Effect of socio- demographic characteristics on performance of Community Health Workers: A cross sectional study in Makueni County, Kenya.

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Abstract: *Introduction: The aim of the study was to determine the socio demographic characteristics of Community Health Workers in Kibwezi Sub-county and their effect on performance. Methods: It was a cross-sectional comparative study in which socio demographic characteristics of Community Health Workers receiving monetary incentives was compared to those not receiving monetary incentives and each characteristic was assessed for its influence on performance of CHWs. Data was collected using a structured questionnaire, key informant interview guide and focus group discussion guide. Relationship between variables was determined using chi square and odds ratios. Results: Sex was not associated with performance in this study. [OR= 1.2406 P-value=0.535]. Age was significantly associated with performance of CHWs, performance of those who were in the age bracket of 40-49 years was three times better than those aged 20-29 Years [OR= 3.6327 P= 0.022).Marital status was significantly associated with performance of CHWs. The odds of performance was three times higher for those CHWs who were single compared to those who were married. [OR 3.306 P-value= 0.018]. Education level was significantly associated with performance, CHWs who had an education level up to primary school were better performers than those with secondary school education level.[OR 2.901786 P value= 0.002).Conclusion: Socio demographic characteristics of CHWS have an influence on their performance. Married, middle aged and CHWs who had primary school level of education were found to have better performance. The Selection criteria of CHWs should consider the age, level of education and marital status for optimal performance and results.*
Keywords: *Community Health Worker, Socio demographic characteristics, Performance*

I. Introduction

Community Health Workers (CHWs) were described as a pillar to implementation of Primary Health Care in the Alma Ata Declaration whose main was "health for all by the year 2000". CHWs would assist in filling the gap of unmet health care needs among the poor geographically underserved populations and hence break the barriers to access of health while reducing the cost of the heavy diseases burden. CHWs through provision of simple interventions in the community could also serve as a point of entry of health care at the community level. Since the role of the CHW was re-emphasized during the Alma Ata conference in 1978, there have been several variations and definitions of this term.[2] Since the rolling out of PHC the specific roles played by CHWs vary across countries with majority participating in home visits, provision of simple first aid, health education on common diseases and Maternal and Child Health and Family Planning.[1]

Literature globally reflects the diversity in the characteristics of CHWs across programmes. Majority of programmes indicate that CHWs are selected from their communities and have acquired little education with majority having primary level education. The gender of the CHWs also varies with the females dominating in many programmes. [1] This has been discussed at different context like in Somali, the CHW programme which was dominated by males became problematic during implementation as the male CHWs had little contact with females in the community.[3] In Peru, the husbands resisted their wives been selected as CHWs as the community associates leadership with the male gender and therefore women could not enroll in the CHW programme[4]

The level of education also varies across different CHW programmes. Many, programmes require a particular level of literacy. Literacy of CHWs is a requirement in countries like Peru, Uganda, Democratic Republic of Congo and Somali. [3,4,5] In Kenya CHWs AMREF programme requires seven years of primary education.[6] However, in Kenya, another the community programme in Saridid, level of education was not literacy was not considered as a criteria for selection of CHWs. [7] In Peru, understanding of the native language was considered as crucial, as well as some level of literacy. [4] Bhattacharyya et al. comment that "literacy requirements often affect the age of the selected CHWs: literate people tend to be younger. There is some evidence, on the other hand, that older CHWs are more respected in their communities" [2.] It is often difficult to

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generalize the profile of CHWs globally. The fact is that while there are variations in the trends CHWs can be male or female, be literate or be illiterate or be old or young in age. The most important thing is that they have to meet the expectation so the communities and be acceptable in relation to the culture of the community.

II. Materials And Methods

2.1 Study Area
The study was undertaken in Kibwezi District, Makueni county, Kenya. Kibwezi District is in Makueni County of Kenya and was curved from the original Makueni District and comprises of four divisions: Makindu, Machinery, Mtito Andei and Kibwezi.

2.2 Study design
The study design was a Cross-Sectional Comparative study covering Community Health Workers in Community Units which have been receiving monetary incentives in Kibwezi District and a comparison group of Community Health Workers in Community Units not receiving monetary incentives in Kibwezi District.

2.3 Sampling
Multi stage sampling was used to select CUs receiving monetary incentives and those not receiving monetary incentives. Purposive sampling was used to select the CUs and CHWs that have been   receiving monetary incentives   and simple random sampling was used to select CUs and CHWs that are not receiving monetary incentives. The Community Units selected for data collection to represent those receiving monetary incentives were: Mukaange, Nthongoni, Ngulu and Ivingoni and those from Community Units not receiving incentives were Mtito andei, Athi-kamunyuni, Nzambani and Athikiaoni. This translated to 140 CHWs receiving monetary incentives matched with 142 CHWs not receiving monetary incentives making a total sample size of 282.

2.5Data collection and tools
A Structured questionnaire was designed, piloted and used to collect quantitative data from the Community Health Workers in the selected CUs in Kibwezi, the study area. A total of 282 CHWs from the sample population were interviewed. Performance of CHWs was assessed through the review of the CHEWs registers and Community Health Information System (CHIS) Records for the CHWs performance indicators through house hold visits done by the CHWs.

2.6 Data analysis
The Quantitative data collected was coded and analysed using the Stata Version 11. Logistics regression was used to test for correlation between the research variables. Chi − square and odds ratio was used to determine relationships between variables. Significance level was $P < 0.05$ at 95% CI.

III. Results

3.1 Sociodemographic characteristics of CHWs
3.1Gender; Majority of the CHWs interviewed were women for the Community Units not receiving monetary incentives this represented 56% compared to 43% for the community Units receiving incentives as shown in fig. 1. There was a significant difference in Gender distribution of the CHWs receiving monetary incentives and the comparison group who do not receive monetary incentives. ($\chi2$=12.1, P- value= 0.001)

3.2 Age; Majority of the Respondents for both groups were in the age group of 30-39Years which represented 56%, followed by those between the age of 40-49 years(%) for CHWS not receiving monetary incentives compared to 44% for the age between 30-39, followed by the age group between 40-49 years(%) for those receiving monetary incentives. There was no significant difference in age distribution of respondents in CUs receiving monetary incentives and those not receiving monetary incentives in the study. ($\chi2$=6.56, P- value= 0.363)

3.3 Marital status; On marital status, 88.6% of the respondents were married, followed by the single (10.7%) and 0.7% for the widowed for the CHWs receiving incentives compared to 97.2% married and 2.8% single for CHWs receiving incentives. There was a significant difference in the marital status of respondents in CUs receiving monetary incentives and the comparison respondents from CUs who do not receive monetary incentives. [$\chi2$=8.1027, P-value =0.017]

3.4 Education level; On Education level majority of the respondents (51.4%) had attained Secondary school education, followed by primary education (45%) and Post-secondary education (3.6%) for the CUs receiving monetary incentives compared with 52.1%, 44,4% and 3.5% respectively for the comparison group. There was

no significant difference in level of education for the CHWs receiving incentives and those not receiving incentives. (χ2 =0.0132, P-value=0.993).

3.5 Occupation: On occupation of the respondents, majority(90.1%) were farmers,4.2% were doing business, 2.8% were unemployed while 2.1% were in formal employment for CHWs not receiving monetary incentives compared to 85.7% who were farmers, 12.9% were doing business and 1.4% were unemployed for the CHWs receiving monetary incentives as shown on table 1. There was a significant difference in the occupation of CHWs receiving monetary incentives and those not receiving monetary incentives (χ2=12.8 P value =0.025) Socio demographic characteristics associated with performance of CHWsSex was not associated with performance in this study. [OR 1.2406 P-value=0.535]. Age was significantly associated with performance of CHWs, performance of those who were in the age bracket of 40-49 years was three times better than those aged 20-29 Years [OR 3.6327 P= 0.022) as shown in table 2..Marital status was significantly associated with performance of CHWs. The odds of performance was three times higher for those CHWs who were single compared to those who were married. [OR 3.306 P-value= 0.018]. Education level was significantly associated with performance, CHWs who had an education level up to primary school were better performers than those with secondary school education level.[OR 2.901786 P value= 0.002]. Occupation of CHWs was significantly associated with performance. The performance of CHWs who had businesses was two times better than those who were farmers. [OR 2.901786 P= 0.002 (CI 95% 1.4598, 8.917049)]
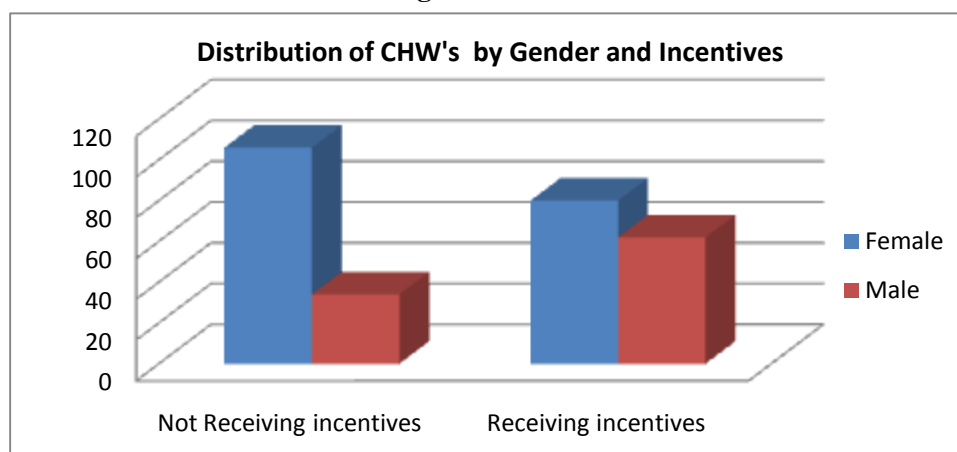
IV. Figures And Tables

Figure 1: Distribution of CHWs by gender and incentive

Table 1: Socio-demographic characteristics of CHWs

Variable	Receiving incentives	Not receiving incentives	χ^2 P-value
Gender			χ2=12.1
Female	80(43.01%)	106(56.99%)	p= 0.001*
Male	62(64.6%)	34(35.4%)	
Age			
<20YRS	0(0.0%)	2(100%)	X^2 =6.56
20-29	22(61.11%)	14(38.89%)	P=0.363
30-39	41(43.62%)	53(56.4%)	
40-49	49(51.1%)	48(48.9%)	
50-59	21(52.3%)	19(47.5%)	
60+YRS	6(50%)	6(50%)	
Marital status			
Married	138(53)	124(47)	χ2 =8.1027
Single	4(21)	15(79)	P=0.017*
Widowed	0(0)	1(100)	
Occupation			
Business	6(25%)	18(75%)	
Farmer	128(51.6%)	120(48.4%)	χ2=12.8
Formal employment	3(100%)	0(0.0%)	P=0.025*
Others	1(100%)	0(0.0%)	
None	4(66.67%)	2(33.33%)	

Table 2: Association of age with performance

Age associated with performance		
Variable	**Univariate**	
	OR	**P-Value (CI 95%)**
Age 30-39	1.1278	0.801 (0.4435835 2.867503)
40-49	3.632653	0.022* (1.209579 10.90972)
50-59	1.142857	0.813 (0.3791133 3.445203)
<60	0.4556	0.197 (0 .099546 1.607297)

V.   Discussion

The study findings show that there was a difference in the composition of the two groups whereby a bigger percentage of CHWs receiving monetary incentives was composed of the males. This could be attributed to the males enrolling as CHWs due to the monetary incentives as opposed to women who are likely to take up volunteer roles for the sake of improvement of health for their community. This can be translated as women being more willing to work as volunteers than their male counterparts. However sex was not significantly associated with performance in the study. (P-value=0.535). This is consistent with a study done in Uganda. [8] which found no relation of sex with performance of CHWs. This contrasts with findings of a study done in Busia District whose findings indicated that the Sex of the CHW where females perfomed better than males in various aspects of performance. [9]

Age was significantly associated with performance, CHWs who were in the age bracket of 40-49 years were more likely to perform better (P= 0.022) as compared to those in other age groups. This could be attributed to majority having been married and settled and being able to handle the extra responsibilities for providing services to the community and support their families as opposed to the younger ones and the older ones. Similar findings were reported in Kenya, where the age group of 30-40 years recorded optimum performance[9]. In the study CHWs who were younger and those who were much older were also found to have sub-optimal performance. The findings differ from a study in Uganda that indicated that age had no effect on the CHWs' performance. [8]   Marital status was significantly associated with performance of CHWs. The odds of performance was three times higher for those who were married compared to those who were single. [OR 3.306 P-value= 0.018   95% CI (1.225372, 5.768136)]. This could be attributed to the married CHWs having support from their families and provision of assistance in the financial contribution in the homes compared to the single who had the extra burden of providing for their families coupled with the inadequate compensation for the work done and feeling that the extra time taken to perform the CHWs roles could have been used for Income Generating Activities. This differs from findings of a study done in Busia, Kenya where marital status was not associated with performance of CHWs. [9]

The study findings indicate that education level was significantly associated with performance. CHWs who had education level of up to primary school leavers were better performers compared to secondary school leavers.[OR 2.901786 P value= 0.002   (CI 95% 1.4598, 8.917049)]. This result differs with a study in Nigeria which found that there was better performance among CHWs with higher level of education as they were able to acquire new skills and hence offer better services. [10] This also differs with findings in a study done in Uganda where a higher education level was related to better performance of CHWs in all parameters of performance except client enablement. [9]In the study, occupation was significantly associated with performance. The performance of CHWs who had businesses was two times better than those who were farmers. [OR 2.901786 P= 0.002   (CI 95% 1.4598, 8.917049)] This could be attributed to the low income from farming due to the low returns and drought experienced in the study area and also the utilization of time required to do farming for the CHW roles. This in return would affect the performance of the CHWs as their financial status is likely to affect their ability to perform their roles which are not compensated.

VI. Conclusion

Socio-demographic characteristics affect the performance of Community Health Workers. The age, marital status, occupation and education level of CHWs should be considered during the selection of CHWs to enhance their performance.

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