STUDY REPORT

An Exploration Study on the Use of Diet and Home Remedies in the Management of Cardiovascular Diseases in Kwale County

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Institution: North Coast Medical Training College

Authors: Mkamburi Kilian Mwadime BSc FND (Principal Investigator)

Dorothy Ali Tenai   BSc FND (Co- investigator)

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ABSTRACT

Background: Cardio vascular diseases (CVDs) have globally become the leading cause of mortality. In Kenya, non-communicable diseases (NCDs) accounts for 27% of the total deaths with CVDs accounting for between 6.1 and 13% of the deaths. Studies have been published on the use of diets and home remedies to manage CVDs. Despite the increasing awareness on the use of diets and home remedies to manage CVDS and other non-communicable diseases (NCDs), not many studies in Kwale County have been documented so far.

Objective: To do a community based observational study to establish if the Digo and the Duruma, communities of Kwale utilize diets and home remedies in prevention and the management of CVDs.

Design: An observational study design was used. The study areas were Kinango, Msambweni and Matuga sub-counties in Kwale County. Structured interviews using questionnaires among 63 participants and 21 Focus group discussions (FGDs). 21 villages across the three sub-counties were randomly selected, criterion base selection of respondents identified through snowball sampling. Data was collected using questionnaires, observation and tape recording for FGDs and analyzed using SPSS software and qualitative analysis of transcripts of FGDs

Results: The two communities have a wide array of traditional home remedies and diets used in the management of CVDs and also remedies for other diseases. Traditional Home remedies were more popular than the traditional diets. Most of the remedies did not have elaborate prescriptions although those who used them claimed that they work. Generally, there was no specific remedies for specific CVDs except only in few cases. The indicators they use to judge the efficacy of the remedies were to a larger extent unmeasurable.

Conclusions: The Digo and the Duruma have their own traditional diets and home remedies they use to manage CVDS. Being an explorative study, quantitative studies need to be done to establish the extent to which the diets and home remedies are utilized in the two communities, establish the correct dosages and come up with measurable indicators for judging the efficacy of these remedies and give distinction between remedies that prevent and those that manage or treat CVDs

LIST OF ABBREVIATIONS

CVDs   cardiovascular diseases

FGDs   Focus Group Discussions

KNBS   Kenya National Bureau of Standard

MOH   Ministry of Health

NACOSTI   National Commission for Science, Technology and Innovation

NCDs   Non-communicable diseases

WHO   world health organization

1.0   INTRODUCTION

1.1 Background Information

A majority of the cardiovascular diseases (CVDs) have been termed as silent killer diseases. Globally, CVDs tops the list of the leading cause of mortality (WHO, 2017). In 2015 alone for instance, CVDs accounted for about 17.7 million deaths which translates to about 30% of the global deaths of the total CVDs deaths, coronary heart diseases and stroke contribute about 7.4 million and 6.7 million deaths respectively. Though still lower, the figures in Sub-Sahara Africa are quickly rising. Moreover, the region has the highest premature mortality rate for CVDs (in persons under 70 years of age). This has created a double burden of disease as the region is still struggling with infectious diseases as well (WHO, 2017). In Kenya, all non-communicable diseases (NCDs) together account for 27% of the total deaths and more than 50% of the total hospital admissions. CVDs are among the major NCDs in the country and account for between 6.1 and 13% of deaths in Kenya (MOH, KNBS, WHO, 2015).

WHO has come up with guidelines that can be used to prevent CVD in which diet is included among many others. Such guidelines give both foods that can predispose one to CVDs and should therefore be avoided and those which can reduce the risks of developing CVD (WHO, 2017). Moreover, there is an increasing recognition of the utilization of diets and home remedies such as herbal medicine in the prevention and management of CVDs where by much of the interest is put on the nutrients in foods such as the vitamins and antioxidants both in foods and particular herbs (Walden R, Tomlinson B, 2011). This study will be seeking to find out which diets and home remedies are used by Kwale people to prevent and manage CVDs. The study will farther seek to find out if those diets and home remedies being used are in line with conventional medicine and nutrition guidelines or not. Also, we would want to know if they use the home remedies concurrently with conventional medication and if so, are their physicians/nutritionists aware about it? Furthermore, we will also want to establish if the two communities in Kwale used biomedical descriptions of CVDs when describing the diseases or not.

1.2 Literature Review

Non-communicable diseases (NCDs) in Kenya are almost dominating the inpatients hospital admission and also significantly contributing to the total mortality cases in the country. About 27% of the total mortality in the country are due to NCDs while at the same time they contribute to approximately 50% of all inpatient hospital admissions. As a result, a disease burden has been created that adversely affects the livelihood of the affected families and the national economy at large. NCDs conditions include but are not limited to cancer, diabetes, CVD and chronic obstructive pulmonary disease, however, CVD have been shown to be one of the major NCDs conditions in Kenya (MOH, KNBS, WHO, 2015; Republic of Kenya, MOH, WHO, Kenya Red Cross IANPHI, 2015). In this study however, the focus will be on CVD.

The main conditions constituting CVDs include ischemic heart diseases, cerebrovascular diseases, cardiomyopathy, valvular heart diseases and pericarditis which when combined together are shown to be the leading cause of morbidity and mortality worldwide and account for about 80% of all the total deaths in the developing countries. In Kenya, the approximated percentage mortality attributed to CVDs range between 6.1 % and 13%. (Republic of Kenya, MOH, 2015; MOH, KNBS, WHO, 2015; WHO,2017; Celermajer, Chow, Marijon, Anstey and Woo. 2012). Among the reasons why the developing countries have higher mortality rates associated with CVDs is because of poverty levels which are high meaning that they may not be able to access better healthcare. These low and middle-income countries in which Kenya is included also have been shown to have an increased prevalence of the risk factors associated with CVD within the age bracket of 35 to 69 years (Mbewu & Mbanya, 2006; Ahmed,2012; Mathenge, Foster & Kuper, 2010; Kenya Economic Report,2017).

The risk factors associated with the onset of CVDs include age, family history and gender over which, one has very little control. However, some other factors such as dietary choices, sedentary lifestyle, excessive alcohol intake and heavy tobacco smoking, can be controlled. Higher chances of developing CVDs exist when one has more than one of the risk factors (MOH, KNBS, WHO, 2015; WHO, 2007; Chege, 2016). In Garissa- Kenya, for instance, studies which were done to establish the prevalence of CVD risk indicators like hypertension, diabetes mellitus, increased cholesterol levels in blood revealed an increasing risk mostly attributed to sedentary lifestyle and poor dietary choices (Ahmed,2012).

The risk factors of CVDs can greatly be minimized if sustainable interventions are done early enough. Such interventions include both lifestyle and drug treatment (WHO,2007). Nevertheless, in general, most

people are not aware of their risk status. In Sub- Sahara Africa, the available data on knowledge of CVDs risk factors among the general population is quite limited but still points out that majority of the people have little knowledge about CVDs and some not aware of their risk status. This applies to Kenya as well. When members of the population have sufficient knowledge on CVDs and the risk factors, chances of exposure to modifiable risk factors can be minimized which in the long ran helps in the prevention and control of CVD (WHO, 2007; Aminde et al, 2017; Chege, 2016).

Diet plays a key role in the prevention and management of CVDs. Consumption of food in its natural form reduces the risks of developing CVDs while shifting from traditional to modern diets which mostly include high intake of saturated and trans-fats fat, high sugar and highly refined food stuffs increases the risks of developing CVDs (NCBI. 2010. Fuster V, Kelly BB Eds ; Hawkes, 2006; WHO, 2007). This owes to the fact that foods and herbs have some particular antioxidants that can assuage the chronicity of CVDs. As well, the use of diets and home remedies such as herbal medicines in the management of CVDs is becoming more popular (Walden R, Tomlinson B, 2011). Nonetheless, the concomitant use of some of the home remedies and conventional medicine may pose some risks to health due to herb- drug interaction. In this case the herbs may mimic, oppose or amplify the effects of the conventional drugs which may escape pharmacovigilance. This happens when the patients fail to report to the physician about their concurrent use of home remedies and conventional medicine (Suroowan S, Mahomoodally F, 2015; Walden R, Tomlinson B, 2011).

2.1 Problem Statement

According to Kenya strategies for the prevention and management of non-communicable diseases (NCDs) the focus is mainly put on watching out on the risk factors which include unhealthy diets, harmful intake of alcohol, lack of exercise, heavy tobacco smoking among others and for the treatment/management part, conventional medicines are prescribed. However, based on oral reports by some of the Kwale residents, there are communities in Kwale that use special/ particular diets and home remedies as a way of preventing or managing CVDs although the information is not documented in the Kenyan strategies for the prevention and management of NCDs. Again, there are no documented studies about the use of particular diets and home remedies in the management of CVDs in Kwale. In addition, the efficacy of those particular diets and home remedies also remains unknown.

2.2 Broad Objective

To find out about the utilization of diets and home remedies in the prevention and management of CVDs in Kwale county.

2.3 Specific Objectives

i.   To find out how the Digo and Duruma describe CVDs.

ii. To establish which particular diets are used in the prevention and management of CVDs and how they are prepared.

iii. To identify particular home remedies used to prevent and manage CVDs and how they are prepared.

iv. To find out the reasons why they use such diets and home remedies and how they judge their effectiveness when used without medication and when concurrently used with conventional medicine.

v.   To establish if the home remedies and diets used in the management of CVDs are taken as an alternative to modern medicine or complementary to medication

vi. To establish if those who use the diets and home remedies concurrently with conventional medicine seek advice from physicians or registered nutritionists.

3.0 METHODOLOGY

3.1 Study Design

A community based observational study was conducted which was qualitative in nature. In-depth interviews, direct observation, were the methods used to collect the data. In each village, data was collected from three different groups of respondents for triangulation purposes. First, from the elderly population who participated in the focus group discussions (FGDs). Secondly, key informants – those known for prescribing the special diets and the home remedies and or the herbalists and, thirdly the CVDs patients.

3.2 Study Area

The research was conducted in three sub-counties of Kwale County; Kinango, Msambweni and Matuga predominantly inhabited by the Digo and Duruma sub-tribes of the Mijikenda.

3.3 Study Population

The study population included both male and female adults above the age of 45 years, either with or without CVDs living in Kwale County. The age of 45 years and above was chosen because most of the non-communicable diseases are associated with aging. 45 years was the minimum age however preference was given to those found to be advanced in years in the selected villages. The traditional herbal medicine practitioners and other people known to prepare such remedies were also be part of the study population.

3.4 Sampling Method

A criterion-based sampling technique was used particularly purposive and snowball sampling. Purposive sampling with an emphasis on maximum variation sampling applied when picking the first category of respondents who were participated in the FGD while snowballing was used for key informants and the known CVDs patients across the three sub-counties.

Although we intended to use administrative wards, it turned out to be more practical to work with locations, sub-locations and villages. From Kinango sub-county, the following three locations were

randomly selected: Chengoni, Ndavaya and Vigurungani, from Matuga sub-county Tsimba and Mbuguni location were picked and from Msambweni sub-county, Msambweni and

Kingwede Shirazi locations were selected.

Thereafter, three villages were randomly picked from each of the selected locations making a total of 21 villages where samples will be picked from.

Each single village provided one FGD, at least one key informant, and two CVD patients. Where no key informant or a known CVDs patient was found in a village, they were picked from a nearby village or any other place within the sub-county through snowballing.

3.5 Recruitment and Consenting Procedure

Introduction to all the three categories of respondents in the villages was through the chiefs/ sub-chiefs and the village elders. The data collectors and FGD facilitators shared the information written in the consent document and for the illiterate respondents, the data collectors and FGD facilitators read it out for them. The data collectors and the FGD facilitator thereafter documented the names, location and consent of the participants and the information was kept separately from the other anonymous study data.

3.6 Data Collection Procedures

After obtaining ethical clearance, approval for the study was sought from NACOSTI and from the County Research Department before data was collected. From the Kwale county commissioner a list of all locations and villages in Matuga, Kinango and Msambweni Sub-Counties was obtained which was then used to sample the locations and the villages. The selected villages from each specific location were visited to inform the village elders about the study and also to link us to the respondents, and set dates for the FGDs and the interviews. A team of data collectors traveled to the respective locations on the agreed date(s) and conducted the FGD and the interviews.

3.7 Variables

The same variables used in FGD were also used in the individual interviews. The following themes were studied:

- ➢ Socio-demographic data and if it influences the use of diets and home remedies
- ➢ Knowledge of CVDs between the two communities
- ➢ The particular diets and the home remedies both for prevention and management of CVDs
- ➢ Preparation procedures for the diets and the home remedies,
- ➢ Indicators for judging the efficacy of the diets and home remedies for CVDs patients.
- ➢ Practices related to the utilization of diets and home remedies such as do they use the diets and home remedies together with conventional medicine, do they use the diets and the home remedies together or separately, do they seek advice from professional caregivers about the use of the diets and home remedies especially those who might be combining them with conventional medicine, what is their preference? Diets and home remedies then conventional medicine later or conventional medicine then diets and home remedies later?
- ➢ Adverse effects related to the use of diets and home remedies in the management of CVDs.

3.8 Quality Assurance Procedure including Training of Staff

To increase the validity and the reliability of the data collected, data collectors were trained for two days to make them conversant with the study. During the training, they were introduced to the study in general then collectively reviewed the methods and tools for data collection as either FGDs facilitators or interviewers. Actual data collection was simulated during the training.

3.9 Data Collection Instruments

Questionnaires were used for the interviews. These questionnaires contained both close and open-ended questions. The questions were red to the respondents and the responses were recorded by the interviewers in verbatim. We intended to use videos and cameras to capture the preparation of the diets and home remedies but this was not possible during the actual study.

For the FGDs, discussions were guided by set themes and were recorded using audiotapes which were later transcribed in English.

3.10 Data Management and Analysis

All the collected data and transcription are and will still be kept anonymous. However, a separate sheet containing all the information of the respondents such as their names and locations together with the consent forms is securely kept away from the other anonymzed study data.

For the interview, the data was entered directly through mobile application, however, a back-up copy (paper) was filled and kept just in case of anything.

The audiotaped data for the FGD was fully transcribed after data recording. The data was analyzed manually whereas the quantitative data was analyzed using SPSS software and MS excel.

3.11 Study Limitations

The study was only limited to two communities due to financial and time constraints meaning that the findings may be biased if generalized in all the communities found in Kwale County. However, the paucity of these findings should be a pinnacle to all the relevant offices charged with the mandate of dealing with NCDs and more particularly CVDs in Kwale County.

The respondents especially the key informants might have withheld some key information in fear that the information may be used against them or be leaked to the community members which otherwise should be a secret to themselves as this could be one of their main source of livelihood. Again, they might have wanted to impress the interviewers and maybe failed to point out some adverse effects associated with the home remedies or even just shared information which they think was socially acceptable.

4.0 RESULTS

Interviews were conducted for the key informants (KI) and the CVDs patients using questionnaires which were filled electronically. The study targeted 21 KI and 42 CVD patients but only 19 KI were found and therefore the two slots for the KI were filled by two extra CVDs patients to make a total of 63 respondents. 21 Focus group discussions (FGD) comprising of adults of age 45 years and above thought to be free of CVDs were also conducted.

4.1.0 Description of socio-demographic data

4.1.1 Level of education of the participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary	14	22.2	22.2	22.2
	Secondary	3	4.8	4.8	27.0
	Never gone to school	36	57.1	57.1	84.1
	Dropped out	10	15.9	15.9	100.0
	Total	63	100.0	100.0	

Majority of the respondents 36 out of 63 never went to school and then followed by those who attended primary school. This can be indicative of high levels of illiteracy in the sampled locations of Kinango, Msambweni and Matuga.

4.1.2 Religion:

Religion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Christian	8	12.7	12.7	12.7
	Islam	51	81.0	81.0	93.7
	Pagan	4	6.3	6.3	100.0
	Total	63	100.0	100.0	

Islam was found to be the dominant religion with 51 out of the 63 respondents.

4.1.3 Sub-tribes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Digo	31	49.2	49.2	49.2
	Duruma	26	41.3	41.3	90.5
	Giriama	1	1.6	1.6	92.1
	Kamba	3	4.8	4.8	96.8
	Maasai	1	1.6	1.6	98.4
	Rabai	1	1.6	1.6	100.0
	Total	63	100.0	100.0	

Apart from the dominant Duruma and the Digo, the area has some Giriama, kamba, Maasai and Rabai.

4.1.4 Distribution of level of education across the sub-tribes

Sub tribe * Education level Cross tabulation

Count

		Education level				Total
		Primary	Secondary	Never gone to school	Dropped out	
Sub tribe	Digo	8	2	19	2	31
	Duruma	5	1	14	6	26
	Giriama	0	0	1	0	1
	Kamba	0	0	1	2	3
	Maasai	0	0	1	0	1
	Rabai	1	0	0	0	1
Total		14	3	36	10	63

4.2.0 Knowledge of cardiovascular diseases

Heard of cardiovascular diseases

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	60	95.2	95.2	95.2
	No	3	4.8	4.8	100.0
	Total	63	100.0	100.0	

Nearly all of the respondents 60 out of 63 have heard of cardiovascular diseases.

4.2.1 Local names used for CVDs by the community

The following names in Duruma and Digo dialect were the most common terminologies given by the respondents: *Ugonjwa wa moyo* which can be translated as *a disease of the heart'*, pressure, *chimashetani* which is difficult to translate, *guta moyo* which is difficult to translate, *kupooza* translated as paralysis, *fila moyo* difficult to translate, sukari translated as sugar, moyo kuvuta- difficult to translate kisunzi translated as dizziness mashetani; difficult to translated but possibly it may mean disease associated with satanic powers, *kufutuka moyo;* difficult to translate, *joka la ndani-* difficult to translate, ukongo wa moyo translated as disease of the heart, shinikizo la damu translated as high blood pressure, *kupheta kwa raho-* difficult to translate, *chiodekera-* difficult to translate

4.2.2 Local names and signs of stroke

The following terminologies and phrases in the Duruma and the Digo dialects were used to refer to stroke: *kupooza*, *kulemaa*, *ugonjwa wa baridi*, *pressure*, *roho kwenda mbiyo*, *upungufu wa damu*, *mshutuko wa moyo*, *vyoyo kusumba*, *guta*, *typhoid*, *fila moyo and jine* translated as demon*.

4.2.3 Local names and descriptions for hypertension (HTN)

The following terminologies and phrases in the Duruma and the Digo dialects were commonly used to refer to and describe HTN: *Presha* a word derived from the English word *pressure, guta,* baridi which may be associated with cold or stroke*, wasiwasi* which may be translated as a state of being anxious or nervous*, kufanene* difficult to translate*, and shetani kupanda* which may mean something to do with spiritual forces or faith.

4.2.4 Local names and descriptions for atrium defibrillation

For atrium defibrillation there was no common name and descriptions used.

4.2.5 Local names and descriptions for myocardial infarction

The following names and phrases were commonly used: *moyo kwenda mbio* which may probably mean faster heart rate than normal, *moyo kuhahuka,* difficult to translate, *presha, mshutuko wa moyo* difficult to translate*.

4.2.6 Local names and descriptions for heart failure

The following terminologies and phrases were commonly used: *presha, moyo haufanyi kazi vizuri* translated as malfunctioning heart*.

4.2.7 Local names and descriptions for congenital heart diseases

Magonywa ya maumbile ya moyo translated as in born heart diseases was one terminology that was mentioned by some few. Majority of the respondents about 40 out of 63 did not know the name or description for this condition.

4.2.8 Local names and descriptions for Heart valve disease

This condition did not have any common name and descriptions. However, there were about 10 respondents who gave different descriptions which made it difficult to establish whether it was a community description or individualized descriptions.

4.2.9 Local names and descriptions for blood vessel disease

The following names and phrases were commonly used: *kano* which is difficult to translate, *ugonjwa wa mishipa* translated as disease of the vessels, *mishipa kutopitish damu vizuri* translated as inability of blood vessel let blood flow well.

4.3.0 Is there particular way you use to classify diseases in this community?

Community disease classification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	11.1	11.1	11.1
	No	56	88.9	88.9	100.0
	Total	63	100.0	100.0	

56 out of 63 respondents did not have a particular way of classifying the diseases.

Only 7 respondents out of 63 (11.1%) accepted that CVDS can be classified. A cross tabulation below compares responses from CVD patients and the key informants.

Type of Respondent * Community disease classification Crosstabulation

Count

		Community disease classification		
		Yes	No	Total
Type of Respondent	CVD Patient	3	40	43
	Key Informant	4	16	20

| Total | 7 | 56 | 63 |

Three out of the 43 CVDs patients (7%) and four out of 20 (20%) KI agreed that CVDs can be classified. The difference may just have occurred due to chance because the two groups have different denominators. The bar chart in below illustrates this.
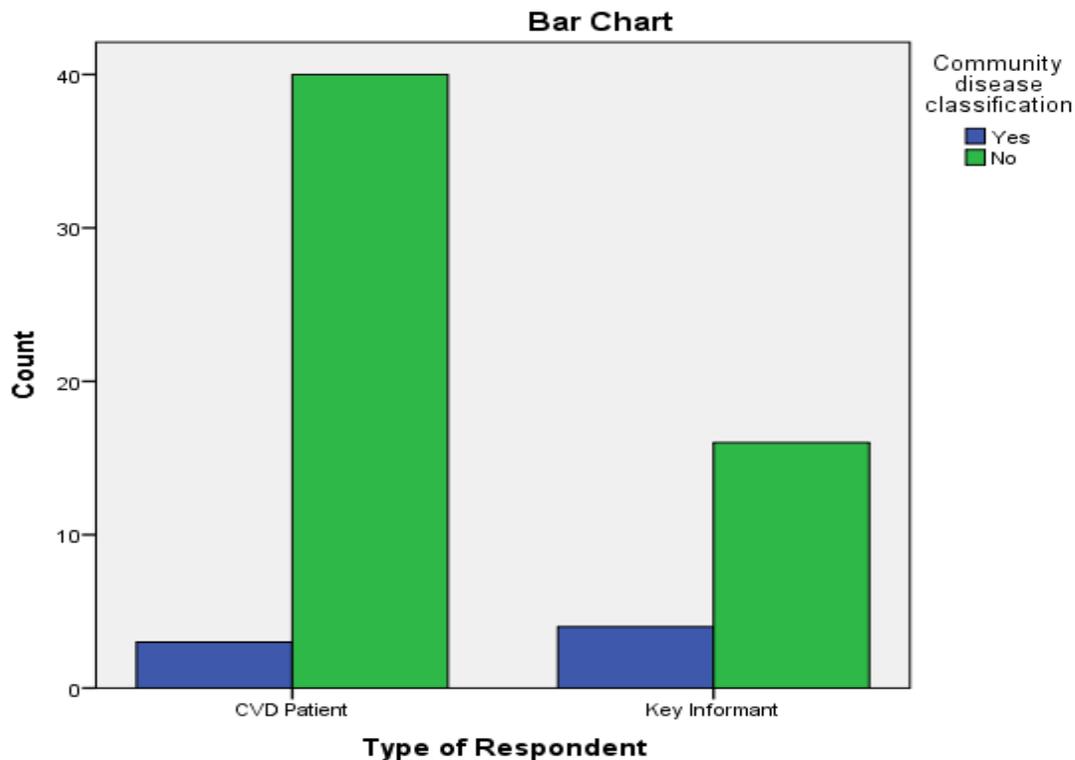
Although the 11.1% accepted that they can classify the CVDs in a particular way, they did not give similar classification. Nevertheless, descriptions given were revolving around CVDs. For instance, the following responses were given in Swahili language: *magonjwa ya mishapa na moyo,* meaning diseases of the blood vessels and the heart, *magonjwa ya kifamilia ama magonjwa ya moyo* meaning family linage diseases or diseases of the heart, *Yenye kuzaliwa nayo* to mean congenital diseases and *baridi* which referred to stroke. Despite all these the classification were to some extent in line with biomedical classification of CVDs and to another extent not in line with biomedical classification.

4.3.1 Description of the physical observable features of stroke

Headache, fatigue, fast heart rate and breathing difficulties, drowsiness paralysis and frequent urination were mentioned as the physical observable features for stroke. Some of the descriptions given resembled the symptoms of diabetes. These descriptions however, are not in line with the biomedical description for stroke.

4.3.2 Description of the physical observable features and complains hypertension, atrial defibrillation, myocardial infarction, heart failure, congenital heart diseases, heart valve disease and blood vessel disease patients raise.

The following are part of the descriptions mentioned: '*Moyo kupiga haraka,* to mean fast heart rate, *kuumwa na kichwa sana,* to mean severe headache, *kukojoa mara kwa mara',* to mean frequent urination, '*presha,* possibly derived from the English word blood pressure commonly used to refer to hypertension, *mishipa kupinda,* (difficult to translate) *kupumua kwa shida,* meaning labored breathing, *kuhema sana* to mean fast breathing. '*Kukohoa sana* translated as excessive coughing;'*kuongea peke yake,* talking to self *kulia,* translated as crying *kukosa kuongea,* meaning inability to speak, *kutetemeka mwili,* to mean body tremors; '*viungo kuuma'* translated as having different parts of the body parts aching; '*mwili kufa ganzi',* translated as numbness; '*Kupooza'* translated as paralysis*; 'Miguu na uso kufura,* to mean swollen or edematous legs and face.

Other descriptions include pain in the legs, blurred vision, and itchy ears when the patient is shocked. Some of the descriptions were similar among the respondents while others were totally different from the rest. For instance, there is one of the respondents who said yellow vomitus is a sign of hypertension. Therefore, some of the description were close to biomedical classifications while others were not in line with the biomedical classifications. Also, the respondents did not have specific descriptions for each and every disease mentioned but rather, they used same descriptions for all the CVDs.

4.4.0 Diets Used in the Prevention and Management of CVDs

4.4.1 Are there special diets in this community used in the management of the diseases that affect the heart, blood vessels and the flow of blood?

Special diets used in the community to manage CVDs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	1.6	1.6	1.6
	Yes	32	50.8	50.8	52.4
	No	30	47.6	47.6	100.0
	Total	63	100.0	100.0	

32 out of the 63 respondents (50.8%) agreed that there were special diets that the community uses in the prevention and management of CVDs. Among the foods mentioned include the following: Low salt and fat diet, boiled green vegetables, *Uji wa wimbi*-porridge made from millet/ or sorghum *sima ya mtama bila mafuta na sukari* -ugali made from millet without sugar and fats *majani ya mzungi-* Moringa oleifera leaves consumed as vegetables, *Tsafe*, milk tea, arrow roots, bitter herbs such as,*Muchunga* (dandelion species), black nightshade, *Mwangani, tindi, pure*, matango (pumpkin leaves) *tunguja*, *mawa,* cabbage, whole maize meal and milk, and *futsu, mfijo- mkunde,* whole maize meal, garlic, *mzumaa* boiled cassava, *mwangane*, *chidungadunga,* young banana fruit, Neemtree leaves*,* the leaves and the backs of guava tree*, mviru* leaves*, tendegwa, changani, kisenywa, toja,* and *pwakapwaka* among others.

4.4.2 Knowledge how each special/ traditional diets are prepared.
Out of 63 respondents 16 of them knew the ingredients and only 15 knew how each diet was prepared. The tables below father illustrate this.

Knowledge of the ingredients for each of the special diets in the community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	31	49.2	49.2	49.2

	Yes	16	25.4	25.4	74.6
	No	16	25.4	25.4	100.0
	Total	63	100.0	100.0	

Knowledge of how each diet is prepared

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	47	74.6	74.6	74.6
	Yes	15	23.8	23.8	98.4
	No	1	1.6	1.6	100.0
	Total	63	100.0	100.0	

4.4.3 Ingredients and preparation methods for the above traditional diets

Most of the traditional vegetables mentioned are boiled in water and then consumed. Sometimes they also consumed the broth from these vegetables. Sometimes salt is added to the vegetables although the quantity was not specified. The roots from some of the plants were also utilized and just like the leaves they were boiled in water and the liquid consumed an example is *Purure* plant.

Moringa plant had several methods of preparation as follows: the leaves were consumed as vegetables or as broth and were prepared just as the vegetables mentioned above, also the leaves were dried whereby the freshly harvested leaves are first withered in a shade and thereafter sundried before they are ground into powder by use of motor and pestle, sifted in a sieve then stored in a container ready for use. This product is added in porridge every morning.

Mviru leaves are boiled in water and the liquid consumed or one can bath with it. The neemtree backs are harvested, washed and chopped into small pieces boiled, cooled and then stored in a bottle.

Cassava meal was prepared through boiling in water. Young bananas fruits were harvested, dried and ground into powder.

The preparation methods and the dosage of consumption for *Tsafe*, arrow roots, black nightshade, *Mwangani, Tindi, Pure*, pumpkin leaves, *Tunguja, Mawa,* cabbage, whole maize meal, milk, *Futsu, Mfijo,* cowpeas, whole maize meal, garlic, *Mzumaa* , *Mwangane, Chidungadunga, Tendegwa, Changani, Kisenywa, Toja,* and *Pwakapwaka* were not given.

Dosage for the special/ traditional diets

Pururee liquid was taken thrice a day with no quantity and time duration specified. The dosages for Moringa products, Dandelion, neemtree products, guava leaves among others were not given.

4.5.0 Home remedies used in the management of cardiovascular diseases

Are there other home remedies apart from the specialized diets?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	1.6	1.6	1.6
	Yes	37	58.7	58.7	60.3
	No	25	39.7	39.7	100.0
	Total	63	100.0	100.0	

Other Homeremedies apart from the specialzed diets
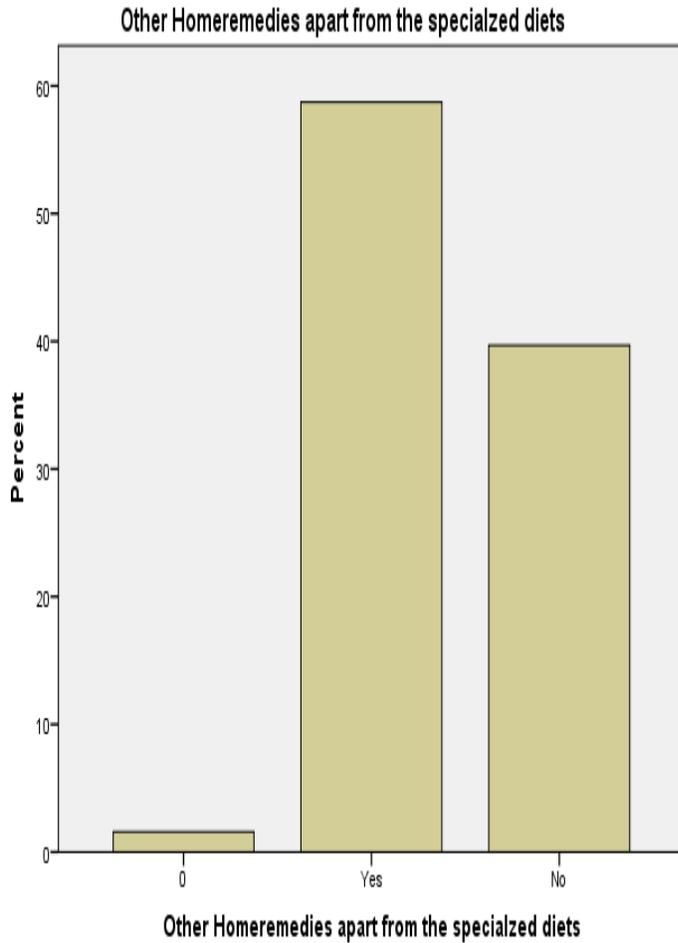
37 out of 63 respondents agreed that there are home remedies for the management of CVDs which is an increment of five people from the number of those who had knowledge of the existence of special diets. This means that home remedies might be popular than the special diets in these two predominant communities.

A cross tabulation between the type of respondents and the knowledge of special home remedies reveled that all the key informants were aware about the home remedies and only 17 of the CVDs patients acknowledged the existence of home remedies. The table below further illustrates this.

A cross tabulation between the type of respondent and knowledge of the existence of other home remedies apart from special diet

 Type of Respondent * Other Home remedies apart from the specialized diets Cross tabulation

Count

		Other Home remedies apart from the specialized diets			
		0	Yes	No	Total
Type of Respondent	CVD Patient	1	17	25	43
	Key Informant	0	20	0	20
Total		1	37	25	63

4.5.1 The home remedies

Out of the 37 respondents who confirmed that they knew the existence of home remedies only 21 knew something about the ingredients and how the remedies are prepared. The table and the graph below further illustrates this.

Statistics

Knowledge of the ingredients for other remedies

N	Valid	63
	Missing	0

Knowledge of the ingredients for other remedies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	26	41.3	41.3	41.3
	Yes	19	30.2	30.2	71.4
	Yes but for some	2	3.2	3.2	74.6
	No	16	25.4	25.4	100.0
	Total	63	100.0	100.0	

Knowledge of the ingredients for other remedies
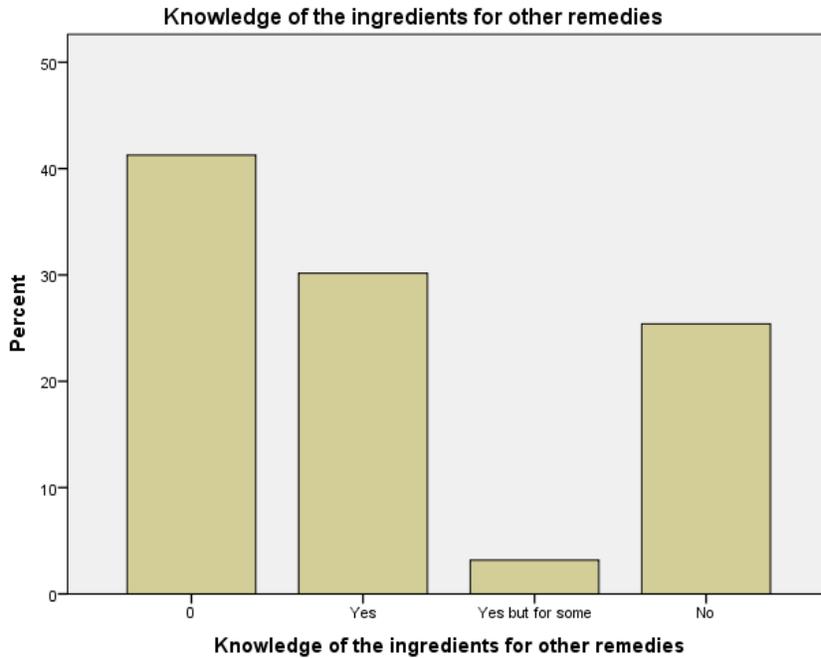
The following were the remedies mentioned: Leaves from neemtree scientific name Moringa *oleifera, 'Mbokwe'* roots, blue gam tree- (Eucaliptus *globulus), Chibate*, *Kuku wa kidimu, Mfijo, Mviru* leaves, *Mvunje, Mzabibu, Kivumani, Muhumba, Mng'andu, Mburuga, Mwaringa, Kibombo, mkoma manga, fenesi, Mwaula tsaka, mdimu plant, mbunduki, Mkone, pururee, mvunja kondo, mtsereza moyo, kitadzi, reza na hoza, kikopaa,* Hibiscus roots

Cloves (Syzygium *aromaticum), abadi soda* and nutmeg (Myristica *fragrans). Mbibo* leaves guava leaves-Psidium *guajava, msaji, Kisikolo, Mgunga, Mvunja kondo, mjongole, mwaga, kikwata, mware, muyu, kavuma nyuchi, girimata,mkumbukua, Ndaniengeree, mchumbururu, muologa, kuku* and *mjafari*.

4.5.2 Preparation Methods of Home Remedies and the Dosage

Moringa leaves are dried and ground into powder and then added to porridge in the ratio one spoon is to one cup. However the size of the spoon was not indicted. Also seeds from Moringa are chewed but the dosage was not given.

Mviru is boiled in water and the liquid consumed. The duration of boiling, the dosage and the time duration was not indicated. Also it is not clear which part of the tree was boiled.

Kivumbani is boiled in water and then the liquid consumed at any time. The duration of boiling, the dosage and the part of the tree used was not indicated.

Mzabibu, mvunje, it cures the diseases of the heart and also CVD patients can birth using the liquid extracted from *Mzabibu* and *Mvunje*. How the liquid is prepared and which part of the trees are used was not indicated.

Muhumba, Mng'andu and *Mburuga* roots cures heart diseases. The preparation methods were not indicated.

Mburuga, Mwaringa, Kibombo, mkoma manga (seeds, the fruits and the back), *fenesi, Mwaula tsaka* (upasua mwitu) are dried ground into powder while the roots are boiled and the remedy taken for seven days. The frequency of daily intake was not given.

Leaves and roots from *mdimu* plant re boiled in water for unspecified time duration and then the liquid obtained consumed half a cup for unspecified number of days. The frequency of consumption per day was not indicated either.

Mbunduki, *Mkone, pururee, mvunja kondo, mtsereza moyo, kitadzi, reza na hoza, kikopaa*, *mdungu na mkongoni* help in cleansing of blood. The preparation method and the dosage were not given.

Hibiscus roots are boiled and the liquid consumed. The duration of boiling and the dosage was not given.

Cloves (Syzygium *aromaticum)nn*, *abadi soda* and nutmeg(Myristica *fragrans* are known to be used as spices but in this study they did not indicate how they use them as remedies.

The back and leaves of neemtree are boiled and the liquid consumed half a cup thrice a day. The size of the cup was not indicated.

For *Ndaniengeree*, it is the roots which are boiled and then the liquid consumed. Details about the preparation method and the dosage were not given.

For *Mbunduk*i, leaves *Mkone, Pururee, Mvunja kondo, Mtsereza moyo, Kitadzi, Reza na Hoza* and *Muchunga wa uchungu*, the leaves are pounded in water only and the remedy consumed for three days while the roots are boiled in water and the solution is also consumed for three days. In this home remedy, the quantity and frequency of consumption per day was not given. This home remedy cures heart and blood vessel diseases the respondent however did not specify the duration it takes for the diseases to be cured.

Kipoza muhingo mgugune mtundukula treats tachycardia (abnormally fast heart rate) however the preparation method and the dosages were not given.

Mtondo roots are boiled in water for unspecified time duration and the liquid consumed. The dosage was not specified.

Galonje, muhumba, muolaga kuku, mugunga, habbatsaudaa oily concoction taken in as a drug. *Kisikolo* the plant is pound in water. For guava leaves they are boiled and the water consumed. *Mifijo* roots are crashed.

Mgunga, Mwanika ,Kirifu and *Mtega Kelele* roots are ground into powder before consumption. The mode and dosage of consumption was not given*.*

For *Mng'andu*, the backs are harvested and then placed in the morning and evening sun for it to dry. During the other parts of the day when the sun is very hot the backs are dried from a shade but the reason for this wan not given. Once dry, they are ground and consumed with a bananas or plain porridge with nothing added to it. The dosage was not indicted as well.

Some of the remedies are mixed with water then the patients given to bath with. *Chibate, muhumba, muolaga kuku* roots whose backs are sun dried and then added to tea in unclear dosages for unspecified number of times.

4.6.0 MANAGEMENT CHOICE

The table below shows respondents preferences in terms of management options for CVDs
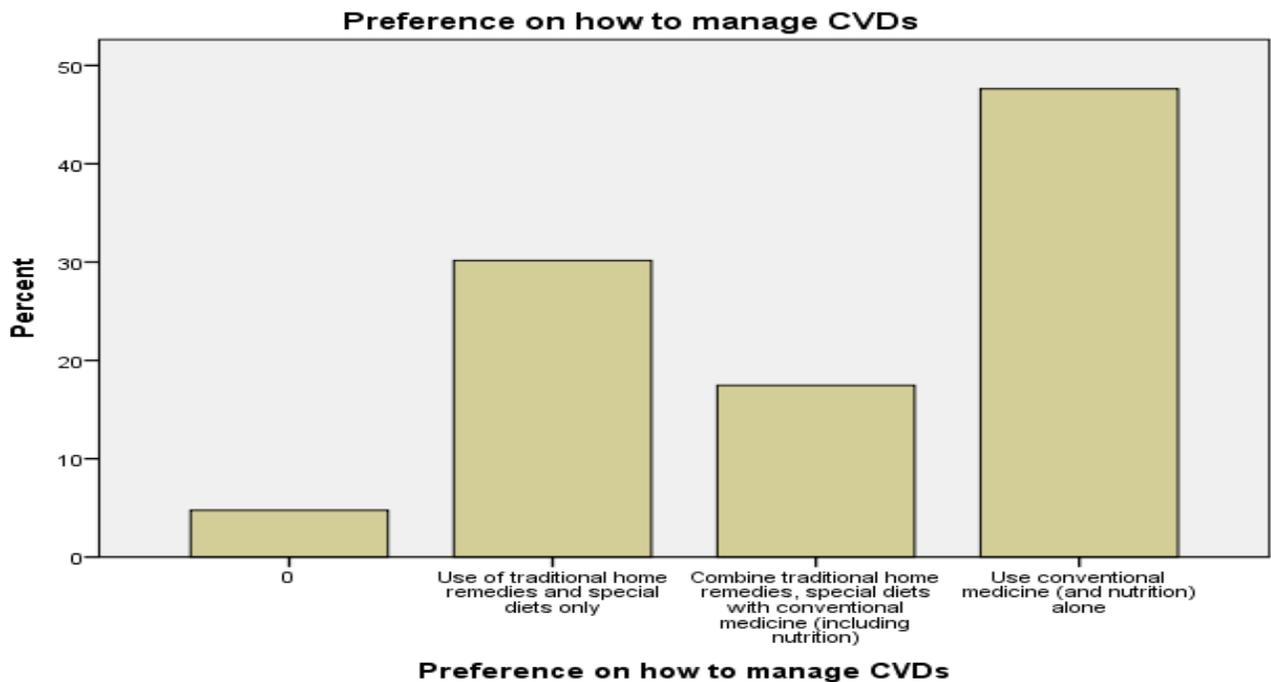
About 49% of the respondents preferred using the conventional medicine and nutrition alone while 30% preferred traditional and home remedies alone. About 21% preferred combining special traditional diets and home remedies together with conventional medicine and nutrition. Since the respondents constituted key informants and the CVDs, grouping the above preferences with respect to the two types

of respondent will paint a more meaning full picture of the management preferences. The table below is a cross tabulation between type of respondent and the management preference.

Type of Respondent * Preference on how to manage CVDs Cross tabulation

Count

			Preference on how to manage CVDs			
		0	Use of traditional home remedies and special diets only	Combine traditional home remedies, special diets with conventional medicine (including nutrition)	Use conventional medicine (and nutrition) alone	Total
Type of Respondent	CVD Patient	1	4	8	30	43
	Key Informant	2	15	3	0	20
Total		3	19	11	30	63

Majority of the CVD patients (30 out of 43) preferred conventional medicine and nutrition alone whereas majority of the key informants (15 out of 20) preferred special traditional diets and home remedies alone.

Bar Chart

Preference on how to manage CVDs
- 0
- Use of traditional home remedies and special diets only
- Combine traditional home remedies, special diets with conventional medicine (including nutrition)
- Use conventional medicine (and nutrition) alone
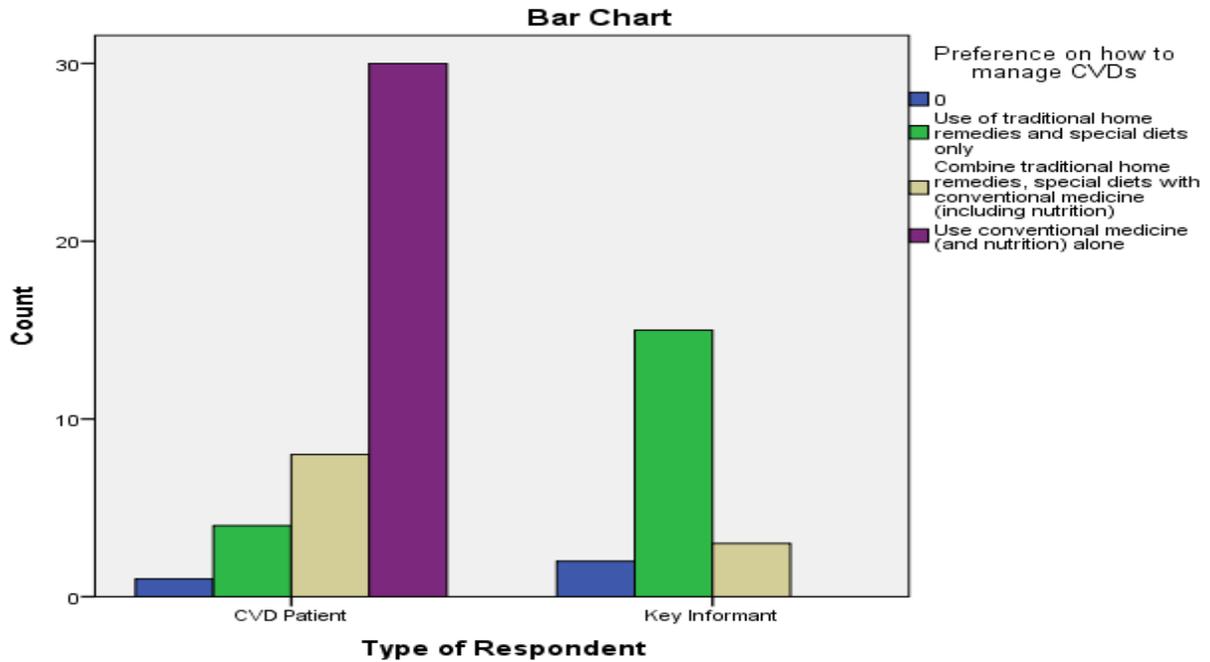
4.6.1 Reasons for preferring traditional home remedies and special diets to conventional medicines

The hospital medications were not effective and also makes one to urinate a lot. This was particularly for the antihypertensive drugs. The traditional remedies and the diets are free from chemicals. Traditional diets and remedies were introduced them since when they were young. Traditional remedies are effective. The remedies guaranteed healing within one month of use. Traditional home remedies and special diets have no side effects and they can be easily got. The knowledge of traditional home remedies and special diets runs in their clans. Hospital medication has side effects like an ugly after taste whereas the traditional home remedies do not require to follow any particular dosage and they bring quick relief.

4.6.2 Reasons for combining traditional home remedies, special diets and conventional medication

Desire for a quick recovery, when the conventional medication failed to alleviate the symptoms. When the traditional home remedies and special diets fail to work, both the traditional home remedies, special diets and conventional medication work well.

4.6.3 Reasons for using conventional medication alone

Lack of knowledge whether it is the traditional home remedies or conventional medication that works. Conventional medication reduces anxiety. Clearly labeled dosages, the medication and the nutrition interventions works, and inability to access traditional home remedies. Some felt that there is no need to mix the medications after getting started on conventional medication. Traditional home remedies are not safe because no research has been made with regards to dosages. Conventional medical providers do assessments before giving the medication. The medications are well researched.

4.6.4 Conventional Medicine Care-givers Consent When Combining Traditional Special Diets and Home remedies with Conventional Medication and Nutrition

Six out of the 41 respondents informed their doctors when combining conventional medications and the traditional home remedies, 35 out of the 41 did not inform their doctors, while 22 out of 63 did not answer this question probably because they were only using the conventional medication or maybe they were key informants who only relied on their traditional diets and home remedies.

Statistics

If informed doctor nutritionist when combining medication

N	Valid	63
	Missing	0

If informed doctor nutritionist when combining medication

	Frequency	Percent	Valid Percent	Cumulative Percent

		Frequency			
Valid	0	22	34.9	34.9	34.9
	Yes	6	9.5	9.5	44.4
	No	35	55.6	55.6	100.0
	Total	63	100.0	100.0	

4.6.5 The point at Which the Conventional Medical Provider was Informed by those who Concomitantly Used the Traditional Diets and Home Remedies and Conventional Medication and Nutrition.

Six respondents out of 11 informed their doctors after combining the medications for a while whereas five out of 11 did not say anything about this question.

4.6.6 Reasons for informing the Doctor or Nutritionist

The doctor/ nutritionist asked if they used any other thing apart from the conventional medication, when symptoms did not improve, financial constraints particularly inability to afford conventional medications, Some wanted to know if it is safe to concomitantly use traditional home remedies and conventional medication, to let the doctor/ nutritionist know that they no longer use conventional medicine alone.

4.7.0 Indicators for Judging the Efficacy of Traditional Home Remedies and Diets When Used Without Conventional Medication.

18 out of 63 said that there were indictors for judging the efficacy of the traditional home remedies and diets when used without conventional medication. The table below gives a summary of the responses from the respondents.

Key indicators for judging the efficacy of home remedies and special diets

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	3.2	3.2	3.2
	Yes	18	28.6	28.6	31.7
	No	22	34.9	34.9	66.7
	Don't know	21	33.3	33.3	100.0

Total	63	100.0	100.0	

4.7.1 The key indicators

When they were asked to give the indicators the following responses were given: one big spoon, 200 grams cup thrice a day, the legs do not swell (edema), two spoons of the traditional drug diluted in one and a half liters of water, boil and drink half tea cup four times per day among other responses. These responses either shows that they did not understand the question very well or the indicators they use can't objectively measure the efficacy of the medications.

4.7.2 Rating the Efficacy of Traditional Home Remedies and Special Diets.

30.2% of the respondents said the traditional home remedies and diets were excellent, 11.1% rated them poor and 9.5% said they were very poor. The bar chart below summarizes the findings.
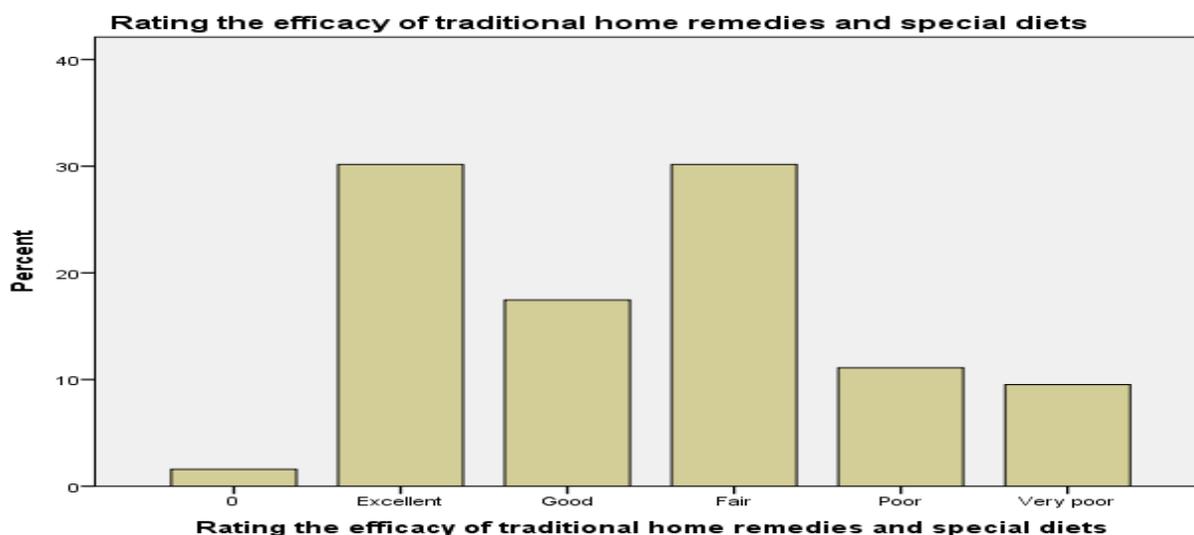
4.7.3 Adverse Effects Associated With the Concomitant Use of Conventional Medications and Traditional Home Remedies and Diets

Only four out of 63 said that there were adverse effects when traditional home remedies were combined with conventional medication. One of the adverse effect mentioned is that, when the medications are combined, they counteract the effect of each other and thus the symptoms failing to improve despite medication. An example mentioned was hypertension.

4.8 Findings from the FGDS

21 focus group discussions were conducted across Kinango, Matuga and Msambweni sub-counties. Only 12 transcriptions are included in this report while the remaining nine were lost by the transcriber at the very last minute to submission and therefore, due to time constraints re-transcription was not possible. Nevertheless, the analysis of the 12 transcriptions revealed data saturation as at some point we noticed that the different FGDs were almost reporting the same thing.

4.8.1 Diseases associated with aging and their classification

The following conditions were profoundly mentioned as aging related diseases: Hypertension, heart diseases, liver diseases, urinary track obstruction which mostly happens among male adults, diabetes, memory loss lower-back pain, hearing difficulties, sight loss, walking difficulties, chaste

pain and ulcers. The following nonspecific disease symptoms were mentioned: poor vision, general weakness, chest pain, palpitation, anxiety and headache. There was no particular way of classifying the diseases in the community.

4.8.2 Signs and symptoms of various aging related diseases

For hypertension, the following were mentioned: dizziness, fever, headache, falling down (collapsing), inability to talk, and difficulty in breathing, abnormal heart beats, fatigue and dizziness. For heart problems the following were mentioned: pain around the heart and increased heart rate. For urinary tract obstruction difficulties (pain) when passing urine and sometimes blood in urine were mentioned. Pain around the stomach and heart burn after eating were indicated as ulcers symptoms.

4.8.3 Treatment Preference

The community members had a mixed preference. There are those who preferred using traditional diets and home remedies alone and there are those who preferred using conventional medicines and nutrition alone.

4.8.4 Preparation methods and dosages for the traditional remedies

Moringa leaves are sundried, ground into powder and then added (two teaspoonful) in boiled water which is then consumed. This remedy is used to manage hypertension. The duration of time for consuming this remedy was not stated. Guava tree leaves, leaves of *m'viru*, and the avocado tree are also used to treat hypertension. They are boiled in water until the broth turns green and the cooled down before consumption. The liquid is drunk with no limitation of quantity. Still under hypertension the leaves of *mtunda tree*, avocado tree and guava tree treats hypertension. Young banana dried and ground into powder which then put in porridge for the treatment of hypertension. A tea spoon is the unit of measurement.

Daily consumption of Dandelion species (*Mchunga*) can help lower high blood pressure. Dandelion species leaves are consumed as vegetables and they should be consumed with their soup.

The backs or roots of *murogirenyi* and *munosungwai* (maasai names) are boiled in water and they help in treating diabetes and hypertension.

For Neem tree the leaves are boiled and then the liquid consumed (a glass). It helps to treat stomach pains, coughing, fatigue and more other diseases.

A mixture of honey and fresh milk is used for the treatment of ulcers. One small glass is used as a unit of measurement for the milk-honey mixture. Aloe Vera is used for the treatment of asthma. The Aloe Vera leaves are boiled in water and then the liquid consumed.

The roots of *kikuro, mdhungu, mdzala, mjongoo*, neemtree, and *msinduzi* trees are boiled together, then a person drinks. It heals back pains, abdominal pains and urinary obstruction. Also, a combination of *chikuro muvumbani* and *mdzala* roots are used to treat urinary obstruction and abdominal problems.

Porojo is used for malaria however the dosage and the mode of preparations was not indicated.

Aloe Vera tree is used for the treatment of *'mshipa'* (chronic muscle pain mostly abdominal). The patient consumes the liquid (sap) from the plant. The patients also bath with the liquid from aloe Vera.

Aloe Vera, *Msaro* and *Munga* roots and the leaves are used to treat headache, body pains and coughing**.** They are boiled and the liquid consumed. Also, the Aloe Vera sap can be rubbed directly in to the head without boiling it and it relieves headache.

Sasangundu and *mvunga* are boiled and the water consumed for the treatment of nausea and vomiting.

Few drops of honey in the eyes can help treat short-sightedness.

The leaves of *msanduku* (eucalyptus) *tree* and *mstafelli tree,* are used in the treatment of diabetes.

For wound management, snails are burnt into powder also a powder found on the backs of coconut leaves are used.

4.8.4 Doctor's consent when using traditional home remedies together with conventional medication

An important observation we made is that some community members use conventional health facilities to get diagnosed of the diseases they are ailing from and thereafter they embark to traditional diets and home remedies by choice or when the conventional medication fail to work. They only revisit the hospitals for checkup. For instance, one of the FGDs participants said the following, "I myself I have diabetes, and when I use the conventional medicine, I get problems, so I went and told them that this drug brings problem in me." "They asked me and I told them I usually use neemtree." "And In other circumstances, their advice of food, it helps a lot but the drugs, I don't think if they help in some disease such as diabetes." "I usually go to the hospital for check-up but the conventional drugs, I take them but I don't use them I use our traditional medicine."

Another important observation we made is that some of the community members fear to disclose to conventional medicine providers such as doctors about the use of traditional home remedies because the doctors become harsh and skeptical when they are informed about the use of traditional home remedies. For instance, one of the participants of the FGDs said the following, "There is no need to ask advice because the doctors say you shouldn't use the traditional medicine." Another one said, "We don't tell the doctors because, the doctors discourage the taking of traditional drugs, and some of the doctor are harsh on us if you tell them you are using the traditional drugs." Also another one said, "It's important to tell the doctors, that we are taking traditional drugs at home but we fear the doctor's reaction when we tell them."

Another observation is that some of the community members begin with traditional diets and home remedies until their symptoms persist then visit the hospital for diagnosis. Once the problem is identified they resort back to traditional diets and home remedies.

4.8.5 Efficacy of the traditional home remedies

Some of the participants of the FGDs argued that the traditional home remedies do not cure the diseases but they just relieve the symptoms as the client prepares to go to the hospital.

However, they argued that traditional medications particularly those for urinary tract obstruction and abdominal pain work for them.

4.8.6 Reasons for preferring traditional home remedies to conventional medication

The health facilities located far from their home steads. The traditional home remedies are less expenses compared to conventional medicines. When conventional medications fail to alleviate their symptoms.

FGDs participants also felt that combining traditional home remedies and conventional medication can be dangerous.

5.0 Discussions

This study is purely qualitative in nature and we had intended to find out what traditional diets and home remedies the Digo and the Duruma use in the management of CVDs. We intended to collect the data using questionnaire guided interviews, focus group discussions and the use of cameras to collect as much data as we could. However, we were not able to use the camera because during the data collection it was not practical time wise to wait and see them prepare the diets and therefore, we relied on the interviews and the focus group discussion in this report.

During this study the following limitations could have influence the findings in some way: Some key informants might have withheld some important information on the diets and home remedies may be in fear of losing their livelihoods. Also the key informants and the CVDs patients might have given some responses about the traditional diets and home remedies which they deem to be social acceptable and not what they actually do or prescribe. There were also some key informants who were not willing to give some information on the diets on the basis of their faith restrictions.

We also had to pick two village in Matuga sub-county based on convenience after they became inaccessible due to extreme weather conditions during the time of data collection and also administrative issues with the local government.

In one place the key informant was not found and it was not possible to replace and therefore we filled in the space with a CVD patient. Although we were interested with the CVDs patients what we got through snowballing were mainly hypertensive patients and therefore this may have influence the finds in some way.

The community members almost had similar descriptions for all CVDs conditions and to a great extent the descriptions were not in lie with biomedical descriptions and classifications of CVDs. They did not have an objective way of diagnosing CVDs and from the discussions they just relied on nonspecific symptoms to begin traditional diets and home remedies in the management until

when symptoms persisted or worsen the point which they visit the hospitals for diagnosis. Some will even go to the hospital to be diagnosed before starting any traditional medication thereafter they embark to traditional diets and home remedies.

The two communities have a rich array of traditional home remedies or traditional medicines and diets which agrees well with some of the literature we reviewed (WHO, 2017; Walden R, Tomlinson B, 2011) When comparing traditional home remedies and traditional diets, the traditional home remedies seemed to be more popular than the traditional diets as shown in the findings (59% were aware of traditional home remedies and only 50.8% knew the existence of traditional diets). Also, from the findings the two communities have more home remedies than the traditional diets. However, most of these remedies were mentioned in the local dialects and was quite hard to translate them to English.

Comparing the conventional medication and conventional nutrition intervention, it seemed nutrition guidance offered at the formal health setting worked better for the community members than the conventional medications. This also is seen in the way they described their traditional diets for CVDs that they are low in fats, salts, and refined sugars and mainly focused on whole foods in their natural form something that agrees with part of the literature we reviewed (NCBI. 2010. Fuster V, Kelly BB Eds ; Hawkes, 2006; WHO, 2007 & 2017).

The key informants seemed to be more knowledgeable about the traditional home remedies and diets and 75% of them strictly advocated for the use of home remedies while about 70% of the CVDs patients advocated for conventional medicine and nutrition alone. Probably most of the key informants preferred traditional home remedies and diets alone because it might be a source of their livelihood. Nevertheless, scanty information about the dosages, preparation methods of these traditional home remedies was obtained. It is not clear whether the respondents deliberately chose to withhold such information or actually they did not have the information.

The question on the indicators used by the community members to judge the efficacy of traditional diets and home remedies brought up unrealistic indicators which were difficult to measure and may be the question was not well understood or the two communities did not have

indicator for judging the efficacy of the traditional medications and diets. And if what they gave is something to go by then we can conclude that their indicators are not realistic.

Concomitant use of traditional home remedies and conventional medication was not welcomed by the community members. Although in the interview there was no serious complication associated with it, in the FGDs fatal complications were associated with the concomitant usage something that agrees with the existing literature (Suroowan S, Mahomoodally F, 2015; Walden R, Tomlinson B, 2011).

6.0 CONCLUSION AND RECOMMENDATIONS

Members of these two communities have traditional diets and home remedies for the management of CVDS. However the dosages are not clear and the active compounds in these remedies are unknown. Despite the existence of home remedies, the study did not find any proper categorization of the home remedies for specific CVDs.

The two community members do not have a definitive way of diagnosing CVDs and sometimes they rely on hospital diagnosis to administer their traditional remedies. They even rely on hospital facilities to check the progress of their diseases while using the home remedies.

Some of the community members who prescribe to traditional remedies receive hospital medication when they go for diagnosis and checkups but they don't use them meaning a wastage of resources on the side of the county government of Kwale.

A communication breakdown between the health providers in the formal setting and the community using these medications. This is because of the perceived hostility on the side of the formal health providers when they learn that their clients are using or are intending to use traditional remedies.

Apart from the CVDs traditional remedies, there are other remedies for other conditions as well.

We therefore, recommend that a quantitative research be done to estimate the number of people who use the traditional home remedies alone, those who combine traditional home remedies and conventional medicine, come up with measurable indicators for assessing the efficacy of the home remedies and possibly try to categorize the home remedies according to the specific diseases they treat plus their correct dosages and preparation methods.. Also, the study should be able to determine health complications associated with the concomitant use of traditional home remedies as either due to countering the effects of conventional medicine, or enhancing the effects of the conventional medications.

We also recommend that the county government of Kwale to come up with strategies on how to build a good rapport between the formal health providers and the community members as this will help make them at ease of disclosing if they use home remedies or not. Again, this will help the county government minimize wastages of drugs among those who do not use them as they

will be bold enough to open up about their intentions of using traditional home remedies in place of conventional medication.

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