

Community Health Workers' Knowledge, Attitudes and Practices towards Hypertension Prevention in Rulindo District, Rwanda

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Abstract

Hypertension affect 30% of adult population globally, it leads to heart diseases and stroke at respective. In Africa, the leading risk factor for death is hypertension. Many counties wide initiated the community health workers program to strengthen their health system, to achieve different goals of better life and mostly important to acquire wealth nation through service delivery as well as in controlling cardiovascular diseases including hypertension. The assessment of the Community Health Workers' knowledge, attitudes and practices towards high blood pressure or Hypertension prevention in Rulindo District was the aim of this study. The cross-sectional study design was used with quantitative approach. Systematic sampling technic used to select sample (283 respondents) from 968 community health workers in charge of multitasks (Binome) which was the target population. This study used quantitative data which were collected using self-administered questionnaire. The study findings showed shows that among respondents 39.2% were male and the majority of respondents 70.3% had primary level of education. The research findings showed that 63.4% of respondents had poor knowledge, 55% of respondents had positive attitude and 39.6% of respondents had poor practices towards hypertension. Although, this study revealed that community health workers with secondary level of education were more seven times more likely to have good practices to towards prevention of hypertension [ARO = 7.930; 95%CI = 2.205 - 28.524 and P = 0.002] compared to community health workers with no formal education. As recommendations, the Ministry of Health and Rwanda Biomedical Center have to improve awareness towards hypertension related knowledge, attitude and practices.

Keywords: Community Health Workers; Knowledge; Attitudes; Practices; Hypertension

Introduction

The wide extension and increment of hypertension is public health challenge worldwide. The Hypertension constitutes the burden of diseases particularly in developing countries where it causes huge mortality or early disability and mortality worldwide [1].

Hypertension affect 30% of adult population globally, it leads to heart diseases and stroke at respectively the first and fifth places as cause of death among affected population [2].

In Africa, the leading risk factor for death is the hypertension. Around 900,000 deaths (10% of the total deaths on the continent) died in 2016 due to hypertension. It causes also almost 50% of strokes on the continent [3]. The estimated prevalence of hypertension varies between 30,8% and 31,1% of adult population. Inheritance, consuming salt and fatty food, traditional medication and lack of physical activities, all found to be risk factors of increase of hypertension prevalence in Africa [3].

The prevalence of hypertension is estimated between 15,3% and 17,5% among adult population in Rwanda. It is below the prevalence in Africa, which is above 30% and this study came up with strategic recommendation on how to keep lowering the prevalence of hypertension in Rwanda [4].

Many counties wide initiated the community health workers program to strengthen their health system, to achieve different goals of better life and mostly important to acquire wealth nation. The community health workers kept playing a big role in many health service delivery as well as in controlling cardiovascular diseases including hypertension. Most of the time community health workers are not health professionals but some studies revealed that high percentage of them had high level of knowledge towards what are in charge [5].

Hence, community health workers acquire trainings optimality on health delivery services in order to finally improve their effectiveness on what they owe the community [6].

Some African countries established the community health workers program to make change, improve and strengthen health system and ensure or maintain their populations' good health and Rwanda didn't leave behind. Community health workers program started in 1995 in Rwanda with four main objectives. The first objective was to build strong capacity of structures which had been decentralized and good service delivery. The second objective was to ensure community members participation in activities related to community health. The third objective was to improve health service delivery through CHW motivation by introducing community performance-based financing (CPBF). The last objective was the way of coordination from central level to community level. Initially, there were three CHWs at village level, a pair of female and male named Binomes in charge of community case management (iCCM) of childhood sickness and basic care provision and One CHW named ASM (Agent de Santé Maternelle) in charge of maternal health [7]. This program has been kept growing by increasing package of services, such as tuberculosis patient's treatment with DOT, integration of malnutrition screening, contraceptives supervision, prevention of NCDs, healthy behaviors and practices promotion including family gardens, hygiene and sanitation. Although, Rwanda has been achieved great success in its health sector but it's still facing some major challenges including reaching the most vulnerable people, improving community participation, supporting its CHWs adequately as well as strengthening NCD prevention programs. Therefore, the assessment of Community Health Workers' knowledge, attitudes and practices regarding Factors Influencing Hypertension Among Population is highly needed in order to know what to improve and where to put much effort [7].

Developing countries including Rwanda are facing the challenge of non-communicable diseases as well as hypertension. The hypertension prevalence is estimated between 15,3% and 17,5% among adult population in Rwanda. It is below the prevalence in Africa, which is above 30% and the study conducted from Nyamasheke District found out that the estimation of national concerned institutions on hypertension prevalence was 17.5% and it was totally different from what was on the field and there were high percentage of hypertensive people and unaware about their health status. Hence, the previous studies focused only on prevalence of hypertension and the knowledge, attitude and practice of CHWs towards it wasn't assessed as the CHWs named binomes are the ones dealing with NCDs including hypertension [8]. Rwanda has established CHWs program in 1995s to improve maternal and child services towards clinic through health promotion and education. Community health workers (CHWs)'s package kept increasing and currently non-communicable diseases have been integrated including hypertension. There is no training yet on cardiovascular diseases countrywide for community health workers so then their knowledge, attitude and practices towards hypertension or high blood pressure need to be assessed.

Objectives of the Study

- To assess level of knowledge among community health workers towards the hypertension prevention in Rulindo District of Rwanda.
- To determine the attitudes of community health workers towards prevention of hypertension in Rulindo District of Rwanda.
- To identify the practices of CHWs towards prevention of hypertension in Rulindo District of Rwanda.

Research Questions

- What is the level of knowledge among community health workers towards the hypertension prevention in Rulindo District of Rwanda?
- What are attitudes of Community Health work in Prevention of Hypertension of Rulindo District population?
- What are practices of community Health work in prevention of Hypertension?

Methods

Study design

This study was used cross-sectional study design and was helped the researcher to collect quantitative data to answer research questions which are all about community health workers' knowledge, attitude and practice. This study design was also enabled the researcher in determining the knowledge, attitude and practices of community health workers on factors influencing the hypertension among population of Rulindo District.

Target population

A total number of 968 female and male community health workers named Binome who were in charge of non-communicable diseases from 2015 up to date in Rulindo District was target population and representative sample was calculated in sample determination (MoH).

Sample size and sampling procedure

To select the sample under this study, probability sampling technique was used to select 283 participants. Cluster sampling is a technique in which researcher pre-existing unit such as, cities or schools used as clusters by the researcher and then form a sample by randomly selection of participants from those clusters. The researcher was used pre-existing existing clusters which was the sectors and pre-existing list of community health workers in charge of treatment of illness and health education (Binome) was gotten from District Hospitals (Rutongo and Kinyihira). Then after, systematic sampling technic was used to select number of participants from sectors accordingly. Structured questionnaires were translated in Kinyarwanda for effective communication and better understanding for data collectors who were helping the researcher in data collection and printed copies were utilized to gather information from community health workers (Binome). The questionnaire made up with four sections; first section included socio-demographic characteristics of respondents, the second was knowledge assessment related questions, the third was attitude assessment related questions and fourth section was about practice assessment related knowledge.

Reliability and validity of questionnaire

Validity refers to the extent to which a measurement is well-founded accuracy collected measures or data while reliability lays to the degree of measurement consistency depending on validated measures. To prevent sampling errors, only CHWs (Binome) who meet inclusion criteria was interviewed. Pilot study was conducted on 20 (5%) of sample size and simple randomly sampling was used to select and pilot CHWs (Binome) to test reliability but this pilot people were excluded during the right data collection. To ensure the reliability of research tool, researcher was verified the completeness of questionnaire and consistency of respondent's answers and then, validity was depended on the reliability of this research tool when reused in future study.

Data analysis and ethical consideration

To analysis data of this study SPSS V.21 was used and eventually, enable to calculate measures of central tendency. All data from different components of the questionnaire was entered to an SPSS computer program by researcher, coded and further cleaned. Analysis was included by the following: Descriptive statistics, mainly frequency, mean and percentage was applied to demographic, socio-economic, demographic profiles of participants and other variables addressing to influencing factors of hypertension and therefore, quantitative data were presented using tables, charts and graphs.

The study was implemented in accordance with the research protocol approved by both the MKUR research ethical committee and Rulindo District and ethical Permissions from them also was obtained. Researcher looked for participant's consent to voluntarily participate in this study before data collection attempt, and was not ask and or indicate participants' names on study questionnaire.

Results

Demographic characteristics of respondents

As indicated in table 1, those are socio-demographic characteristics of 283 participants all reached and data collected by using questionnaire through face to face interview.

Variables	Frequency	Percent
Age group		
20 - 30 Years	31	11
31 - 40 Years	93	32.9
41 - 50 Years	98	34.6
> 50 Years	61	21.6
Education level		
No formal education	18	6.4
Primary	199	70.3
Secondary	66	23.3
Religion of respondents		
Christian	265	93.6
Muslim	18	6.4
Place of residence		
Rural	269	95.1
Urban	14	4.9
Marital status		
Single	26	9.2
Married	241	85.2
Divorced	16	5.7
Sex of respondents		
Male	112	39.2
Female	171	60.4
Occupational		
Employed	44	15.5
Farmer	239	84.5

Table 1: Socio-demographic characteristics of respondents.

Source: Primary data.

The table 1 of socio-demographic characteristics of respondents, shows that among respondents 112 (39.2%) were male while 171 (60.4%) were female. For education level, the majority of respondents 199 (70.3%) had primary level of education and 66 (23.3%) of them had secondary level of education. The majority of respondents were Christians 265 (93.6%) and the place of resident was rural for 269 (985.1%) respondents. 241 (85.2%) of respondents were married, only 44 (15.5%) were employed and 239 (84.5%) of them were farmers.

Presentation of findings

The findings of this study are presented according to their research objectives which are to assess level of knowledge among community health workers towards the hypertension in Rulindo District of Rwanda, to determine the attitudes of community health workers towards prevention of hypertension in Rulindo District of Rwanda and to identify the practices of CHWs towards prevention of hypertension in Rulindo District of Rwanda.

The knowledge among community health workers towards the hypertension in Rulindo district

The objective one was to assess level of knowledge among community health workers towards the hypertension in Rulindo District of Rwanda and was measured by score assessment of variables. Sixteen (16) statements in the table 2 were used to assess level of knowledge among community health workers and all statements are positive where the overall score is 16 and the mean was 10.07. The scores are 0 and 1 for no and yes respectively.

Variables	Frequency	Percent
Did you hear about hypertension?		
Yes	230	81.9
No	43	15.3
No response	8	2.8
BP below 120 systolic and below 80 diastolic		
Yes	31	12.1
No	248	87.9
BP between 120 to 139 systolic or 80 to 89 diastolic		
Yes	82	30.1
No	197	69.9
BP between 140 to 159 systolic or 90 to 99 diastolic		
Yes	96	34
No	183	64.9
Stress or anxiety		
No	62	21.9
Yes	221	78.1
Too much salt intake		
No	45	15.9
Yes	236	83.4
Lack of physical exercises		
No	77	27.2
Yes	206	72.8

Inheritance (Familial)		
No	237	83.7
Yes	45	15.9
High cholesterol		
No	135	48.1
Yes	147	51.9
Overweight/obesity		
No	101	36.7
Yes	179	63.3
Smoking		
No	102	36.4
Yes	180	63.6
Aging		
No	216	76.3
Yes	66	23.7
Diabetes		
No	187	66.1
Yes	96	33.9
Malnutrition		
No	189	66.8
Yes	94	33.2
Calcium deficiency		
No	193	68.2
Yes	90	31.8
Alcohol abuse		
No	99	35.3
Yes	183	64.7

Table 2: Knowledge among community health workers towards the hypertension in Rulindo district. Source: Primary data.

To assess the knowledge of community health workers towards hypertension, there were related statements which have been used. Among respondents, 230 (81.9%) of them said that they have had about hypertension and 31 (12.1%) of respondents agreed that the statement said that BP below 120 systolic and below 80 diastolic describes high blood pressure. 197 (69.9%) of respondents disagreed with the statement which was saying that "blood pressure between 120 to 139 systolic or 80 to 89 diastolic" describes high blood pressure and 183 (64.9%) respondents disagreed with the statement which was saying that "blood pressure between 140 to 159 systolic or 90 to 99 diastolic" describes a high blood pressure.

Level of knowledge among community health workers towards the hypertension

The score assessment has been done and the total score was 16 with mean of 10.07. The respondents with score less than mean have been considered to have poor knowledge whereas respondents with score greater than the mean have been considered to have good knowledge.

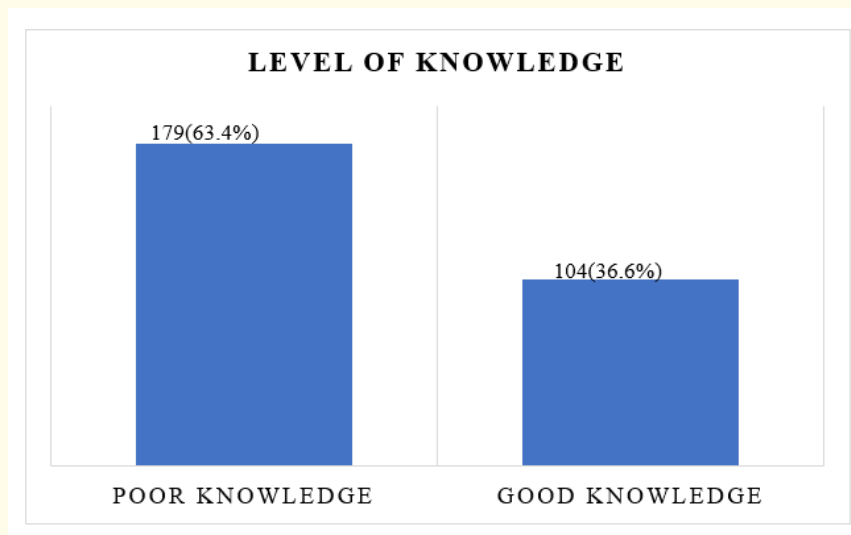


Figure 1: Level of knowledge.

As indicated by the figure 1 179 (63.4%) of respondents had poor knowledge towards hypertension and 104 (36.6%) of respondents had good knowledge towards hypertension.

Attitudes of community health workers towards prevention of hypertension in Rulindo district

The objective two was to assess level of attitude among community health workers towards the hypertension in Rulindo District of Rwanda and was measured by score assessment of variables. Seven (7) statements in the table 3 were used to assess level of attitude among community health workers and all statements are positive where the overall score is 7 and the mean was 4.59. The scores are 0 and 1 for No and Yes respectively.

Variables	Frequency	Percent
Do you consider hypertension as serious diseases?		
No	15	5.3
Yes	268	94.7
What is the reason for not taking drugs for HP person		
Stopped when feel better	79	27.9
Cannot afford cost	66	23.3
Serious side effects	27	9.5
Do not feel like it	45	15.9
Forgetfulness	32	11.3
Do you think HP can be cured when diagnosed and treated earlier?		
Yes	24	8.5
No	259	91.5

Avoid stress		
No	61	21.6
Yes	222	78.4
Lifestyle Change		
No	158	55.8
Yes	125	44.2
Regular medication		
No	238	84.1
Yes	45	15.9
Regular BP measurement		
No	153	54.1
Yes	130	45.9

Table 3: Attitudes of community health workers towards prevention of hypertension in Rulindo district.

Source: Primary data.

Among respondents 268 (94.7%) agreed that they consider hypertension as serious diseases but 24 (8.5%) of them agreed that hypertension can be cured when diagnosed and treated earlier. For the reason for not taking drugs for hypertension person, 79 (27.9%) of respondents said that feeling better could be the reason while 27 (9.5%) of them agreed that Serious side effects could be the reason of not taking drugs for hypertension person.

Attitudes of community health workers towards prevention of hypertension

The score assessment has been done and the total score was 7 with mean of 4.59. The respondents with score less than mean have been considered to have negative attitude whereas respondents with score greater than the mean have been considered to have positive attitude.

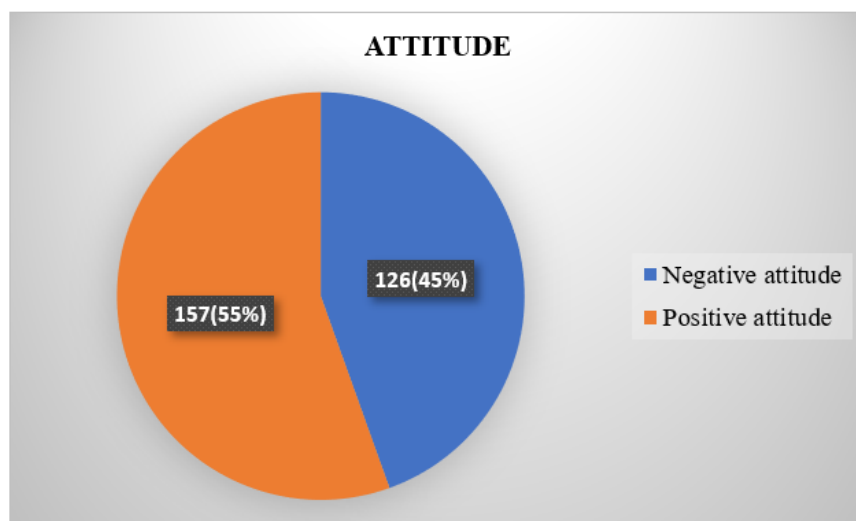


Figure 2: Attitudes of community health workers towards prevention of hypertension.

As indicated by the figure above 157 (55%) of respondents had positive attitude towards hypertension and 126 (45%) of respondents had negative attitude towards hypertension.

Practices of community health workers towards prevention of hypertension in Rulindo district

The objective three was to assess level of practices among community health workers towards the hypertension in Rulindo District of Rwanda and was measured by score assessment of variables. Twelve (12) statements in the table 4 were used to assess level of practices among community health workers and all statements are positive where the overall score is 12 and the mean was 8.54.

Variables	Frequency	Percent
Hypertension Screening		
Often	184	65.1
Sometimes	71	25.1
Never	28	9.8
Weight control		
Often	177	62.5
Sometimes	95	33.6
Never	11	3.9
Physical exercise		
Often	187	66.1
Sometimes	74	26.1
Never	22	7.8
Healthy diet/nutrition		
Often	220	77.7
Sometimes	51	18
Never	12	4.2
Harms of alcohol		
Often	158	55.8
Sometimes	101	35.7
Never	24	8.5
Harms of smoking		
Often	166	58.7
Sometimes	88	31.1
Never	29	10.2
Harms of caffeine-based drinks		
Often	147	51.9
Sometimes	84	29.7
Never	52	18.4
Salt consumption		
Often	167	59
Sometimes	85	30
Never	31	11

Effect of disturbed sleeping		
Often	110	38.9
Sometimes	88	31.1
Never	85	30
Comorbidities leading to hypertension like kidney disease, diabetes etc.		
Often	138	48.8
Sometimes	92	32.5
Never	53	18.7
Being stressed because hypertension		
Often	129	45.6
Sometimes	93	32.9
Never	61	21.6
How many times of check-up per year		
Once	94	33.2
Two times	104	36.7
More than two times	85	30

Table 4: Practices of community health workers towards prevention of hypertension in Rulindo district.

Source: Primary data.

To assess the practices among community health workers towards hypertension, they have been asked how often they use to discuss about the topics related to hypertension. 184 (65.1%) of respondents said that they often discuss about hypertension screening with community members and 95 (33.6%) of participants said that they sometimes discuss about weight control with community members. 158 (55.8%) of respondents said that they often discuss about the harms of alcohol with community members, 147 (51.9%) of participants said that they often discuss about the harms of caffeine-based drinks with community members and 104 (36.7%) of them said that check-up for hypertension done twice per year.

Practices of community health workers towards prevention of hypertension

For determining the level of practices of community health workers towards prevention of hypertension, the score assessment has been done and the total score was 12 with mean of 8.54. The respondents with score less than mean have been considered to have poor practices whereas respondents with score greater than the mean have been considered to have good practices.

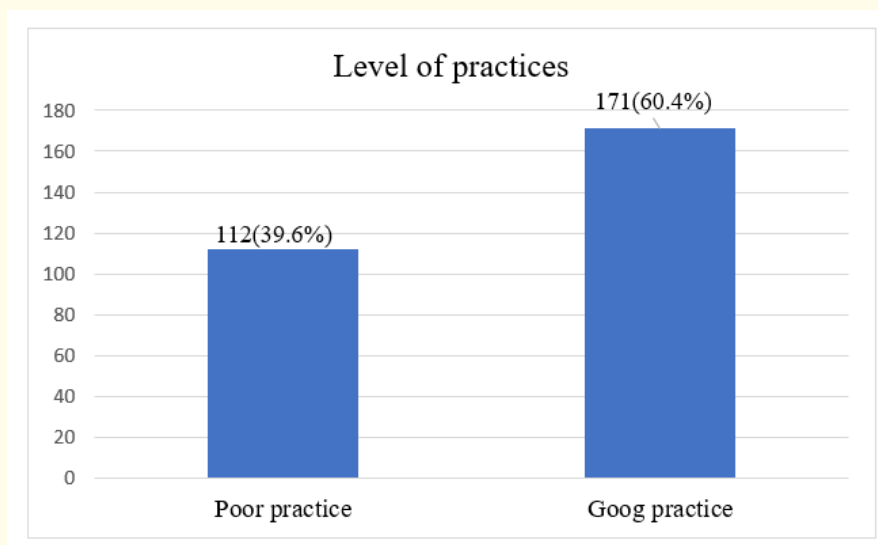


Figure 3: Level of practice of community health workers towards prevention of hypertension.

As indicated by the figure 3 112 (39.6%) of respondents had poor practices towards hypertension and 126 (45%) of respondents had good practices towards hypertension.

Factors influencing practices of CHWs towards prevention of hypertension in Rulindo district of Rwanda

To determine factors influencing practices of CHWs towards prevention of hypertension in Rulindo District of Rwanda, 9 factors evaluated to check whether there was statistically significant with practices of CHWs towards prevention of hypertension with < 0.05 P-value calculated to 95% CI, as presented in the table 5 below.

The table 5 shown that there was statistically significant between educational level, religion, level of knowledge and level practices of CHWs towards prevention of hypertension with < 0.05 P-value calculated to 95% CI.

Variables	AOR	95% CI		p value
		Lower	Upper	
Education level				
No formal education	Ref			
Primary	2.972	0.897	9.845	0.075
Secondary	7.930	2.205	28.524	0.002
Religion of respondents				
Christian	Ref			
Muslim	0.315	0.096	1.036	0.057
Level of knowledge				
Poor knowledge	Ref			
Good Knowledge	2.837	1.62	4.968	<0.001

Table 6: Factors influencing practices of CHWs towards prevention of hypertension in Rulindo district of Rwanda (Multivariate analysis).

Source: Primary data.

This study revealed that community health workers with secondary level of education were more seven times more likely to have good practices to towards prevention of hypertension [ARO = 7.930; 95%CI = 2.205 - 28.524 and P = 0.002] compared to community health workers with no formal education. The study also revealed that community health workers with good knowledge were more likely to have good practices towards prevention of hypertension [ARO = 2.837; 95%CI = 1.62 - 24.968 and P = < 0.001] compared to community health workers with poor knowledge.

Discussion

In Rwanda, such kind of knowledge, attitude and practices surveys had been conducted and have been focusing on preventive measures of hypertension among people with high blood pressure and some respondents showed that lifestyle change, regular BP measurement, stress reduction and regular medication, should be followed as preventive measures of hypertension. Hence, in Rwanda there is no study about knowledge, attitude and practices of community health workers towards hypertension yet.

The present study came up to fill the stated gap by aiming at assessing knowledge, attitude and practices of community health workers towards hypertension prevention in Rulindo District of Rwanda. The first objective of the present study was to assess level of knowledge

among community health workers towards the hypertension in Rulindo District of Rwanda and was measured by score assessment of variables. The respondents with score less than mean have been considered to have poor knowledge whereas respondents with score greater than the mean have been considered to have good knowledge. The present study revealed that the level of knowledge among community health workers is still low where 104 (36.6%) of respondents had good knowledge towards hypertension while 179 (63.4%) of respondents had poor knowledge towards hypertension.

The present study was not in the same line with the one which conducted from Brazil. From the findings of this study, the majority of the participants had good knowledge regarding hypertension. This might be linked with enough trainings that they had been attained and experiences from the participatory discussions with the community members including hypertension patients [6].

In this present study revealed that among respondents 268 (94.7%) agreed that they consider hypertension as serious diseases but 24 (8.5%) of them agreed that hypertension can be cured when diagnosed and treated earlier. The score assessment has been done and the total score was 7 with mean of 4.59. The respondents with score less than mean have been considered to have negative attitude whereas respondents with score greater than the mean have been considered to have positive attitude. As indicated by the figure above 157 (55%) of respondents had positive attitude towards hypertension and 126 (45%) of respondents had negative attitude towards hypertension.

The study conducted from Malang which was about knowledge and attitude of community health workers regarding hypertension and its management. This study was almost in the same line with the present study, where it found out that the attitude of participants was higher at the percentage of 82% [5].

This study revealed that community health workers with secondary level of education were more seven times more likely to have good practices towards prevention of hypertension compared to community health workers with no formal education. The study also revealed that community health workers with good knowledge were more likely to have good practices towards prevention of hypertension compared to community health workers with poor knowledge.

The present study was in contradictory with the study conducted from Eastern Ethiopia which stated that knowledge and attitude was fairly good but practices was poor. Hence, the present study revealed that knowledge and attitude was fairly poor while practices were better. This contradiction might be linked with cultural belief and perception towards hypertension in Ethiopia which could differ from the one in Rwanda [9].

Conclusion

The main purpose of this study was to assess the community health workers' knowledge, attitudes and practices towards hypertension prevention in Rulindo District of Rwanda.

The present study results showed that a significant community health workers had poor knowledge, almost a half of respondents showed to have negative attitude towards hypertension prevention and more than a half of respondents had good practices towards hypertension prevention.

The study results in the table 5, there was statistically significant between educational level, religion, level of knowledge and level practices of CHWs towards prevention of hypertension with < 0.05 P-value calculated to 95% CI.

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