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Original Article

Understanding Socio-Demographic Factors Among Community Health Volunteers in Nyandarua County, Kenya

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ABSTRACT

Community health volunteers (CHVs) operate as volunteers at the community level where they live. Their needs assessment has been forgotten since 2006 when their recruitment started and therefore their personal data is lacking or inadequate. General profiling of CHVs is a common gap yet their profiles impact community health. This study assessed their socio-demographic factors in a cross-sectional descriptive method using self-administered questionnaires. The sample size, n= 348 (N=1,390) was determined through the Yamane formula with a CI of 95%. Data collected from randomly selected (n=30) community health units (CHUs) from all wards with a response rate of 92% (n=320) indicated that 61% were female, 91.9% were beyond 35 years old and 57% had secondary education. The married was 73.7% and 67.7% had worked 11 years or more while farmers were 88.4%. Daily incomes for 57.1% was below poverty (Ksh 200). After expert-pretesting self-administered questionnaire data was collected during a monthly dialogue meeting and analysed through Microsoft Excel before being presented in figures. Results indicated that their socio-demographic conditions were wanting. It was recommended that the County government of Nyandarua should solve gender inequality, improve succession management and tap job experiences from long-serving CHVs. Additionally, giving farming inputs support as a motivation and a gateway to self-reliance together with income generating activities (IGAs) supporting poverty eradication besides giving timely and reasonable stipends for improving their livelihoods as a boost to community health. This study potentially contributed to the profiling of CHVs as a baseline for designing effective community health programs. It suggests that their backgrounds are likely to be responsible for some health system gaps because the expectancy theory predicts that effects come from causes. However, this hypothesis was recommended for a future inferential study.

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INTRODUCTION

CHVs are volunteers and members of the communities they serve. Governments are increasingly initiating and scaling up community health where CHVs operate (WHO, 2020). Recruitment of CHVs is a key feature for their performance and retention. Community health programs for illiterate or low literacies still exist (Jaskiewicz & Deussom, 2024). Hasnain and Khan (2022) agree that societal social structures influence behaviour while Taylor and Francis (2016) see socio-demographic background as a key correlation to population concepts.

Globally, especially in low and middle-income countries (LMICs), support for CHVs is very low coupled with their unequal integration into the conventional health systems. Examples of good community health practices are not usually replicated. The available policy options are wasted opportunities because evidence-based information with strong potential for effectiveness is ignored for adoption whereas delivery of services through CHVs no doubt requires evidence-based profiles for effective management. When the needs assessments for the communities CHVs serve are frequently done, those of the CHVs themselves are not only unknown but forgotten. Therefore it becomes almost impossible to align community health services from the right backgrounds because the identification of health system needs is incomplete. Nevertheless, the forgotten and unknown CHV needs still impact the allocation of resources and end up not only in misuse but also in mismanagement. The uniqueness of CHVs, where they work and the work they are expected to do is likely to make difficult their integration into the health system and designing of their programs unless these cadres of workers have well-known and understood profiles (WHO, 2018).

Among the key principles to consider while designing a community health program WHO (2019) mentions that baseline information is a basis for policy formulation and evaluation. The voices and the perspectives of the CHVs themselves are also important for policy dialogues. Moreover, baseline information is important for their selection and retention. It is a key factor during their capacity building particularly at their pre-service and in-service training because of the uniqueness of each CHV such as their levels of education. Baseline data for CHVs is a stepping stone during the designing of their training modules which should conform to their existing profiles.

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Over the years, CHVs in Kenya have experienced key challenges despite the important role they play. For example, glaring gaps have existed in data mining and management. This has given birth to ineffective community health monitoring and evaluation. Up-to-date data on CHVs themselves is lacking. Available community health data frameworks lack a strong emphasis on the CHVs themselves. Most CHVs lack digital skills to operate the recently installed electronic community health information systems (eCHIS) gadgets which jeopardizes data quality or loss of data. In Nyandarua County, some CHVs lack the requisite mobile phones for service delivery. Some of these phones have been lost or have become faulty which further widens the community health data (eCHIS) collection and management. Therefore baseline data quality for both CHVs and the communities they serve may not only be lacking but also unreliable. Moreover, the CHV dropout (63.2%) and new recruitments over the years keep the CHV baseline data changing unless effectively updated. Their socio-demographic data too is lacking, inadequate, uncertain and unreliable, yet that background information is key for human resource for health (HRH) management (M.o.H, 2019). This study assessed the socio-demographic factors for the CHVs operating in Nyandarua County, Kenya in order to understand them. This was expected to provide some baseline data to rely on when designing their programs.

Organizations' knowledge management strategies including knowledge retention can contribute towards corporate governance and enhance the business interests of the public sector.

Statement of the Problem

Singh (2024) indicated that the general profiling of CHVs is a common gap, yet CHVs are a lifeline for communities that most likely would not access healthcare. The socio-demographic background for CHVs in Nyandarua County since 2006 when the first recruitment happened was unknown, yet it is likely to influence health system outcomes like their current high, 63.2% (n= 2,386) dropout. As a result, the CHV programs are hardly based on evidence and this study seeks to bridge that gap.

Theoretical Framework

The expectancy theory posits that there are motivations behind everything. In line with Sutton & Neuhaus (2024), the current socio-demographic background for CHVs is likely to be a basis for current, future and general community health outcomes.

LITERATURE REVIEW

While socio-demographic factors of a population may be defined differently from one study to another, generally these are the human-related factors touching on their social and population characteristics (Formplus, 2025). The operational definition for socio-demographic factors in this study comprised gender, age, religion, basic education, marital status, work experience, alternative income and average daily income for the CHVs.

Gender

The health system is a pronounced employer of women. Gender biases are evident, especially in hard-to-reach areas where male employees are more (70%) than females (30%). The Dublin forum to discuss the promotion of gender transformation and decent work for all healthcare workers (HCWs) has not changed the situation. Sometimes informal care work is seen as inferior and unfortunately for that reason, some people think that it is befitting to women (MoH, 2021; Steege et al., n.d.). WHO (2019) also confirms that globally, females are 70% of the HRH but they are isolated into low and meagre pay besides being exposed to discrimination and persistent threats of violence.

Age

The majority of CHVs in the Kuching district of Malaysia were up from 35 years old (72.4%) with an average of 42.6 (SD 12.85). The best

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performance was by those between 35- 44 years old and those who were 24 years and below. An older CHVs primary motivation is habitually philanthropic. Volunteers under the age of 30 were motivated by principles of career advancement, social responsibility, and encouragement from peers and friends (Chung et al., 2017).

The Nigerian government agreed to increase the retirement age for HCWs to 65 years from 60 and 70 for medical consultants in a move aimed at HRH retention (Ezigbo, 2022). A new report has indicated that 40% of medical doctors across a third of countries in Europe and Central Asia are next to the retirement age (WHO, 2022).

Religion

Religion is spiritual and social because it goes beyond spiritualism to a system of values or norms in a society which influences interpersonal relationships. Interpersonal relations have implications for daily lives (Benarba, 2020).

Research performed in Poland found that the religious beliefs of the potential HCWs who were students did not play a large influence in their decision to volunteer during the 2009 COVID-19 pandemic. However, there is a strong correlation between religiosity and the willingness to sacrifice for the greater good of society (Domaradzki and Walkowiak, 2021). Religion no doubt influences health and behaviors empowers the individual HCW and affects their psychological stability. Religious consciousness is a primary influence on healthcare trends (Rumun, 2014).

Basic Education

After 1963 when Kenya gained independence, the government acknowledged education not only as a basic right but also as a tool for social economic achievement (MoE, 2022). Prospective CHVs in Ethiopia attended school for not less than 10 years. Due to the rareness of educated women among pastoralists, grade six men were enrolled in shorter training programs. Higher education might as well introduce social impediments between CHVs and the low literacy community (Aitken, 2018).

While it has been established that education inequalities in Nyandarua County have nearly 62% of the population having only a primary school education and 16% lacking any formal education, only 22% had a secondary school education or above. Pre-service training for professionals is done before qualification as HCWs. Good basic education prior to the pre-service training is a precursor to good quality pre-service and in-service training for HRH professionals (WHO, 2016).

Marital Status

An Ethiopian study indicated that 62% of CHVs were married, 22% were divorced or separated and 15% were single. It had been predicted that a divorced, separated and widowed woman had a higher probability of becoming a CHV because more psychosocially vulnerable women are more likely to enter into a volunteer position. There is a need for the government to take measures to safeguard and elevate the standing of single women who volunteer their time and energy toward the betterment of their communities. More married women and their husbands could consider becoming CHVs if they were compensated for their time (Maes et. al., 2019).

A Kenyan study in Nyanza realized that married CHVs had a higher performance and in Nigeria, marital status had a high correlation with job satisfaction among primary healthcare (PHC) workers. Perhaps because family members besides their partners help them with household responsibilities. More household members are helpful in improving CHVs' performance. Fewer household responsibilities may increase the CHVs' performance and reduce their dropouts (Kawakatsu et al., 2015).

Work Experience

Ndu, et al. (2022) conclusions from their literature reviews revealed that little is known about the

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CHVs' day-to-day undertakings in spite of their critical roles within the global health systems in view of the provision of services and their role of being a supportive arm to other HCWs.

The recruitment of the CHVs in Kenya in readiness for service delivery at the community level was effected after the launch of the community health strategy in 2006 to offer preventive and promotive health services that were initially grouped among PHC activities. In the subsequent and diverse years other new recruitments have happened (Njiraini and Hussein, 2020).

Mailman School of Public Health (2023) in Columbia University Irving Medical Center has postulated that those staff who have worked for longer periods are an advantage to an organization because of their skills and experiences. They exhibit better critical thinking and absolute knowledge. Workers having families that their support is an assurance for staff retention. Many businesses have confessed that older staff are the first to arrive for a work shift and yet they remain focused the whole day.

Alternative Income

A Kilifi study postulated that lack of remuneration for CHVs clashes with their financial obligations, child care and family care among others. There is a need to remunerate CHVs and provide basic training support and entrepreneurship support for implementing suitable income-generating activities (IGAs). This would be a suitable development partnership with the Ministry of Health (MoH) and co-development partners in liaison with the CHVs themselves. Poor or no income, inadequate knowledge, skills, inadequate space, time and high turnover have been highlighted as some of the CHVs' barriers as informed by a meta-analysis (Woldie et al., 2018).

Average Daily Income

Though there is an assumption that millennials are likely to be within the low-income category, it has appeared that they are avid users of smartphones regardless of their incomes. They rely on smartphones for their access to the internet. Of interest, individuals of low income had more use of downloaded apps when compared to the higher income earners. It can be hypothesized that low-income earners could be using downloaded apps than high-income individuals because it could be their single access to the internet. The low-income people also prefer the use of downloaded phone apps for saving money as indicated by the high number of money and vouchers (Admin, 2022).

MATERIALS AND METHODS

Research Design

This was a cross-sectional descriptive study that Thomas (2021) noted that it focuses on a single moment in time as opposed to the interrogation of a long-term trend.

Sample Size

The desired sample size was calculated through the Yamane (1967) sample size formula (1);

$$n = \frac{N}{1 + N\,(e)^{2}} = 348, \qquad (1)$$

In the formula, n (348) was the desired sample size, N (1,390) was the target population, e (0.05) was the degree of accuracy at a 95% confidence interval (CI) and 5% was the margin of error. Adam (2020) recommends this formula for a finite target population. The target population, 1,390 (36.8%) was the number of CHVs retained in service of the County government of Nyandarua after the dropping out of 63.2% (n=2,387) since 2006 when the first recruitment and training started.

Sampling Techniques

From all the 25 wards of the county, one community health unit (CHU) per ward and one another CHU from each of the 5 sub-counties for data backup were randomly selected and interviewed. In all these CHUs (n=30) a census was conducted during a

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usual monthly dialogue meeting. Data was collected through self-administered questionnaires on the same day and time across the County. It was then coded, recorded, cleaned and analyzed through Microsoft Excel. The results are presented in figures.

Pre-Testing

The self-administered questionnaires underwent an expert review using a Likert scale per question by 33 community health extension workers (CHEWs) before their final alignment. CHEWs as community health experts are the ones bestowed with the responsibility of supervising the CHVs directly. The majority, n= 23 (71%) strongly agreed and 26% agreed that the questions represented the intended study constructs (concepts). Iskart (2019) confirms that expert reviews are ideal for pretesting data tools because they provide varying levels of rigour when used.

Validity and Reliability

The random selection of 25 CHUs from all the 25 County Wards and the addition of 5 more CHUs was expected to promote internal validity. This was because a large sample promotes data quality, reduces the margin of error and increases the confidence level (Hotjar, 2023). Face and construct validity also was expected to improve by the use of expert pretesting mentioned above. A review of data collection tools after their pretesting and the use of a similar data collection tool across the desired sample population was expected to improve reliability.

Logistical and Ethical Considerations

Permits and consents were obtained from Kenyatta University, the National Commission of Science, Technology and Innovation (NACOSTI), the Department of Health Services, the County Commissioner's office and the County Director of Education in Nyandarua County. Respondents signed the informed consent forms and confidentiality was upheld by coding the data collection tools.

RESULTS

Figure 1: Response Rate

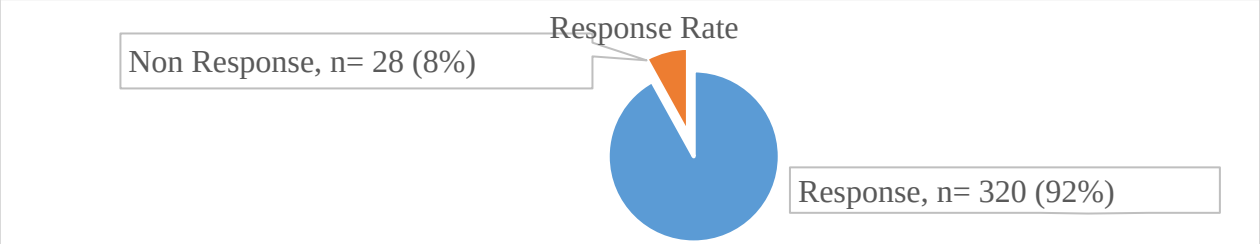

Figure 1 above shows that the majority (92%) of the respondents were interviewed.

Figure 2: Respondents' Gender

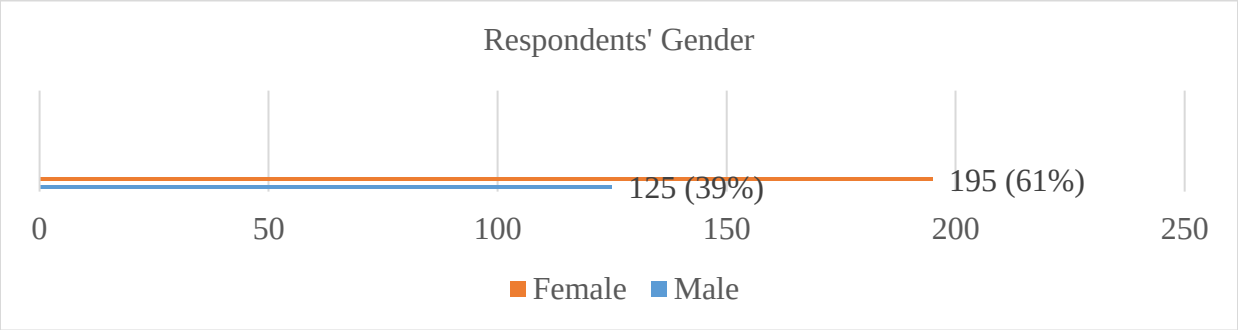

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Figure 2 above indicates that most (61%) of the respondents were female.

Figure 3: Respondents' Age

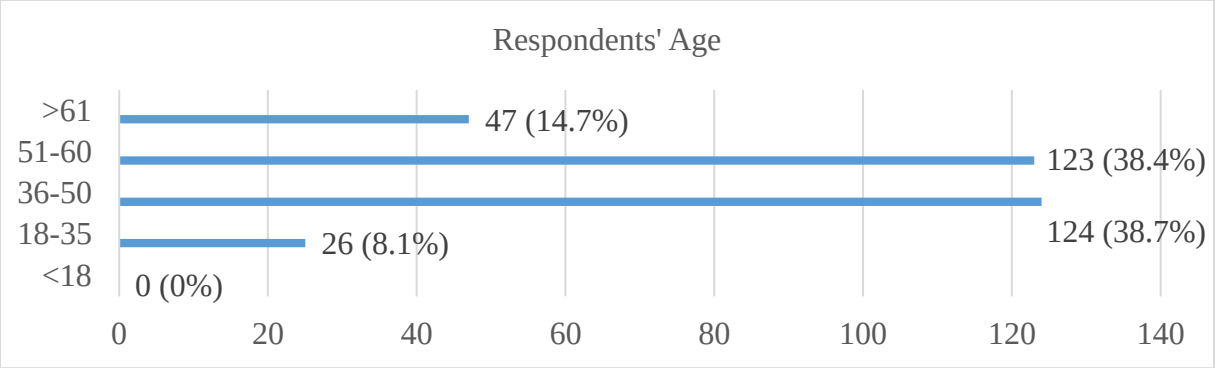

Figure 3 above shows that almost all (91.9%; n= 294) CHVs were above 35 years old and the youths (18-35 years old) were only 8.1%; n= 26.

Figure 4: Respondents' Religion

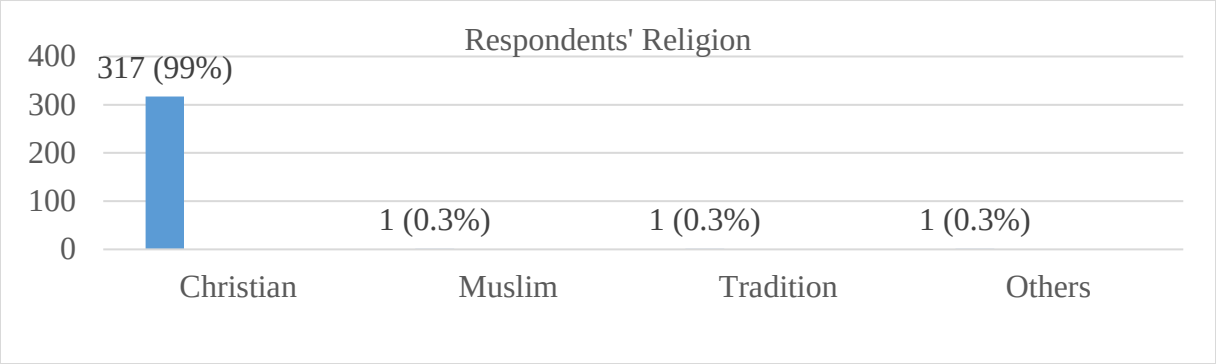

Figure 4 above indicates that most (99%) of the respondents were Christians.

Figure 5: Respondents' Basic Education Level

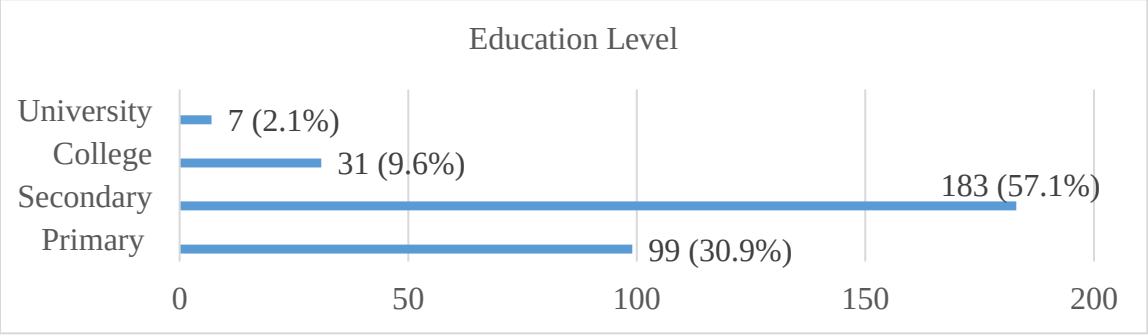

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Figure 5 above displays that more than half (57%) of the respondents were of secondary education.

Figure 6: Respondents' Marital status

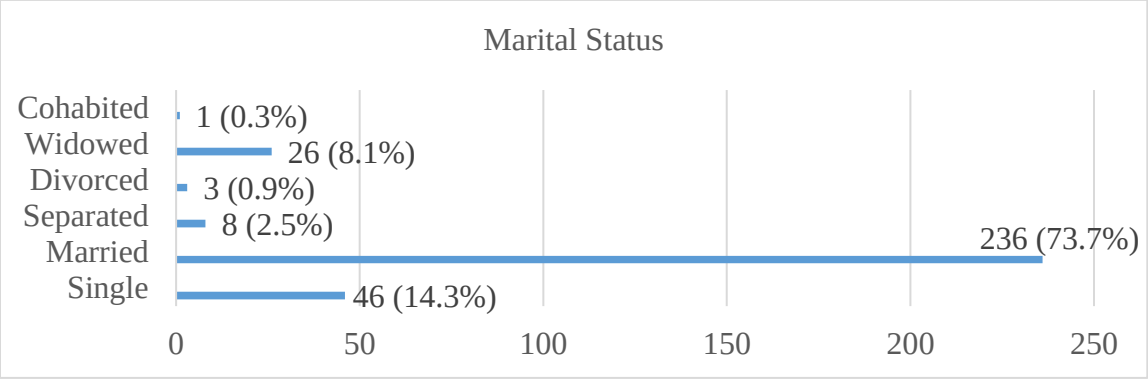

Figure 6 above shows that the majority (73.7%) of respondents were married.

Figure 7: Respondents' Work Experience (Years)

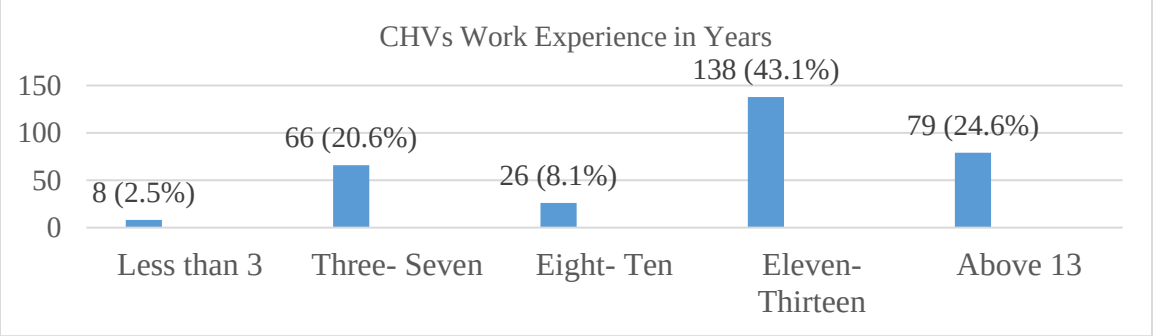

Figure 7 above shows that about two-thirds (67.7%) of CHVs have worked for 11 years and above.

Figure 8: Respondents' Alternative Sources of Income

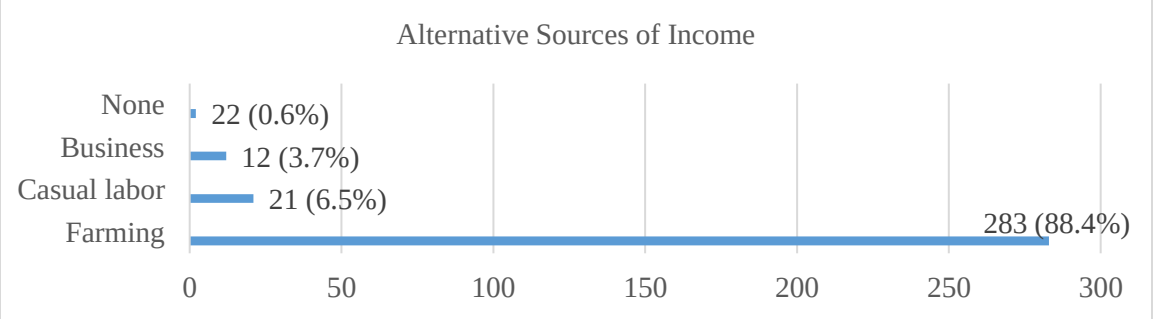

Figure 8 above shows that the majority (88.4%) of respondents were farmers.

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Figure 9: Respondents' Average Daily Income (Ksh)

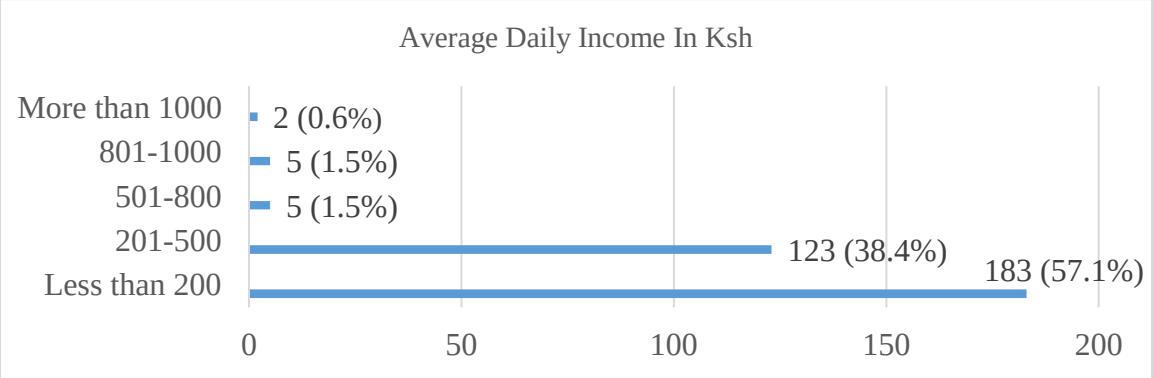

Figure 9 above indicates that more than half (57.1%) of the respondents had their daily income below Ksh 200.

DISCUSSION

Response Rate

The response rate (Figure 1) was 92% (N= 320). Fincham (2018) indicated that approximately 60% should be the minimum befitting most research for publication.

Gender

The gender inequality (Figure 2) where females were more (61%) than males (39%) and was lower than the global levels (70% female) as severely reported. This shows a small improvement in gender equality among HCWs as discussed in the Dublin forum organized by WHO though a significant room for improvement still exists (WHO, 2019).

Age

Although CHVs do not retire at the usual retirement age (60 years), most (77.2%) of them (Figure 3) were beyond 36 years old which agrees with the Kuching district of Malaysia (Chung et. al., 2017) study that the majority of CHVs were above 35 years old. This ageing healthcare workforce resonates with the Nigeria study where the government was forced to increase the retirement age for its ageing HCWs because it was caught unaware (Ezigbo, 2022).

Religion

The findings by Domaradzki and Walkowiak (2021) that there is a strong correlation between religiosity and willingness to volunteer is questionable because all CHVs were affiliated with a particular religion yet only 36.8% of CHVs have not dropped out of service. On the other hand, because the respondents were the retained CHVs, it may be construed that those who dropped out were the ones who had a weak religiosity and that those retained had stronger religious convictions though this may require a further interrogation before its confirmation.

Basic Education

Compared to the past, in Nyandarua County, findings which had found that only 22% of residents had secondary education, this study found that this was more than half (57.1%) among the CHVs (Figure 5). Further, the 2013 (KNBS and SID) study unearthed that 31% were in primary education as opposed to the current 62% which may be an indicator that basic education has not only improved but also experienced a significant primary to secondary transition.

Nevertheless, this may not apply because the CHVs have been specially selected for recruitment which means their status may not be the same as the ones for the general populace. It is also researchable whether it means that the primary school enrolment

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is the one which has gone down if CHVs may be said to be representative of the county residents.

Marital Status

The number of married (73%) CHVs in Nyandarua (Figure 6) in Kenya outnumbers Ethiopia's (62%) where community health services have been a benchmark for upcoming community strategies in Africa as found by Maes et. al. (2019). In the same vein, Ethiopia had more (22%) divorced CHVs as compared to Nyandarua County's (0.94%). It requires confirmation of whether marital status influences CHV performance and retention now that Ethiopia's community health strategy performs better and yet they have more divorces.

Work Experience

More (67.7%) of the CHVs had a work experience of 11 years and above (Figure 7) and according to the Mailman School of Public Health (2023), staff who have worked for longer periods are an advantage to an organization because of their skills and experiences. Only less than a quarter (23.1%) have worked for seven years and below which may mean that most of the retained CHVs are a hub of experience although in the later years not many CHV recruitments have been done.

However, this may also lead to an interrogation of why most of the dropouts may have been those who had been recruited not many years ago even though the high number of long-serving CHVs may also mean that very few new CHVs have been recruited in the recent past. It is nevertheless important to know why the CHUs in Nyandarua are referred to as semi-functional and yet Mailman School of Public Health (2023) also found out that performance of those who have worked for long are likely to be better job performers yet most of the CHVs have worked for long. This may mean there could still be other factors influencing performance.

Alternative Income

The majority (88.4%) of the CHVs were farmers (Figure 8), 6.7% were casual labourers, 3.76% were business operators and 0.54% had no alternative means of income. It is therefore hypothetical that alternative sources of income help to retain CHVs in service because it may be assumed that the bulk of dropouts were those without alternative sources of income. Now that even farming may not be very well paying unless endowed with proper investments, the Lusambili et. al. (2021) inclination that CHVs should not only receive relevant training but also get support for implementing suitable IGAs may be a key tenet because Woldie et al. (2018) found out that poverty was a huge impediment amongst the community health HRH.

Average Daily Income

More than half (57.1%) of the respondents earned Ksh 200 and less per day (Figure 9) which reinforces the Woldie et. al. (2018) findings that low income by CHVs is likely to jeopardize community health and probably a key motivation behind the high dropouts (63.2%). This finding contradicts the 17th edition of the Kenyan Economic Review (World Bank, 2018) which indicated that the percentage of the Kenyan people surviving under the internationally agreed poverty line had dropped from 46.8% to 36.1%. However, if this 17th edition report is anything to go by, then it could be inquisitive of why the CHV poverty index is higher than that of the community but Bonaberi (2019) explains that poverty index levels might not be equitably distributed in a population. Nevertheless, this phenomenon may query whether poverty is one of the motivations for joining voluntary work and how poverty among the CHVs impacts community health.

CONCLUSIONS

Based on the findings, this study therefore concluded that the majority, 61% (n= 195) of the CHVs were females, only less than a quarter, 22.9% (n= 73) were youths (18-35 years old) and almost all, 99% (n= 317) were Christians while more than half (57.1%), n= 183 of them were of secondary education. Moreover, it was determined that almost

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3 out of four (73.7%), n= 236 were married and more than two-thirds (67.7%), n= 217 had CHV work experience of eleven years and above. Farming was their main (88.4%), n= 283 alternative sources of income and the majority (57.1%), n= 183 of the CHVs live below the poverty line (Ksh 200).

Recommendations

Following the Conclusions of this study, the County Government of Nyandarua (CGN) Should;

- Increase the number of male CHVs to maintain gender equality;
- Increase the number of youth CHVs for HRH succession management;
- Replace the dropped-out CHVs;
- Identify the reason for the high CHV dropout (63.2%) in view of curbing the phenomenon;
- Recruit more CHVs for institutional memory management;
- Give adequate support to the farming CHVs to improve their farming returns;
- Encourage income-generating activities (IGAs) for CHVs to raise their incomes;
- Conduct poverty alleviation strategies like money literacy to the CHVs to reduce poverty;
- Increase the number of stipends given to the CHVs to favourable and feasible levels;
- Pay stipends given to CHVs on regular and predictable timelines without delays;
- Pay the stipend arrears to the CHVs.

Further Research

The following were recommended for further research.

- The significance of socio-demographic factors to the CHVs' retention or dropouts;
- The influence of CHV multitasking on community health work performance;
- The motivators for selecting or joining voluntary work among the CHVs.

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