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Assessment of individual demographic factors influencing the performance of community health workers in Katavi Region, Tanzania

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Abstract: The role of Community Health Workers (CHWs) in reconnecting HIV patients with treatment cannot be ignored. However, in regions with low HIV prevalence, like Katavi (3.8%), their effectiveness is not well comprehended. Therefore, to appraise the performance of CHWs in tracking back to the treatment of HIV patients, the study focused on some individual demographic factors affecting the performance of CHWs in the Katavi region. The study employed a cross-sectional design, collecting data from 138 CHWs using questionnaires that focused on individual demographic factors. The significance of factors affecting CHW performance was assessed using Logistic regression. The performance of CHWs was generally positively ranked at 77.7%. Significant individual demographic factors included age and education level, with educational qualifications showing a stronger impact (OR 6.25, 95% CI 1.17 - 33.37, p=0.032 for certificates; OR 0.26, 95% CI 0.09 - 0.72, p=0.010 for secondary education) compared to age (OR 5.09, 95% CI 1.32 - 19.50, p=0.006 for ages 26-35; OR 0.07, 95% CI 0.00 - 0.68, p=0.036 for those over 45). While the performance of CHWs was commendable (77.7%), it is crucial to address the factors affecting their performance to effectively combat new HIV infections.

Keywords – Community Health Workers, HIV Patient Reconnection, HIV Prevalence, Individual demographic factors, Treatment retention

1. INTRODUCTION

The origins of Community-based Health Services in Tanzania started in 1967 during the Arusha Declaration. It was initiated by the late President Julius Kambarage to address persistent health issues, including HIV/AIDS, the health of mother and child, nutrition, malaria, tuberculosis, and sexual and reproductive health for adolescents. These services are essential for increasing patient turnout with critical health conditions at health facilities (National Operational Guideline for CBHS, 2021). Community Health Workers (CHWs) who are volunteers are responsible for making follow-ups on HIV patients who did not return to the health facilities to take their antiretroviral therapy (ART) and connecting new HIV-positive diagnosed individuals to get health services in care and treatment clinics (CTC).

Globally, approximately 39 million individuals were living with HIV by the end of 2022, of whom around 1.5 million are children aged 0-14 years. In 2022 alone, it is estimated that 1.3 million people were diagnosed with HIV

globally. In addition to that, 630,000 deaths, which were reported in 2022, were associated with HIV (WHO, 2023). In Tanzania, Zanzibar has the lowest prevalence at 0.4%, while Njombe shows the highest at 12.7%. As of 2022, Tanzania reported that 82.7% of HIV patients were aware of their status, with 97.9% receiving antiretroviral therapy (ART) and 94.3% achieving viral suppression (THIS, 2022-2023). Katavi, a western region of Tanzania, has a population of approximately 1.2 million (Tanzania Census, 2022) and includes three districts—Mpanda, Tanganyika, and Mlele. The region has 134 health facilities, consisting of 100 dispensaries, 25 health centers, and 9 hospitals (Tanzania Census, 2022), with an HIV prevalence of 3.8% (THIS, 2022-2023). One of the key strategies to prevent new HIV infections in Katavi is to provide adequate community-based health services (National Operational Guideline for CBHS, 2021).

However, achieving Universal Health Coverage (UHC) is under threat due to a predicted shortage of 18 million health workers by 2030. Community-based health systems that effectively mobilize CHWs could link communities to care for and address unmet health needs caused by this shortage (Idris et al., 2024). According to WHO (2020), CHWs are those healthcare providers who serve the communities that they live in, the majority have low formal education, and they lack the fundamental required training as compared to health workers who are professionals. However, this group is critical in making sure health services are extended to those residing in rural, remote areas of the Katavi region, and by doing so, they improve the accessibility of health services and reduce health inequities.

Although the government has made considerable efforts to develop community-based health services, including creating guidelines for CHWs that outline their roles, service delivery methods, reporting systems, and management practices, there remains a challenge of HIV patients not adhering to treatment (National Operational Guideline for CBHS, 2021). Approximately 31% of HIV patients have not visited health facilities for over three months, with only 8% confirmed deceased. Non-adherence to treatment can lead to hospitalization, treatment failure, a heightened risk of opportunistic infections, and an increased prevalence of new infections. Further, according to Mushy et al. (2023), CHWs also must trace back HIV patients who have been missing appointments to return to treatment, emphasizing the necessity to re-evaluate their performance and contributions.

Personal characteristics that affect CHW performance, directly and indirectly, may be connected to the difficulties experienced. Their effectiveness can be greatly influenced by these individual aspects, which include age, experience, personality, education level, confidentially, attitude, and disability status (Boon et al., 2012). Since these factors are mostly under the control of the individuals themselves rather than their employing organizations, it is critically important that they be evaluated early during the CHW recruitment process to ensure the selection of suitable applicants (National Guidelines for the Management of HIV and AIDS, 2019).

Given the significance of the UNAIDS targets for eliminating new HIV infections and the role of CHWs in these strategies, it is essential to understand their contributions and assess individual demographic factors that may influence their performance. For the decision-makers to get insights on whether to keep using the Community-Based Health Services (CBHS) approach or to find another approach to improve treatment outcomes in addressing HIV/AIDS, policymakers have to understand the level of performance of these CHWs and how these individual demographic factors are affecting their performance. Therefore, the main focus of this study is to evaluate the individual demographic factors associated with the performance of CHWs in the Katavi region of Tanzania.

2. LITERATURE SURVEY

2.1. Community Health Workers' performance

A descriptive cross-sectional study was conducted by Mushi et al.(2019) on how the Back to Care Initiative (B2CI) has reduced the loss of follow-up to clients living with HIV/AIDS in the Kongwa District in Dodoma. This study was conducted in six health facilities in Kongwa. Purposive and random sampling techniques were used to obtain 35 key informants and 305 patients living with HIV/AIDS. Stata software was employed to analyze quantitative data, while qualitative data were summarized using Atlas.ti software. This study revealed that the use of tracking registers, adherence to counseling, and healthcare worker confidentiality improve patients' retention in treatment. In addition,

this study highlighted CHWs as individuals who contribute to helping patients return to treatment. This study is silent on institutional factors that may influence the retention of patients in treatment, but also on the extent to which CHWs contribute.

Another study was conducted by Brandon et al. (2020) aimed at knowing patients' perspectives on the helpfulness of a community health worker program for HIV care engagement in Tanzania. Two health facilities were selected, and 23 HIV/AIDS patients from those facilities were recruited in this study. Qualitative data were collected from selected patients via interviews, and data were analyzed through an inductive, team-based qualitative approach. Most participants found this program very helpful and recommended an increase in the number of CHWs so they could reach more people living with HIV/AIDS. Despite the information obtained from this study, there was no information regarding factors that influence CHWs' performance.

Abdullateef et al. (2023) examined CHWs' commitment to HIV/AIDS control in Africa where data used were obtained from various databases such as PubMed, ResearchGate, Google Scholar, websites of the Centers for Disease Control and Prevention (CDC), and the Joint United Nations Program on HIV/AIDS (UNAIDS). Twenty-two studies that met the eligibility criteria were taken for analysis. It was concluded that CHWs have contributed much in tracking back HIV/AIDS patients into care which resulting in a 20% reduction in the rate of HIV incidence in some communities that benefited from them. Again, this study has not taken into account factors that may influence the performance of CHWs.

2.2. Individual demographic factors

Davoust et al. (2022) in a study titled "He Gave Me Spirit and Hope: Client Experiences with the Implementation of Community Health Worker Programs in HIV Care", examined the individual factors that influenced CHW performance in tracking back HIV patients into treatment. This study was conducted in the United States, where qualitative methods were used to understand patients' perceptions on CHWs' involvement in HIV/AIDS interventions. 30 patients were selected from 6 different HIV/AIDS clinics. The study found that Community Health Workers (CHWs) are highly valuable due to their caring nature, trustworthiness, positive attitudes, and consistent availability when needed. However, this study failed to assess the performance of CHWs in tracking back HIV/AIDS patients to treatment.

A study was conducted in Kenya by Rachlis et al. (2016) on community perceptions of CHWs and their roles in the management of HIV, Tuberculosis, and Hypertension in western Kenya. Among other objectives, this study sought to understand community members' views on how CHWs carry out their duties and to identify the factors that influence their performance. A sample of 207 community members, including 110 individuals living with HIV/AIDS, was interviewed. Most respondents identified confidentiality and being knowledgeable as individual factors that influence CHWs' performance. This study did not assess CHWs' performance in tracking back HIV/AIDS patients to treatment.

Mushi, et al. (2019) conducted a study titled "Reducing Loss to Follow-up among Clients Living with HIV through Back to Care Initiative in Kongwa District in Dodoma" which suggested that among other reasons, CHWs individual factors such as age, sex, confidentiality, and education level influence their role of bringing back to care HIV/AIDS patients. This study did not highlight institutional factors such as the working environment of CHWs, which may influence their performance.

2.3. Social Cognitive Theory

Social Cognitive Theory was advocated by Albert Bandura in 1974. This theory is a cognitive formulation of social learning that explains human behavior as a dynamic interaction between personal factors, environmental influences, and behavior. According to social cognitive theory, performance is the result of personal factors, environmental

influences, and behavior. It combines elements from cognitive, behavioral, and emotional theories of behavior change, highlighting the role of observational learning, reinforcement, self-regulation, and self-efficacy in shaping behavior. This means that there might be differences in performance between two people working in different environments and having different individual demographic factors. Additionally, individual differences in behavior can influence performance in varying ways.

This theory highlights the importance of motivation and the ability of individuals to learn from others through observation, imitation, and modeling. Effective role models inspire trust, admiration, and respect, which can influence the observer's behavior and ultimately enhance their performance. The theory is highly relevant to the current study as it illustrates how individual demographic factors such as age, gender, education level, training, and motivation are linked to performance.

3. PROBLEM STATEMENT

Despite government efforts to enhance community-based health services, including the development of guidelines for community health workers (CHWs), a significant issue remains: HIV patients are not adhering to treatment. Evaluating the performance of CHWs is essential to understand their impact on patient retention, as they play a key role in tracking and following up with patients who miss clinic appointments (Mushy et al., 2023). Several studies have been conducted on the community perception of the role of CHWs in HIV patients' retention in treatment. For example, Brandon et al. (2020) performed a study aimed at knowing patients' perspectives on the helpfulness of a community health worker program for HIV care engagement in Tanzania and most participants of the study found this program very helpful and recommended an increase of the number of CHWs so they can reach more people living with HIV/AIDS.

Abdullateef et al. (2023) examined CHWs' commitment to HIV/AIDS control in Africa and revealed that CHWs contributed much in tracking back HIV/AIDS patients into care, which resulted in a 20% reduction in the rate of HIV incidence reported. Similarly, Rachlis et al. (2016) in a study titled "Community Perceptions on CHWs and their Roles in Management of HIV, Tuberculosis and Hypertension in Western Kenya" pointed out CHWs involvement in retaining HIV patients to treatment as one of the key strategies in increasing patients' adherence to treatment. Decision-makers will be in a better position to decide whether to stick with the Community-Based Health Services approach for HIV/AIDS or to find a better option by evaluating the performance of CHWs together with individual characteristics that may affect their performance. Thus, this study aims to assess the performance of CHWs specifically in tracking back HIV patients in treatment, and examine the applicability of individual demographic factors associated with their performance.

4. RESEARCH METHODS

A population of 211 Community Health Workers (CHWs) in the Katavi region (Tanzania HMIS, 2024), who are responsible for monitoring HIV patients regarding their treatments, was examined through a cross-sectional study. A sample of 138 CHWs was identified using Yamane's formula, and thereafter, purposive and simple random sampling techniques were used to select the sample size. The tracking registers, together with the semi-structured questionnaire designed specially to collect information on individual demographic factors influencing CHWs' performance. The choice of the Katavi Region as a study area is based on the fact that it is a newly established region from the Rukwa region, whose health system is not well established, but also has no adequate number of human resources, especially health professionals (NBS, 2022-2023). Data combined both primary and secondary sources of information. Performance data were collected by reviewing tracking registers over six months, from February to July 2024. The quantitative data collected were analyzed using STATA version 14, employing both descriptive statistics and logistic regression to evaluate the significance of various individual factors influencing CHWs' performance. A

p-value of less than 0.05 was considered statistically significant.

5. RESULTS AND DISCUSSIONS

5.1. Age distribution

The age distribution of community health workers (CHWs) shows that a sizable percentage of respondents (42.8%) fall between 36 and 45 years (Table 1). This age range is considered to be very appropriate and generally expected to perform better than their younger counterparts. The age cohort reflects a workforce that is both experienced and mature, probably benefiting from years of community health activities and continued training (Crispin et al., 2012; Smith et al., 2019). Interestingly, younger demographics especially those between the ages of 18 and 25 (20.2%) and 26 and 35 (22.5%), also made a sizeable portion, suggesting that there are younger professionals among a largely middle-aged workforce. The age range suggests that most CHWs are in a stage of their careers where they can combine passion with useful expertise.

5.2. Gender

Slightly more males, accounting for 56.5%, were recruited as CHWs, indicating a notable level of gender inclusion (Table 1). Lehmann and Sanders (2007) observed that the gender makeup of CHWs varies, with women often occupying leadership roles in many programs. Additionally, Crispin et al. (2012) found that women generally performed slightly better than men. Conversely, a male-dominated CHW program in Somalia faced challenges because male staff members were unable to effectively engage with female community members (Bentley, 1989). In most societies often leadership is traditionally associated with men and spouses may oppose their wives becoming CHWs (Brown et al., 2006). However, this was not the case in the Katavi region.

5.3. Educational background

The educational backgrounds of the participants revealed that 47.8% of CHWs have completed primary school, whilst 30.4% have finished secondary school, and 21.8% have some sort of other qualifications (Table 1). Neff et al. (2020) contend that CHWs with only an elementary education may lack the necessary knowledge and abilities to handle complicated community health concerns. Thus, to improve community health outcomes in primary health practices, CHW proficiency must be continuously improved through training (Neff et al., 2020; Metzl & Hansen, 2014; Logan, 2020). Training will reduce the negative sentiments that often blame treatment failures exclusively on a lack of patient motivation. It further enables CHWs to understand the underlying structural, disease-related, and personal variables influencing patients' adherence to medical regimens.

5.4. Facility representation

As Katavi is a newly established region with an underdeveloped health system, the majority of CHWs (55.1%) come from dispensaries, followed by 39.86% from health centers, and the smallest proportion (5.07%) from hospitals. Although residents in the study area may encounter difficulties accessing specialized health services because of the limited number of hospitals, the abundance of dispensaries helps provide basic healthcare to patients in remote locations before they are referred to nearby hospitals or regional facilities (Khan et al., 2019).

5.5. Disability status

CHWs who were disabled comprised only 8.7% of the respondents. However, concerns are raised on the issue of inclusivity and how individuals with disabilities are represented in the community of CHWs, which may affect operational efficiency. Thompson et al. (2019) argue that increasing the involvement of experts with disabilities can enhance service quality and diversity, thereby advancing health equity.

5.6. Training

Amazingly, all participants reported receiving extensive training, underscoring the importance of structured programs for sustaining standardized practices among CHWs (Table 1). To improve their performance and address evolving health challenges in the communities they serve, CHWs need to acquire the necessary skills and knowledge through continuous training (Anderson et al., 2019). Training helps build trust in community healthcare providers, which in turn enhances the delivery of health services. This is supported by Kalyango et al. (2012) and Wanduru et al. (2016), who highlighted the importance of regular refresher training for CHWs to improve and update their skills and knowledge, leading to better performance. The study findings revealed that all respondents had participated in refresher courses, indicating that they are expected to perform according to program standards. Sinyangwe et al. (2016) also emphasized that training, along with access to improved diagnostic tools suitable for resource-limited settings, is crucial for enhancing diagnostic accuracy.

5.7. Patient confidentiality

Concerns about patient confidentiality were significant, with 83.3% of community health workers (CHWs) reporting that they did not have proper storage options for patient records. Only 9.4% of CHWs reported having designated storage areas for patient information at health facilities, highlighting an urgent need for improved health record management systems. This underscores the importance of building trust and delivering effective health services through maintaining patient confidentiality. Without assurance that their sensitive personal information will remain confidential, patients may be reluctant to share details, leading to reduced engagement with CHWs, who typically operate outside formal health facilities (Geldsetzer et al., 2017).

5.8. Availability of working gear

Almost half of the CHWs (48.55%) reported lacking sufficient working equipment, which greatly hinders their effectiveness and the quality of care they are able to deliver. A lack of resources and appropriate tools can impede their ability to deliver comprehensive services, especially in resource-limited or rural areas. Pandya (2022) emphasized that CHWs require protective equipment such as gumboots, raincoats, and umbrellas, as well as carrying cases for supplies like medicines, and mobile devices to effectively carry out their duties. However, CHWs have previously reported that these items were only provided during infrequent training sessions. Often featured branding from partner organizations or specific public health campaigns, meaning they do not receive regular access to these essential tools.

Table 1: Participants' Information (n=138)

Variables	n (%)
Age (years)	
18-25	28 (20.2)
26-35	31 (22.5)
36-45	59 (42.8)
45+	20 (14.5)
Sex	
Male	78 (56.5)
Female	60 (43.5)
Education level	
Primary	66 (47.8)
Secondary	42 (30.4)
Certificate	30 (21.8)
Number of sampled CHWs per facility level	
Dispensary	76 (55.1)

Health centre	55 (39.86)
Hospital	7 (5.07)
CHW's disability status	
Disabled	12 (8.7)
Not disabled	126 (91.3)
Attended CHW comprehensive training	
Yes	138 (100)
No	0 (0)
Confidentiality of patient's details	
Stores documents at health facility	13 (9.4)
Stores at home	115 (83.3)
No specific area for storing documents	10 (7.3)
Availability of working gears	
Yes	71 (51.45)
No	67 (48.55)

Source: Research data, 2024

5.9. Health facilities information

Health facilities are defined as structures where individuals seek health checkups and treatment services, including those for HIV/AIDS. Table 2 presents essential information regarding health facilities and community health workers (CHWs) in the studied area.

5.10. Health facilities distribution

Dispensaries make up the majority of health facilities, comprising 67.2% (n=45), followed by health centers at 28.3% (n=19), with hospitals accounting for just 4.5% (n=3). This distribution indicates a predominance of primary health facilities, which are essential for delivering fundamental health services to the community. Azevedo (2017) emphasizes that a well-functioning health system requires financial, social, economic, environmental, and workforce resources, alongside committed leadership focused on the needs of vulnerable populations, such as the poor, sick, and disabled. These factors contribute to the complexity and challenges of managing health. The concentration of dispensaries aligns to ensure that primary health services are readily accessible at the community level (World Health Organization, 2020).

5.11. Distribution of community health workers

A considerable proportion of CHWs are located in health centers (54.9%), in dispensaries. The relatively low percentage of CHWs in hospitals (7.0%) reflects the primary focus of hospital services on acute care, rather than on community outreach and engagement.

The reliance on health centers for CHWs indicates their vital role, as they are significantly closer to most community members (Sultan et al., 2025). Tanzania has implemented a decentralized health system with three tiers: primary, secondary, and tertiary (URT, 2003). The primary health level has been designated as the focal point for health service planning, provision, and program execution (URT, 1998). According to Munga and Maestad (2009), districts are responsible for the recruitment, deployment, and retention of health workers. In this regard, community engagement at all levels of decision-making and implementation is essential for fulfilling the objectives of closer service access.

5.12. Proximity of CHWs to Health Facilities

The data indicates that most CHWs (94.93%) live more than 500 meters from their health facilities, which may create

challenges in accessibility and timely service provision. Only about 5.07% reside within 200-500 meters of their facilities, suggesting a possible barrier to effective health promotion and response within the community (Kamal-Yanni et al., 2012).

5.13. Cooperation levels

The level of collaboration between health facilities and CHWs is assessed through their cooperation. A significant percentage of CHWs, 92.8%, described health facilities as 'somewhat cooperative,' while only a small fraction (1.4%) found them very cooperative. However, only 1.5% indicated they were very cooperative. Likewise, community members demonstrated a high level of cooperation with CHWs, with 90.6% reporting they were 'somewhat cooperative'. This underscores the importance of community engagement and support for CHWs, which is crucial for their effectiveness and outreach efforts. These results indicate that while cooperation is satisfactory, there remains substantial potential for improvement to enhance collaborative efforts and achieve better health outcomes. According to Perry et al. (2013), the strength of the health system positively correlates with the integration of CHW programs. When health systems are underdeveloped and resources are scarce, CHW programs often operate as supplementary efforts to expand service coverage or address unmet health needs, which can result in poor integration with the broader health system.

Table 2: Health facilities information

Variables	Total (%)
Number of facilities per level	
Dispensary	45 (67.2)
Health centre	19 (28.3)
Hospital	3 (4.5)
Total number of CHWs in sampled facilities	
Dispensary	152 (38.1)
Health centre	219 (54.9)
Hospital	28 (7.0)
Distance from HF to CHW's residence	
200 – 500 meters	7 (5.07)
More than 500 meters	131 (94.93)
Health facility cooperation with CHWs	
Not cooperative at all	8 (5.8)
Somehow cooperative	128 (92.8)
Very cooperative	2 (1.4)
Community member's cooperation to CHWs	
Not cooperative at all	11 (7.9)
Somehow cooperative	125 (90.6)
Very cooperative	2 (1.5)

Source: Research data, 2024

5.14. The Performance level of CHWs in re-engaging HIV Patients with treatment

To assess the performance level of community health workers (CHWs) in re-engaging HIV patients with treatment, tracking registers were utilized to determine the total number of HIV patients that needed to be followed up by CHWs, as well as those who had been successfully tracked in the previous six months (February – July 2024). The following formula was applied to calculate the performance level of the CHWs.

$$\textbf{CHWs performance} = \frac{\boldsymbol{Tracked\ back\ by\ CHWs}}{\boldsymbol{Total\ to\ be\ tracked}} = \frac{\mathbf{9,114}}{\mathbf{11,730}} = \mathbf{0.777}$$

The performance of CHWs in bringing HIV patients back to treatment was found to be high at 77.7%, which is a good performance based on the performance scale (≥75%). Regardless of the various challenges that CHWs face in their daily activities, their performance is praiseworthy. A study conducted in the Kongwa district, Dodoma Region (Mushi and Lukwaro, 2019) examined how the Back to Care Initiative (B2CI) has mitigated loss-to-follow-up among clients living with HIV/AIDS. The findings of this study indicated that strong CHW performance was largely influenced by factors such as the use of tracking registers, patient compliance with counseling, and the confidentiality upheld by healthcare workers.

The role of CHWs in engaging patients back to treatment is well recognized and appreciated. This is supported by Brandon et al. (2020), whose study examined the effectiveness of CHW programs in promoting HIV care engagement in Tanzania from the patients' point of view. Their findings revealed that the strong performance of CHWs contributed highly to the performance of the program as well as to the extent that they proposed increasing their numbers so that more individuals living with HIV/AIDS can be reached. Further, a study on CHW's Commitment to HIV/AIDS Control in Africa by Abdullateef et al. (2023), appreciated the roles played by CHWs in engaging HIV/AIDS patients back to treatment and this reduced HIV incidence rates by 20% in some communities. Moreover, the five CHW coordinators interviewed (key informants) indicated that over the past six months (February – July 2024), CHWs maintained a performance level classified as good (75.6%). Figure 1 illustrates the performance level of CHWs in tracking HIV patients for treatment.

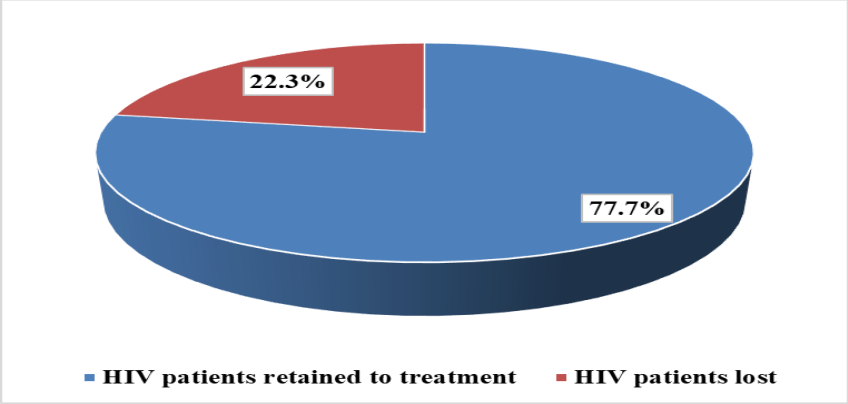

Figure 1: Level of CHW Performance in Tracing Back to Treatment HIV Patients (Source: Research data, 2024)

5.15. Individual demographic factors affecting CHW performance

Age

The CHWs between 36 to 45 years of age and 26 to 35 years of age had a notably higher performance rate of 81.5% and 80.5% respectively) as compared to those in the 18-25 age group, with the association which is strong and positive (OR = 5.09; p = 0.006). Based on these findings, it is suggested that age is one of the crucial factors influencing the performance of CHWs positively. This may be due to younger individuals not being willing to relocate to remote areas where some HIV patients live, and they are not capable of quickly assimilating new knowledge. A study by Mbugua (2022) also found that age was significantly linked to performance, with CHWs aged 40-49 showing better outcomes (P =0.022) compared to those in other age brackets. This may be because many participants in this age group are married and established, allowing them to manage the additional responsibilities of community service and family support, in contrast to younger and older peers. Similar findings from Kenya indicated that the age group of 30-40 years achieved optimal performance (Ndedda et al., 2012), while younger and older CHWs were associated with suboptimal performance. However, contrasting results were reported in Uganda, where age was determined not to impact CHW performance (Källander et al., 2006).

Gender

Male CHWs exhibited a performance rate 80.4%, while females registered 74.2%. Nonetheless, this difference was not statistically significant, consistent with previous research by Jones & Taylor (2019). The absence of a substantial impact from gender suggests that gender-targeted interventions may not be necessary for enhancing performance.

Level of education

CHWs holding a certificate demonstrated the highest performance (86.7%), showing a strong correlation with performance (OR = 6.25; p = 0.032) and indicating that education level is a vital factor influencing CHW effectiveness. Younger workers (aged 26-35) and those with higher educational qualifications (certificate holders) showed improved performance. Smith et al. (2019) suggested that focused recruitment and training programs could bolster overall CHW efficiency. A study by Mitei et al. (2018) highlighted the increasing recognition of the essential roles CHWs play in delivering health services within low and middle-income countries, underscoring the need to possess the required knowledge and skills to fulfill their expanding responsibilities effectively. Proper training for both new and existing CHWs on various topics and skills is therefore vital to ensurethey can provide quality health education and services to their target populations.

Disability status

Disabled Community Health Workers (CHWs) demonstrated slightly improved performance, although this variation was not statistically significant (p = 0.334). However, research by Bulk et al. (2017, 2019) highlights several challenges faced by this group, including potential discrimination and stigma, educational barriers that hinder participation, misconceptions and stereotypes surrounding disabilities, and lowered expectations. Additionally, individuals may hesitate to request certain accommodations out of fear of being perceived as less capable.

Confidentiality

CHWs who maintained documents at home exhibited better performance compared to those who kept them in health facilities (77.7% against 73.6%), although this difference was not statistically significant (OR = 1.90; p = 0.418). As noted by Tariq and Hackert (2025), safeguarding patient healthcare data is crucial for all healthcare professionals and institutions, particularly in our rapidly advancing information technology landscape. In the past, healthcare workers typically collected patient information for research purposes while excluding patients' names. However, current regulations require that any identifiable protected health information (PHI) related to patients, their family members, employers, or household members must be removed before use in research (Tariq & Hackert, 2025).

Table 3. Effects of Individual Demographic Factors on CHW Performance

Variables	Target	Performance Actual (%)	OR (95% CI)	p-value
Age (years)				
18-25	412	308 (74.8)	Ref	Ref
26-35	452	364 (80.5)	5.09 (1.32 - 19.50)	0.006
36-45	806	655 (81.3)	3.35 (1.08 - 10.41)	0.036
45+	285	192 (67.4)	0.07 (0.00 - 0.68)	0.022
Sex				
Male	1,101	885 (80.4)	Ref	Ref
Female	854	634 (74.2)	0.63 (0.25 - 1.61)	0.341
Education level				
Primary	952	746 (78.4)	Ref	Ref
Secondary	590	415 (70.3)	0.26 (0.09 - 0.72)	0.010
Certificate	413	358 (86.7)	6.25 (1.17 - 33.37)	0.032

Disability status				
Disabled	176	146 (83)	Ref	Ref
Not disabled	1,779	1,373 (77.2)	2.27 (0.42 - 12.11)	0.334
Confidentiality				
Stores docs at HF	174	128 (73.6)	Ref	Ref
Stores at home	1,637	1,272 (77.7)	1.90 (0.40 - 9.03)	0.418
No specific area	144	119 (82.6)	12.55 (0.81 - 193.36)	0.070

Source: Research data, (2024).

6. RESEARCH IMPLICATIONS

Government

There is a need to enhance collaboration between health facilities and CHWs by fostering teamwork and communication. Increased funding focused on training, resources, and support for CHWs is essential, along with ensuring that CHWs receive formal recognition within national health policies to promote cohesive health service delivery.

Health facilities

Leaders within health facilities should implement regular training programs and workshops to enhance teamwork and mutual understanding between healthcare staff and CHWs. This should be supported by regular evaluations to assess the collaboration and effectiveness between CHWs and health facility staff, fostering ongoing improvement.

Community health workers

CHWs should actively engage in educating community members about various health issues and gather feedback regarding community needs. They should conduct outreach initiatives to raise awareness about health programs and encourage community involvement, which can be facilitated by building strong relationships with local leaders to support health initiatives.

Community leaders

Community leaders play a crucial role in ensuring that health awareness campaigns are effectively received, acting as intermediaries among the community, CHWs, and healthcare services.

7. CONTRIBUTIONS TO SCIENTIFIC COMMUNITY AND FUTURE RESEARCH

The study highlights significant individual demographic factors influencing CHWs' performance, including age and education level. This information is vital for healthcare, policymakers, and organizations linked to CHW effectiveness, thus informing future recruitment and training strategies. The study emphasizes the importance of ongoing training and professional development for CHWs, especially given that many have only attained a primary level of education. Also, the study points out existing deficiencies in the operational guidelines for CHWS, especially concerning their educational background, training, and incentives they require. This insight could encourage healthcare authorities to refine their policies and be better prepared to support their communities.

By exploring the interactions among CHWs, health facilities, and the communities they serve, the study underscores the importance of collaboration and effective communication. It proposes actionable implications for improving health delivery systems through enhanced teamwork and community engagement.

The study emphasizes key individual demographic factors that influence the performance of Community Health Workers (CHWs). Future research should consider additional demographic factors, including socioeconomic status, gender roles, and regional cultural influences that may impact CHW effectiveness.

A notable link exists between education level and performance. Research could delve into the efficacy of various training methodologies and curricula to highlight best practices for training CHWs in resource-limited settings. Further studies could also explore the obstacles faced by CHWs, such as the adequacy of support from health facilities and community involvement, paving the way for targeted interventions. Conducting comparisons with CHWs in different regions that have diverse HIV prevalence rates or healthcare systems can offer broader insights into the common challenges and achievements of community health initiatives.

8. CONCLUSION

The results of this study indicate that Community Health Workers (CHWs) performed well in following up with HIV patients who have discontinued treatment, encouraging them to resume care. Certain personal factors, particularly age and education, significantly influence the performance of CHWs, highlighting the importance of having trained and knowledgeable health workers. The current health facility structures show that the community heavily relies on these facilities to address their health needs. However, challenges such as the distance between CHWs and health facilities, along with inconsistent coordination between CHWs and the community, as well as between community workers and health facilities could negatively impact the effectiveness of health initiatives in the community.

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