

Determinants of functionality of community health committees: A case of Mombasa County, Kenya

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Abstract

The achievement of better health outcomes is generally believed to be possible to secure through the development and support accorded to health systems. Community Health Committees comprised of selected community membership focused on coordinating activities regarding the health of the community on behalf of their community, have been identified as a useful health governance structure and offer oversight and leadership in the execution of services related to the community's health. It is heavily opined that increasing the space of decision making within lower health systems levels, and the involvement of the citizens in priority setting enhances health systems responsiveness. In spite of the likely effects, the participation of the community is surrounded with challenges as suggestion of studies point that committees of health within African countries are not optimally functioning. The main objective of this study was to assess the factors influencing the functionality of Community Health Committees. Specific Objectives were: to examine the role of communication, committee composition, training and support supervision. The study adopted a descriptive cross-sectional research study design to interview 162 respondents in selected Community Health Units. Stratified random sampling was used to identify the respondents. The research instrument used in the study was a questionnaire, additionally Key Informant Interviews were administered to six health workers within the six sub-counties to understand their perception, understanding and knowledge of functionality of community health committees. Descriptive and inferential statistics were used to summarize the data. The findings established that communication, composition, training and support supervision had positive and significant influence on functionality of Community Health Committee. The study concluded that community health committees where there was effective communication, proper composition, had undergone effective trainings and were properly supervised had better functionality and improved governance.

Key Words: *Community Health Strategy, Community Health Committee, Community Participation, Communication, Composition, Support Supervision, Functionality.*

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1.0 Introduction

The world health organization (WHO, 2008) held that the low levels of health care services in the developing countries especially in the sub Saharan Africa was attributed to a failure of health systems. Hence, the development of strengthened health systems would promote the health care outcomes to a great extent.

Vision 2030, which is Kenya’s development blueprint, aimed at restructuring the health system with a focus on promoting preventive health services, has Community Health strategy as one of its flagship project (Government of Kenya, 2008). Experiences have shown that in a setting of limited resources, interventions of health focused on developing an individual’s capacity as well as that of a community and household are suitable for providing self-care, prevention and care seeking behaviour that is effective in enhancing outcomes of maternal, new-born and child health (Wangalwa et al., 2012).

“Community Health committees are critical aspects of leadership and governance of health systems in Kenya. Functionality of these committees is essential in achieving quality service delivery”.

The strategy for Community health was established in 2006 as a means to address the declining health indicators (Ministry of Medical Services and Ministry of Public Health & Sanitation, 2012). Community Health Committees (CHC) are required to offer oversight and leadership in the

execution of health services in the community. Specifically CHC provide oversight for the Community health volunteers activities, coordination of plans and mobilization of the members of the community for dialogue and health action days in order to develop participatory community unit yearly work plan (Ministry of Medical Services and Ministry of Public Health & Sanitation, 2012). A strong argument has been made that expanding the space of making decisions within health systems at lower tiers, as well as involving citizens in setting priorities, enhances the health systems responsiveness (Cleary et al., 2013). The intention of health committees is to act as a link between the communities served and the services of health. It has been demonstrated by Glattstein-Young (2010) that health committees are capable of fronting delivery of improved services and right to health.

A functional community health committee would ensure that there is strong governance for community unit for effective delivery of health outcomes. Several studies have alluded that in Africa, health committees are not optimally functioning (Padarath & Friedman, 2008). In Kenya, there still exist a wide gap in the execution of community approaches with observable discrepancies in functionality of community units across the country (Ager et al, 2016). Lack of effective CHC is one of the reason attributed to poor functioning of community health volunteers. Mombasa County currently has 43 community health units established, despite

the investment a review of key health indicator performance for the financial year 2018/2019 and 2019/2020 indicate a declining trend of healthcare services. Facility based maternal deaths increased from 69 to 74, number of children fully immunized reduced from 79% to 78%, skilled birth attendance reduced from 77% to 71% and number of TB patients completing treatment reduced from 96% to 77% (County Government of Mombasa, 2020). This study aimed at evaluating the factors influencing functionality of the Community Health Committees in health service delivery in Mombasa County.

2.0 Materials and Methods

The study was conducted within Mombasa County in the 6 administrative sub-counties. Target population for this study was 271 CHC members. A descriptive cross sectional research design was adopted. Both quantitative and qualitative methods of data collection were used through a structured questionnaire Stratified random sampling technique was used to identify the 162 respondents for the quantitative approach. In order to get in-depth opinion and to further validate the quantitative data, 6 key informants were purposively sampled and interviewed through a guide. Questionnaire was the most appropriate means of realizing the data for this study as it was cheap to administer, allowing the gathering of data from a large population within a short time as well promoting the respondents confidentiality (Mugenda & Mugenda, 2009).

The KeMU Scientific Ethical Research Committee (SERC) approved the study undertaking upon researcher’s fulfillment of the necessary requirements. Written informed consent was sought from the respondent. SPSS version 25 was used for coding and analyzing the data. Descriptive statistics (frequencies, percentages) was used to summarize the data. Multivariate regression analysis was conducted to establish the relationship between the dependent and the independent variables. The data was presented by the use of tables and figures. The qualitative data was analyzed thematically guided by the study variables and presented using verbatim quotes. The study adopted the regression model below;

$$Y_{olk} = \beta_0 + \beta_{roc}X_{roc} + \beta_{eoc}X_{eoc} + \beta_{rot}X_{rot} + \beta_{rss}X_{rss} + \ell_i$$

From the equation:

Y is the dependent variable, β_0 is a constant, β_{roc} , β_{eoc} , β_{rot} and β_{rss} , are the regression coefficients while X_{roc} , X_{eoc} , X_{rot} and X_{rss} represents the independent variables

Y = functionality

β_{roc} , = role of communication

β_{eoc} = effect of composition

β_{rot} = role of training and

β_{rss} = role of support supervision

ℓ_i is the error term

3.0 Results and Discussion

Functionality of Community Health Communities in Service Delivery

The study used a scale of 1 to 5 with 1 denoting strongly disagree and 5 denoting strongly agree, the respondents were requested to indicate their agreement level to the statements below that relate to functionality. The results are tabulated in Table 1 below.

Table 1
Functionality of Community Health Communities in Service Delivery

N 162	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
Committee has prepared a work plan	0(0.0%)	88(54.3%)	8(4.9%)	55(34.0%)	11(6.8%)
Committee reviews and approves annual performance goals	4(2.5%)	98(60.5%)	0(0.0%)	60(37.0%)	0(0.0%)
Community health committee has a current written action plan for the community health unit	0(0.0%)	116(71.6%)	8(4.9%)	38(23.5%)	0(0.0%)
Community health committee clearly stating the activities	3(1.9%)	69(42.9%)	9(5.6%)	81(49.7%)	0(0.0%)
Community health committee meets each month	0.0%	59(36.4%)	18(11.1%)	77(47.5%)	8(4.9%)
Community health committee leads quarterly dialogue days with CHVS and community members.					

The results shows that 54.3% of CHC had not prepared a work plan, while 40.8% (34.0 % Agree and 6.8% strongly Agree) had a work plan. Majority 63.0% (60.5% disagree and 2.5% strongly disagree) of the CHC did not review or approve annual performance goals. Similarly, the results show that 71.6% of the CHCs did not have a current written action plan for the community health unit. The results indicates that 49.7% of the CHC had monthly meetings, while 42.9% did not have the meetings. 52.4% (47.5 and 4.9%) of respondents had dialogue days while 36.4% of the CHCs did not have the dialogue meetings. For the CHC to be effective, they need to develop annual plans and review the reports from CHV on a monthly basis. Lack

of recognition by County Government officials and community members was sighted by a key informant;

...’’.....Most of the CHC members feel that they are not recognized. They also feel that they are left out in most of the activities within the community unit and this has contributed to the high drop out.....’’. (KII 2 Female)

Communication in Community Health Committees

The study sought to find out from the respondents whether communication was useful in functionality of the Community Health Committees. The results are presented in Table 2.

Table 2

Impression of Respondents on Various Aspects of Communication

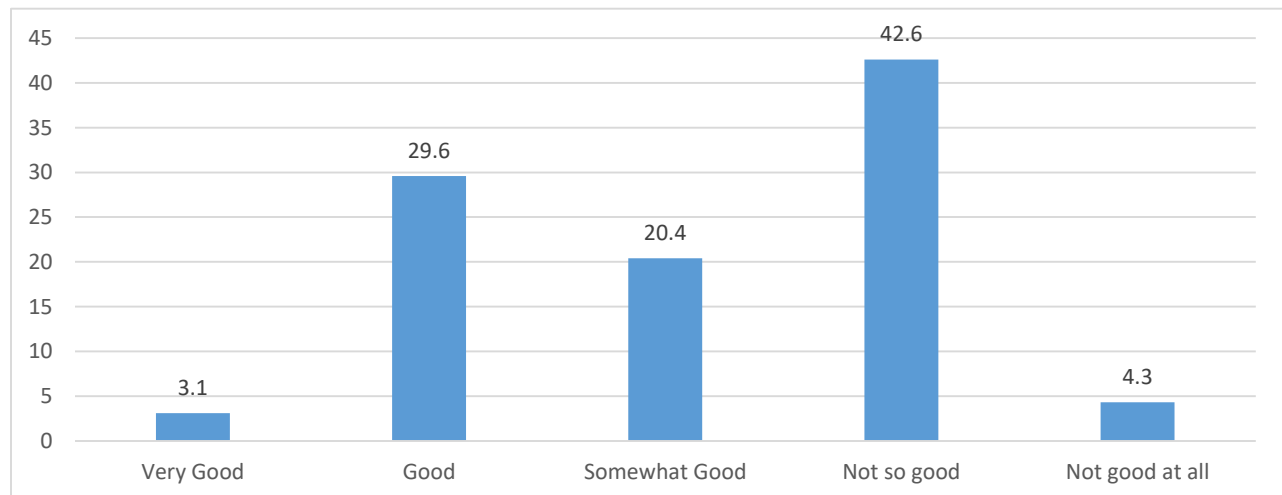
N 162	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
Communication is useful in Functionality of CHC	0(0.0%)	7(4.5%)	37(22.8%)	89(54.9%)	29(17.9%)
The level of communication in my CHC is good.	0(0.0%)	55(34.0%)	28(17.3%)	63(38.9%)	16(9.9%)
I am kept well informed about my CHC activities, plans and progress	0(0.0%)	52(32.1%)	36(22.2%)	60(37.0%)	14(8.6%)

The results of Table 2 shows that 72.8% (54.9% agree and 17.9% strongly agree) of the respondent were of the opinion that communication was useful in influencing the functionality of CHC. Results shows that 48.8% (38.9 % and 9.9%) of the respondent felt that the level of communication in their CHC was good. On the other hand, 34% felt that the communication was not good. The findings implied that not all the CHCs in

Mombasa County had good communication. The results further show that only 45.6% (37.0% and 8.6%) of the respondents agreed that they were kept informed about their CHC activities, plan and progress.

The study also sought to establish from the respondents the community attendance for dialogue days. The results are presented in Figure 1.

Figure 1
Community Attendance for Dialogue Days



The results in Figure 1 further shows that 46.9% of the respondents indicated that attendance for community dialogue was not good, while 32.7% indicated that the attendance was good. Majority of the respondents agreed that communication had a role in functionality of the CHC (72.8%). The study also found that the level of communication among most of Community Health Committees in Mombasa County was low given that not all the members were informed on the plans and progress of their Community Health Committees and few (32.7%) community members had good attendance for dialogues that are avenues used by most CHC in communication. This

finding is similar to Mireku et al. (2014) who indicated that some community members did not attend the dialogue days, which hampered communication and coordination. Poor community attendance negatively affects the effective functioning of the committee since improving health through behavior change is key.

Composition of Community Health Committees

The study sought to establish the extent to which the composition influenced the functionality of the CHC in Mombasa County. The results are presented in Table 3 below;

Table 3

Whether composition influence functionality of CHC

	Frequency (N)	Percent (%)
Strongly Disagree	0	0
Disagree	3	1.9
Neither agree nor Disagree	17	10.5
Agree	69	42.6
Strongly Agree	73	45.1
Total	162	100

The results in Table 3 shows that majority 87.7% (42.6% and 45.1%) indicated that composition influences the functionality of CHC. The respondents were asked to indicate the number of committee members in their CHC, 78 (48%) of the CHC had less than 5 members, another 78 (48%) indicated they

had 5-10 members and only 6 (4%) of the CHCs had more than 10 members.

CHC should have representatives of different interest groups like women groups, people with disability, youth and people living with HIV/ AIDS. Respondents were asked whether their CHC is representative of the all

interest groups, only 66(41%) of the respondents indicated that their CHC was composed of all interest groups, while 73 (48%) indicated that their CHC is not representative. In terms of composition this study established that not all the CHC in Mombasa County are properly composed due to a high dropout rate. Similarly, some CHCs are not representative of all the interest groups. These aspects of composition negatively impact on functionality of the CHC. These study findings support Paradath and Friedman (2008) and Poku (2008) who argued that some of the CHC lack representativeness which impacts on their functionality.

The results shows that 43.0% of CHCs were aged between 31 and 40 years, 40.0% were aged between 41 and 50 years while those between 21 and 30 and those above 50 years were 7.0% and 10.0 % respectively. The findings implied that the majority of the members of the community health committees in Mombasa County were middle aged individuals however, the youths and old people were equally represented. The finding further implied that there was age diversity among the community health committees in Mombasa County. The results indicate that 67.0% of CHC members were male while 33.0% were female. From the finding it can be assumed that the representation of women

in the CHC is far much lower compared to men.

The results further show that 75% indicated they were appointment in the committees while only 25% were elected. This was further confirmed during a key informant interview;

“In some of my CUs no election was done. We contacted the area chiefs to mobilize the community to elect CHC members as per the guideline. We however realized later that most of the chiefs did not conduct election and the names presented were those of village elders.” (KII 6 Female).

A popular election processes promote community involvement and allow community members to hold community representatives accountable for a more community-oriented healthcare system (Boulle, 2007). Appointment may create an avenue that reduce transparency and fairness in composition of the CHC leading to selection of unfit members to the committees thereby influencing the functionality.

Training in Community Health Committees

The study further sought to analyze role of training in influencing the functionality of CHC. The results are tabulated below. See Table 4;

Table 4
Training in CHC

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
Training of committee members influences the functionality of CHC	0(0.0%)	0(0.0%)	2 (1.3%)	77(47.5%)	83(51.2%)
Training approach used was participatory	0(0.0%)	0(0.0%)	5(3.1%)	99(61.1%)	58(35.8%)
There is Continuing Education for Committee Members regarding their duties/roles	0(0.0%)	82(50.6%)	9(5.6%)	62(38.3%)	9(5.6%)

The results in Table 4 shows that 98.7% (51.2% and 47.5%) of the respondents indicated that training had an influence in the functionality of CHC. Similar findings was reported by Chikonde,(2017) who noted that at the end of the training, members of health committees were viewed as being better aware and capable of undertaking their responsibilities and roles in regards to health facilities.

The results also indicate that in 96.9% (61.1% and 35.8%) of the trainings, the approach that was used was participatory. The results further shows that 50.6% of the respondents indicated that there was no continuing education for CHC members while 42.9% indicated that they have received education. As was noted from a key informant interview;

“They have not (CHC members) received any follow up training. Most of the trainings we have done are for specific programmes (TB, HIV.....) and they target selected community health volunteers who are later supposed to perform some activities within their households with support by partners” (KII 5 Female).

This findings differ with Creigler et al (2011) who suggested that there should be initial training to prepare them for their role and an ongoing training to update on new skills, reinforce initial training and ensure that they are practicing the skills learned. The respondents were asked about the training they had received and the findings are tabulated below. See table 5

Table 5

Training in CHC

		Frequency	Percent
Receive formal training for your role as a CHC	Yes	154	95.1
	No	8	4.9
	Total	162	100
Organization that supported training	MoH	34	22.2
	Partners	120	77.8
	Total	154	100
Length the training	One week	138	89.5
	Two weeks	16	10.5
	Total	154	100

The results show that 154(95.1%) of the respondents had received training which was either supported by partners (77.8%) or Ministry of Health 22.2%. Majority 89.5% indicated that their training lasted for one week while 10.5% indicated they were trained for two weeks.

Majority 97.0% indicated that the training they received was relevant. The result also show that 43.0% of the respondent were satisfied that the training covered relevant scope with 57% disagreeing that not everything they were expected to do was covered during the training sessions.

The findings in this section showed that CHC were trained on their expected duties and roles even though some felt the training failed to meet their expectation in terms of the scope of the trainings. The finding agreed with

Loewenson et al., (2014) who noted that a capacity gap in one area can affect abilities to deliver effectively on other functions, a capacity gap in monitoring services for instance limits ability to provide service oversight or community feedback

Support Supervision in Community Health Communities

This assessed the extent to which CHC members receive support supervision from the MOH. The results shows that 93.0% of the respondents indicated that support supervision influences functionality of CHC. According to Freeman et al. (2009) supportive supervision provided by community health field officers is essential in order to maintain the quality of community-based interventions, including health promotion, which Community health volunteers provide. See table 6

Table 6
Existence and Frequency of Supervision to CHC

Frequency of supervision	Frequency	percentage
None (no supervision)	82	50.6%
Once every 6 months	29	17.9%
Once every 4 Months	41	25.3%
Once every 3 months	10	6.2%
Total	162	100%

The result in table 6 indicate that 80 (49.3%) respondents received supervision in their CHC. Out of which 29 indicated once after 6 months, 41 indicated once every 4 months,

while 10 indicated once every 3 months. These findings implied that support supervision was not consistent in most of the CHCs. See Table 7.

Table 7
Descriptive Results for Support Supervision

n=162	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
A designated officer who conducts support supervision for Community Health Committees.	4.40%	37.70%	6.30%	43.40%	8.20%
There is county guidelines on supervision of Community Health Committee	1.20%	48.20%	20.50%	26.50%	3.60%

The results shows that 51.6% indicated that there is a designated officer who conducts support supervision for CHCs. On the other hand, 42.1% indicated that there was no officer designated to conduct supervision. The results show that 49.4% of the respondents were not aware of the existence of guidelines for supervision while 30.1 % were aware. This could imply that the use of supervision checklist by the CHAs was not consistent. See table 7.

designated as the supervisors for the CHC. This gives the CHAs an opportunity to mentor, motivate and give feedback to the Community Health Committee. This finding is further supported by the key informant interview.

“...I am responsible for two community units, I have to visit all the CHVs who are undertaking activities in specific projects and compile a report every month. Sometimes I visit the CHC but sometimes due to lack of

According to the CHC training manual, Community Health Assistants (CHAs) are

transport, it may take a longtime before I meet them... ”(KII4,Female).

The findings indicate that supervision was considered to be very important in the functioning of CHC. However, in practice, supervision of CHC was not consistently done. Similarly, In an in-depth interview with Kenya and Benin health workers, Matheu & Inhoff (2006) also reported that supervision

was infrequent, irregular and lacking in feedback.

Multivariate Regression Analysis

The study conducted a multivariate analysis to establish the relationship between the dependent and the independent variables. See Table 8

Table 8

Multivariate Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	β	Std. Error	Beta	t	
(Constant)	2.120	0.782		2.710	0.007
Communication (RoC)	0.150	0.052	0.236	2.852	0.005
Composition (EoC)	0.422	0.081	0.368	5.202	0.000
Training (RoT)	0.155	0.219	0.065	0.706	0.002
Support Supervision (RSS)	0.186	0.070	0.193	2.676	0.008

a. Dependent Variable: Functionality of Community Health Communities

Therefore, the regression model $Y_{olk} = \beta_0 + \beta_{roc}X_{roc} + \beta_{eoc}X_{eoc} + \beta_{rot}X_{rot} + \beta_{rss}X_{rss} + \epsilon_i$ Became; $Y_{olk} = 2.120 + 0.150 (RoC) + 0.422 (EoC) + 0.155 (RoT) + 0.186 (RSS) + \epsilon$

Communication had a coefficient of $\beta=0.150$, $p=0.005$. Composition had a coefficient of $\beta=0.422$, $p=0.000$. Training had a coefficient of $\beta=0.155$, $p=0.002$ and support supervision had a coefficient of $\beta=0.186$, $p=0.008$. The coefficients are all statistically significant at 5 percent significance level. These results therefore implied that communication, composition, training and supervision had a

positive and significant influence on functionality of CHC.

Community Health committees are critical aspects of leadership and governance of health systems in Kenya. Functionality of these committees is essential in achieving quality service delivery. The results of these study show that when community health committees are properly composed, adopt effective communication, are properly trained and have support supervision they will increase their functionality and improve overall leadership and governance of health systems in the county . The study finding

agrees with WHO (2008) that highlighted that Leadership and governance of health systems is arguably the most complex but critical building block of any health system, it involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system-design, and accountability.

4.0 Conclusion

The study concluded that communication was critical in functionality of community health committees in Mombasa County. Improved communication would provide the necessary information for strengthening the CHC oversight role. In terms of composition this study concluded that the presence of diverse membership gives CHC a greater leverage in addressing community issues resulting in better performance and functionality.

Without representation communities health priorities may not be fully addressed, this negatively impact on functionality of the CHC in Mombasa County. The study further concluded that training provides the CHC with the necessary skills and competencies to

provide service oversight or community feedback thereby contributing to optimal functioning of CHC. The study also concluded that support supervision has significant effect in the functioning of CHC and enables the CHC to be motivated to fulfil their objectives, lack of frequent supervision negatively influenced the functionality of the CHC in service delivery.

5.0 Recommendations

To enhance communication, the CHC assisted by the Health Department should conduct awareness campaigns to educate the public on the need to attend dialogue days and other forums where communication can be enhanced for quality service delivery by the CHC. The Department of Health should develop strategies to enhance community representation and sustainability of the CHC. The Ministry of Health training program for CHC should be re-designed with provisions for periodic refresher trainings to improve their knowledge and skills. Finally, County Government of Mombasa should strengthen supervision and mentoring of the CHC to ensure they function according to their terms of engagement for maximum and effective service delivery.

References

Ager, D., Oele, G., Muhula, S., Achieng, S., Emalu, M., Nanjala, M., Kosgei, S., Wanjiru, S., Ofware, P., Ojaka, D., Ndirangu, M., & Kyomuhangi, L. (2016). A scorecard for assessing functionality of community health unit in Kenya; *The Pan African Medical Journal*. 25 (2), 10- 14 .

<https://europepmc.org/article/MED/28439334>.

Boulle, T. (2007). *Developing an understanding of the factors related to the effective functioning of community health committees in Nelson Mandela Bay municipality*. [Master's Thesis, University of

- Western Cape].
<http://etd.uwc.ac.za/xmlui/bitstream/handle/11394/2252>
- Chikonde, N. (2017). *Training clinic health committees: a vehicle for improving community participation in health*. [Master's Thesis, University of Cape Town]. Cape Town.
<https://open.uct.ac.za/handle/11427/27060>
- Cleary, M, Molyneux, S, & Gilson, L, (2013). Resources, attitudes and culture: an understanding of the factors that influence the functioning of accountability mechanisms in primary health care settings. *BMC Health Services Research*. 13(8), 320-41.
<https://bmchealthservres.biomedcentral.com>.
- County Government of Mombasa, (2020). *Annual Performance review 2019-2020*;
<https://www.govserv.org/KE/Mombasa/1397725293875742> .
- Creigler, L. Hill, K., Furth, R., & Bjerregaard, D., (2011). *Rapid assessment of community health worker programs in USAID priority MCH countries. a Toolkit for Improving CHW Programs and Services*.
<https://www.who.int/workforcealliance>.
- European Agency for Safety and Protection of Health at Work (2010). *European Survey of Enterprises on New and Emerging Risk. Last revision*.
http://osha.europa.eu/en/slc_cse_search_results.
- Glattstein-Young, G (2010). *Community Health Committees as a vehicle for community participation in advancing the right to health'*, [Master's Thesis, University of CapeTown].
<https://open.uct.ac.za/handle/11427/10542>
- Government of Kenya, (2008) Vision 2030.
<https://vision2030.go.ke>
- Freeman, P; Perry H; Rassekh, B; & Gupta, S, (2009), 'Accelerating progress in achieving the millennium development goal for children through community-based approaches', *Global Public Health*,: 7(4) 400-419.
<https://doi.org/10.1080/17441690903330305>
- Loewenson R, Machingura F, Kaim B, Training & Research Support Centre (TARSC) & Rusike, I.(2014, January 4-6) 'Health centre committees as a vehicle for social participation in health systems in east and southern Africa' [discussion paper 101], TARSC with CWGH and Medico, EQUINET. Harare
<https://equinetafrica.org/sites/default/files>
- Mathauer, I. & Imhoff, I. (2006) Health worker motivation in Africa: the role of non-financial incentives and human resource management tools. *Human resources for health* 4(24), 56-60. <https://human-resources-health.biomedcentral.com/articles>
- Ministry of Medical Services and Ministry of Public Health & Sanitation (2012). *Kenya Health Sector Strategic and Investment Plan (KHSSP)*. 2012 - 2018.
https://www.who.int/pmnch/media/events/2013/kenya_hssp.pdf.

- Mireku, M., Kiruki, M., McCollum, R., Taegtmeier, M., deKoning K, & Otiso L.(2014) *Context analysis: Close-to-community health service providers in Kenya*. <https://lvcthealth.org/wp-content/uploads/2018/03/REACHOUT-Kenya-Context-Analysis-report.pdf>
- Mugenda, O.M. & Mugenda, A.G. (2003). *Research Methods, Quantitative and Qualitative Approaches*. ACT press.
- Padarath, A. & Friedman, I. (2008). *The status of clinic committees in primary level public health sector facilities in South Africa*. [Master's Thesis, University of the Western Cape], Faculty of Community and Health Sciences. <https://core.ac.uk/download/pdf/13546.pdf>
- Poku, A.B. (2008). *Decentralization and health service delivery- Uganda case study*. [Master's Thesis, University of Ghana Legon]. Massachusetts Institute of Technology. <https://dspace.mit.edu/handle/1721.1/69394>
- Wangalwa, G., Cudjoe, B., Wamalwa, D., Machira, Y., Ofware, P., Ndirangu, M.1. & Ilako, F. (2012). *Effectiveness of Kenya's Community Health Strategy in delivering community-based maternal and newborn health care in Busia County, Kenya: non-randomized pre-test post test study*. <https://europepmc.org/article/PMC/PMC3587017>
- World Health Organization, (2008). *The World health Report: Primary Health Care, Now More Than Ever*. World Health Organization. https://www.who.int/whr/2008/whr08_en.pdf