention

INTRODUCTION

The use of community health workers has been identified as one strategy to address the growing shortage of health workers, particularly in low-income countries. Using community members to render certain basic health services to the communities they come from is a concept that has been around for at least 50 years. There have been innumerable experiences throughout the world with programmes ranging from large-scale, national programmes to small-scale, community based initiatives [1].

Dropout has been recognized as one of the main challenges of community health programmes worldwide. For example in the Plurinational State of Bolivia, a developing country in Latin America, dropout rate was 43% in 2009 among lay

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health workers [2]. In South Africa a tuberculosis intervention programme lost 11 out of 12 lay health workers in less than a year [3]. In Kenya, during a home based care for people living with HIV, there was high dropout and shifting among the CHWs; out of the 30 CHWs recruited, 10 had already dropped out during 11 months [4].

Dropout rate is not only a challenge for lay health workers but also affects other professional health workers to varying degrees. For instance, South Africa and Uganda lost 41% and 78% respectively of their pharmacists working in public sector between the years 1998-2002 [5]. This can easily worsen the problem of attrition among community health workers as they will be given extra responsibilities that would be performed by those health workers. The report of World Health Organization (WHO) showed that measuring dropout and identifying its determinants should be an integral part of leading and managing any community health work programme. Unfortunately, it is often ignored and many tend to report on health outcomes and process indicators achieved. These include the number of CHWs recruited and trained. Therefore, the factors associated with dropout should be taken care of in order to realize what can increase CHWs retention. It is appropriate to emphasize the reporting on the health outcomes since the purpose of community health programme is to bring the health services closer to communities so that there may be the improvement of health outcomes [6].

Rwanda is divided into 14,837 Villages, and each village had three Community Health Workers (CHWs). These are community members who volunteer to be trained through a government program that aims to ensure nobody develops any symptoms of illness. Supervision practices can be maximized, and there is a need to address the issue of institutional incentives that shape the utilization and retention of capacities, which is vital for sustainability [7].

Rwanda started the community health program in 1995 after the genocide. At that time, there was no policy, strategy or operational guidelines on how to implement a community health program. The idea behind creating a community health program was mainly to improve access to health services by bringing services closer to the communities while also addressing the shortage of the health care provider work force [8].

The community health workers are an important component in health services, for they bridge the gap between the need of service delivery, social and economic development, and the Millennium Development Goals (MDGs) [9]. They strengthen the health system by being intermediary between community and health facilities and so avoiding the population to take long walks to the nearest health centers or Hospitals. With this, Rwanda is one of the only countries in the sub-Saharan region which managed to achieve the health-related millennium development goals (MDGs) by 2015 [10]. Such achievements could never be attained without the CHWs participation [7]; therefore retaining CHWs is an important deal and this is why this study on identifying factors associated with dropping out of CHWs is necessary. It is believed that in the rural and remote areas attrition of health workers in general is higher than it is in urban [11].

There is no other previous study which was conducted in Musanze District to discover factors associated with attrition among CHWs in Musanze District. Consequently, the current study was set out to establish the factors associated with attrition of CHWs in urban and rural setting in order to notify the Ministry of Health on how to improve the attention of the population in respective area and how they can improve factors associated with retention of CHWs.

METHODS

Study design and setting

A cross sectional study with a quantitative approach was used. This study was conducted in three sectors of Musanze District located in Northern Province of Rwanda. The two sectors namely Muhoza and Cyuve were considered as urban area while Muko as rural area. The study was carried out from March to October 2017, and considered the attrition rate for the last four years; 2013 to 2017.

Sampling

In order to achieve the objective, the study included all community health workers who were elected and enrolled in 2013. Three sectors of study area were chosen for the following reasons: Muhoza and Cyuve sectors were purposively selected because both sectors are located in urban area and are reported to have a big number of turnovers among CHWs. Whereas Muko sector was purposively selected from rural part of the

District because it is reported to have high retention of CHWs. The list of CHWs was obtained from the administrative records; all were eligible but each name was assigned to a number to avoid bias or influence of information. Following the structure of Ministry of Health, the quantitative sample size was from six health centers and one Hospital namely: Kabere HC, Nyakinama HC, Muhoza HC, Ruhengeri Hospital, Gasiza HC, and Karwasa HC.

Data Collection

Data were collected using self-administered questionnaires designed in English and translated in Kinyarwanda, and were distributed to CHWs. All respondents were called to meet the researchers on the day they had chosen, each respondent was given one questionnaire, and researchers first introduced and explained the content of the questionnaire. The questionnaire included demographic characteristics of respondents, community related issues and information affecting their stay and leave the health system

Data Analysis

In this study data were analyzed using SPSS version 25. Descriptive statistics such as counts and percentages for each categorical variable were calculated. Bivariate and multivariate analysis were performed to determine the factors associated with drop outs among CHWs. To control the confounding variables, multiple logistic regression for all factors that found statistically significant with drop out during bivariate analysis was performed. P-values less than 0.05 were taken as significant.

To conduct this study, approval from Mount Kenya University Rwanda was obtained and authorization was also granted by the Mayor of Musanze District. After informing the purpose of the study, signed informed consents were obtained from participants.

RESULTS

Out of 270 sample size calculated, 252 CHWs participated in the study which gives a response rate of 93% and these are due to various circumstances. Majority of the respondents (56%) were aged 38 to 47 years and the dominant were females (65.5%). Most were married (83.7%), with primary level of education (71.4%), Christian followers (90.9%) and unemployed (54.4%). All respondents had experience of at least 2 years and 85% had 5 and above years of experience. Large percentage (85.3%) had five and more years of experience as CHWs. Most of the CHWs indicated that they were respected by the fellow community (84.5%), poor perceived working conditions (65.5%), and having good relationship with their supervisors (86.5%). However, about three quarter (74.2%) reported that they did not receive promotion (Table 1).

The proportion of community health workers who dropped out in Musanze District was 9.9% in four years period (2013-2017). The main reason identified for dropping was lack of incentives (92%). Among those who were still serving as CHWs, the common reasons identified were contributing to community (58.9%) (Table 2).

Multiple logistic regression among those variables showed significant associations. Marital status, occupation and relationship with supervisor were found as predictors of drop outs (Table 3). Single CHWs were 2.5 times more likely to drop out [AOR =2.58, 95% CI= 1.09-6.93; p =0.046] compared to those who are married. CHWs engaged in business were about 3 times more likely to drop out than those unemployed [AOR=3.22, 95% CI=1.25-8.27; p = 0.015]. Those who had good relationship with supervisors were 0.25 times less likely to drop out [AOR=0.25, 95% CI=0.09-0.67; p = 0.006].

DISCUSSION

The proportion of dropout among CHWs in Musanze District was 9.9%. Although this rate is not as high as in Ghana where it was 21.2% [12], it may be significant when attributed to the whole District. Moreover, it was very low compared to the study conducted on community directed distributors of Onchocerciasis control program in Nigeria in which attrition was reported to be 65.9% [13]. The discrepancy may be related to some criteria of selection or being a resident in the area. Such attrition results in decreased achievement of targets and a loss of money used in trainings and supervisions [14]. High attrition rates also cause several problems such as frequent turnover of CHWs, implying lack of continuity in the relationship already established among CHWs, community itself, and the system [15].

In the multivariate analysis being single was found to be statistically significant with dropout. CHWs who are single appear to be free to move any time as in looking for self-development. Married CHWs

Table 1: Patient characteristics

Variable	N= 252	%
Age		
27-37	65	25.8
38-47	141	56.0
48-64	46	18.3
Gender		
Male	87	34.5
Female	165	65.5
Marital status		
Single/widow	41	16.3
Married	211	83.7
Education level		
Primary	180	71.4
Secondary	68	27
College	4	1.6
Religion		
Christian	229	90.9
Muslim	23	9.1
Employment		
Farmer	75	29.8
Business	40	15.9
Unemployed	137	54.4
Experience in years		
<5	37	14.7
5 and above	215	85.3
Respect by the community		
Yes	213	84.5
No	39	15.5
Ratio of CHW to Community		
Very high	77	30.6
Fairly high	175	69.4
Perception of working conditions		
Poor	165	65.5
Good	87	34.5
Received promotion		
Yes	65	25.8
No	187	74.2
Good relationship with the supervisor		
Yes	218	86.5
No	34	13.5

CHW: Community health workers

are stable than singles and widows hence result in low rate of dropout [16]. Similarly, those who were engaged in business were highly associated with dropout among CHWs in Musanze district. Ten out of forty participants who were engaged in business as an occupation dropped out and left the system. This is in agreement with the research done in Uganda, a neighboring country, found dropout to be the result of CHWs being too busy, moving to another village or needing to focus on business or other paid activities [17]. Another study in Bangladesh reported that the dropout rate for CHWs was between 31-44% and the reasons for attrition were due to household responsibilities, other socio-economic activities which appeared more profitable [21].

Normally, CHWs in Rwanda are not paid, but this does not exclude them being accountable in the health system. They are even supervised like other employees. Perhaps dropout is not because they don't care but because they have to choose between serving community and caring for family responsibilities and that community recognition cannot help. Communities that have directly and visibly benefited from CHW programs are the most willing to support the continued presence of CHWs [15].

Relationship with supervisors was also significantly associated with dropout of CHWs. Good relationship with supervisors was a protective associated factor from not dropping out in this study. Programs would be well served by monitoring some of the most important factors that affect a CHW's motivation and desire to stay on the job [18]. There is a positive influence in supervision for better performance of CHWs. In Kenya a study found that interactions between the number of supervisions and the CHW's health knowledge were significantly associated with the CHW's performance [16]. Possibly the most important issue that should be monitored by CHW programs is whether the programs are able to stay abreast of the "competition" for CHWs [15]. This means caring whether there are no other jobs or other opportunities.

The known main raisons for dropping out may include parting from the concerned place. This may be the case for many communities in developing countries even in short period. In Bangladesh one hundred and twenty CHWs (22%) had left the project in just one year because they were no longer in that area [19]. Our study did not experience that because all CHWs participated in the study were still in the area even after they had left the health system. Other reasons for dropping out are lack of incentives and regular salary; in fact many studies showed it as a frequent issue [15], though not with big percentage [19]. In the current study, among those drooped out more than 90% indicated that they dropped due to lack of incentives. This is also evidenced that CHW programs that depend on community financing have twice the attrition rate than those who receive a government salary [15]. When expecting payment and not find at last, the

Table 2: Proportion of drop outs among community health workers

Variable	N= 252	%
Drop outs among community health workers		
Yes	25	9.9
No	227	90.1
Reasons of dropping as CHW (n =25)		
No incentives	23	92
Too much workload	2	8
Reasons for continuing as CHW (n=202)		
Contributing to community	119	58.9
Knowledge and skills	32	15.8
Per-diem	42	20.8
Getting materials	9	4.5

CHW: Community health workers

Table 3: Bivariate and multivariate analysis for factors associated with drop outs

Variable	Dropped		Remain in job		Bivariate analysis		Multivariate analysis	
	n	%	n	%	COR (95%CI)	p value	AOR (95%CI)	p value
Participants age in years								
27-37	6	9.2	59	90.8	0.83(0.24-2.92)	0.776		
38-47	14	9.9	127	90.1	0.90(0.31-2.66)	0.855		
48-64	5	10.9	41	89.1	Ref			
Gender								
Male	9	10.3	78	89.7	1.07(0.45-2.54)	0.870		
Female	16	9.7	149	90.3	Ref			
Marital status								
Single	8	19.5	33	80.5	2.76(1.11-6.93)	**0.030**	2.58(1.09-6.93)	**0.046**
Married	17	8.1	194	91.9	Ref		Ref	
Religion								
Christian	24	10.5	205	89.5	2.57(0.33-19.97)	0.365		
Muslims	1	4.3	22	95.7	Ref			
Education								
Primary	13	7.2	167	92.8	Ref		Ref	
Secondary & above	12	16.7	60	83.3	2.57(1.11-5.94)	**0.027**	2.16(0.72-6.47)	0.168
Employment								
Farmer	2	2.7	73	97.3	0.26(0.06-1.19)	0.083	0.24(0.05-1.12)	0.069
Business	10	25	30	75	3.18(1.27-7.94)	**0.013**	3.22(1.25-8.27)	**0.015**
Unemployed	13	9.5	124	90.5	Ref		Ref	
Experience in years								
<5	2	5.4	35	94.6	0.48(0.11-2.12)	0.330		
5 and above	23	10.7	192	89.3	Ref			
Respect by the community								
Yes	16	7.5	197	92.5	0.27(0.11-0.67)	**0.005**	0.53(0.17-1.65)	0.277
No	9	23.1	30	76.9	Ref		Ref	
Ratio of CHW to Community								
Very high	9	11.7	68	88.3	1.32(0.55-3.12)	0.534		
Fairly high	16	9.1	159	90.9	Ref			
Perception of working conditions								
Poor	21	12.7	144	87.3	3.03(1.01-9.12)	**0.049**	2.15(0.66-6.98)	0.205
Good	4	4.6	83	95.4	Ref		Ref	
Received promotion								
Yes	5	7.7	60	92.3	0.69(0.25-1.94)	0.487		
No	20	10.7	167	89.3	Ref		Ref	
Good relationship with the supervisor								
Yes	17	7.8	201	92.2	0.28(0.11-0.70)	**0.007**	0.25(0.09-0.67)	**0.006**
No	8	23.5	26	76.5	Ref		Ref	

C*OR= Crude Odds Ratio; AOR= Adjusted Odds Ratio; CI= Confidence Interval; Ref= Reference*

dropout goes high.

This study evaluated the factors associated with drop out among CHWs in Musanze district, Rwanda. Due to organizational approach that the researchers used, the outcomes of this study is specific to CHWs of the area under the study, and may not be attributed generally to the whole country's health facilities.

CONCLUSION

One out of ten CHWs in three sectors of Musanze district were dropped out during four years period and lack of regular incentives was mentioned as key reason for leaving the job. Furthermore, the multivariate analysis revealed that being single, being engaged in business and relationship with supervisors were independently associated with drop outs.

A regular and sustainable remuneration stipend and complement it with other rewards, which may include financial and non-financial incentives may improve the retention of CHWs in Rwanda. A further study on countrywide level using both qualitative and quantitative methods should be conducted to assess factors contributing on both dropout and attrition among CHWs. Furthermore, exit interviews with community health workers who have already left the health system could be used in order to identify the specific factors that finally push community health workers to leave their work and to inform the concerned establishments.

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