

FACTORS ASSOCIATED WITH USE OF HERBAL MEDICINE AMONG PATIENTS IN HERBAL CLINICS IN GUCHA DISTRICT, KENYA

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Abstract

Introduction: Medicinal plants have played a key role in world health in spite of great advances observed in conventional medicine in recent decades, herbal medicine still makes an important contribution to health care. World Health Organization estimated that 80% of the developing countries depend on herbal medicine to meet their healthcare needs. Due to the increased use of herbal medicine, there is an urgent need for the appropriate systems of quality control in the practice as well as in the production and use of the medicines.

Objective: The main objective of this study was to determine the factors associated with utilization of herbal medicine by the Abagusii community among patients in herbal clinics in Gucha districts.

Design: A cross-sectional study was carried out among 167 purposively selected patients. Semi-structured questionnaire was administered to patients.

Data Analysis: Quantitative data was analyzed using Statistical Package for Social Scientist (SPSS) version 20.

Results: Of the 167 patients recruited into the study, 68.9% prefer using herbal medicine. However, 67.7% of the respondents occasionally visit conventional hospital for the same or different health conditions. Among the patients interviewed, they all had positive attitude toward herbal medicine. Respondents' reasons for taking herbal medication were varied and included reasons such as herbs having better efficacy (83%) than conventional medicine, while 27.5% believed that herbal medicines being natural are safe to use. Due to deeply rooted cultural belief that herbal medicine treated certain diseases and maintained good health, (6%) of the respondents preferred to use herbal medicine. The respondents believed in better quality of service offered by the herbalists which was statistically significant in the influence on respondents' choice of medical care. The respondents mainly used herbal medicine for gastro-intestinal disorders (46.2%) and malaria (9.7%). Relatives had a marked influence on 37.7% of the respondents using herbal medicine while, media also played an important role in creating awareness.

Conclusion: An attitude toward using herbal medicines is predictor of the intention to use herbal medicines. The community believes in the importance of herbal medicine for maintaining health thus, positive attitude towards efficacy and safety of herbal medicine. Further research on herbal medicine use in Gucha should be carried out in order to establish the efficacy and safety of the medicines used by the community.

Key words: herbal medicine; efficacy, safety, attitude

1.0 Introduction

Herbal medicine has been in use since time immemorial (Dery, *et al.*, 1999) and has remained a pillar component in health care systems for the treatment of a range of diseases. Although recent advances in molecular biology and physiological chemistry have greatly enhanced the understanding and treatment of diseases, a large segment of the population still depends on herbal medicine as the preferred form of health care (Iwu & Gbodossou, 2000) (Fratkin, 1996) (Kiringe, 2006b). Over the past decade, interest in drugs derived from plants has greatly increased. It is estimated that about 25% of all modern medicines are directly or indirectly derived from plants (Cragg and Newman, 2001; Cragg, *et al.*, 1997).

Approximately 80% of the world's population relies on herbal medicine to fulfill their daily health needs (Marshall, 1998). According to the World Health Organization, because of poverty and lack of access to modern medicine, about 65-80% of the world's population which lives in developing countries depends essentially on plants for primary healthcare (Akerle *et al.*, 1993) and seemingly represents an important pillar of disease management (Winkler *et al.*, 2010) (Rukangira, 2001).

Herbal medicine is a vital part of health care in Kenya. Kenya has a rich plant heritage which has been used by various ethnic communities for treatment of different diseases (Ochora, *et al.*, 2012; Kokwaro, 2009; Gachathi, 2007). Indeed, more than 250 plants are used by various ethnic communities in Kenya as purgatives, laxatives and emetics to treat a range of diseases (Njoroge, *et al.*, 2010a) (Gisesa, 2004). Documentation through

ethnobotanical surveys in Kenya indicates that traditional medicine is widely practiced in the country by the different communities (Jacob, Farah, & Ekaya, 2004) (Kanya *et al.*, 2004; Kanya *et al.*, 2004; Kanya *et al.* 2004; Kareru, *et al.*, 2007; Njoroge & Bussmann, 2007) more so among the Abagusii (Gisesa, 2004). In Kenya, 90% of the population has used herbal medicine at least once for various health conditions (Njoroge *et al.*, 2010a)

The decision to engage with a particular medical channel is influenced by a variety of socio-economic variables such sex, age, cost, the type of illness, access to services and perceived quality of the services (Tipping and Segall, 1995) and also demographic aspects such as level of education and occupation (Good, 1987). In sub-Saharan Africa about 80% of the ever increasing population depends on ethnomedicine for their healthcare since conventional medicine is mostly expensive or unavailable in rural homesteads (Kanya *et al.*, 2004; Ochora *et al.*, 2012), but also herbal medicine is regarded as effective and is the preferred system for many illnesses (Fratkin, 1996; Marshall, 1998).

Knowledge on herbal medicine influences the use of it. A study done among the diabetic patients in India demonstrate that the proportion of patients aware of different herbal medicines was about 71% and about 95% of participants with knowledge of herbal medicine also used it in practice (Kumar, *et al.*, 2006) Studies have also shown that the attitudes of patients have a strong association with the utilization of herbal medicine (Daly, *et al.*, 2009).

The prevalence of diseases in developing countries is quite high (Heffer and Corlett, 2000). In Kenya's Nyanza province, especially Gucha district, diseases such as malaria, typhoid, measles and cancer are rampant (Heffer and Corlett, 2000). It is estimated that malaria accounts for 33.2% of all deaths reported by health facilities and for 60% of all under-five mortality in Gucha District (Heffer and Corlett, 2000). Despite the government of Kenya (GoK), having identified disease as one of its major obstacles facing development, it faces the dilemma of combating a growing burden of disease. It also has a challenge in regulating quality and improving equity in health care distribution with the context of declining public financing that is forcing rationalization of health service delivery (KNHA, 2005).

Ethnobotanical studies have been carried out among the Abagusii community revealing that medicinal plants are being used to treat/manage diseases in the community (Gisesa, 2004). In view of the above scenario of high morbidity and mortality in this region, this study assessed the role herbal medicine plays in prevention and treatment of diseases in Gucha district. The main objective of this study was to explore patients' practices and attitudes towards using herbal medicine and their sources of information. This study also brings out factors that are associated with utilization of herbal medicines with a view of understanding why people are using the herbal medicine despite intensive government efforts to take health services closer to them.

2.0 Methodology

2.1 Study Area

The study was carried out in Ogembo and Sameta Divisions of Gucha district currently under Kisii County of the former Nyanza Province. The district is mainly rural and dominantly agricultural; covering 1,300 sq km. Kisii County is one of the most densely populated districts in Kenya (Nyamongo, 2011) (Heffer and Corlett, 2000)

2.2 Study Design

This was a cross sectional descriptive study which utilized quantitative research method where a detailed semi-structured questionnaire was administered. The study population consisted of patients who visited herbalist in the two selected Divisions in Gucha district within the period of March 2011 to July 2011. Purposive sampling method was used to select 167 patients visiting the herbalists using Fischer,s formula (Fisher, *et al.*, 1998). Key Informants are used to provide an overall view of the community (Flick, 2008) and in this context, the herbalists who interact with patients were taken to be informed about patients' use of traditional herbs. Twenty two herbalists were selected using snowballing technique (Kurant, *et al.*, 2010) among the ones registered with the Ministry of National Heritage and Culture. A written consent from the patients and the herbalists was sought before the interview.

2.3 Data Collection Method

Data was collected using structured questionnaire which incorporated quantitative data. The questionnaire was pre-tested before administering to the respondents in order to test and improve validity of the results. The questionnaire captured the following issues; patients' socio-demographic characteristics, extent of use of

herbal medicine, perception and practices towards utilization of herbal medicine, factors associated with the use of herbal medicine and health seeking behaviors of the patients visiting herbalists in Gucha District.

2.4 Data Analysis

Descriptive statistics and Fisher's exact tests were used at 95% confidence level to evaluate the data obtained. Level of significance was set at $p < 0.05$. All statistical analyses were performed using SPSS version 20 (Mayadagli *et al.*, 2011). Results were presented in tables, bar graphs and percentages.

2.5 Ethical Considerations

Ethical approval for this study was granted by Ethical Review Committee at KEMRI while scientific approval was obtained from KEMRI Scientific Steering Committee (SSC No. 1900). Prior consent was sought from the respondents before commencement of the study. A written consent was obtained from respondents. For respondents who could not read and write a translated version of the consent form which had been developed was read out to them and they appended their thumb print to consent.

3.0 Results

3.1 Social Demographic Characteristics of the Patients Visiting Herbalist

A total of 167 respondents participated in the study. Majority of the respondents were males (59.9%). Respondents aged between 18 and 30 years old constituted the largest group (46.7%) with those above 60 years forming the smallest respondent group (4.8%) were found to take herbal medicine. Majority of the respondents (56.3%) had completed secondary school while (34.7%) had only primary education. With regards to their occupation (34.7%) were farmers and (38.3%) retail traders as shown in Table 1.

Table 1: Social demographic characteristics of the patients visiting the herbalist

Variables		Division		%
		Ogembo	Sameta	
Age	18-30	43	35	46.7
	31-40	29	10	23.3
	41-50	18	2	12.0
	51-60	19	3	13.2
	>60	8	0	4.8
Sex	Male	75	25	59.9
	Female	42	25	40.1
Marital status	Married	104	21	74.9
	Single	11	28	23.4
	Separated/Divorced	2	1	1.8
Education level	No Education	5	1	3.6
	Primary	48	10	34.7
	Secondary	58	36	56.3
	University	6	3	5.4
Religion	Roman Catholic	45	27	43.1
	Protestant	64	22	51.5
	Muslim	1	0	.6
	Other	7	1	4.8
Occupation	Farming	44	14	34.7
	Salaried	9	4	7.8
	Retail traders	57	7	38.3
	Others*	7	25	19.2

*Occupation others: Student, Casual laborers, self-employed, unemployed

3.2 Preference and Utilization of Herbal Medicine

This study was conducted among patients visiting herbal clinics, therefore, it aimed at accessing their health seeking behavior and whether they prefer herbal medicine or conventional medicine. To determine reasons for the preference, the real reason for being in the clinic is a pointer to the preference of the respondent (Kim and Chan, 2004). There could be reasons or factors that could have compelled the respondent to be at the herbal clinic. The results show that most (68.9%) of the respondents prefer being treated using herbal medicine rather than conventional medicine (Figure 1).

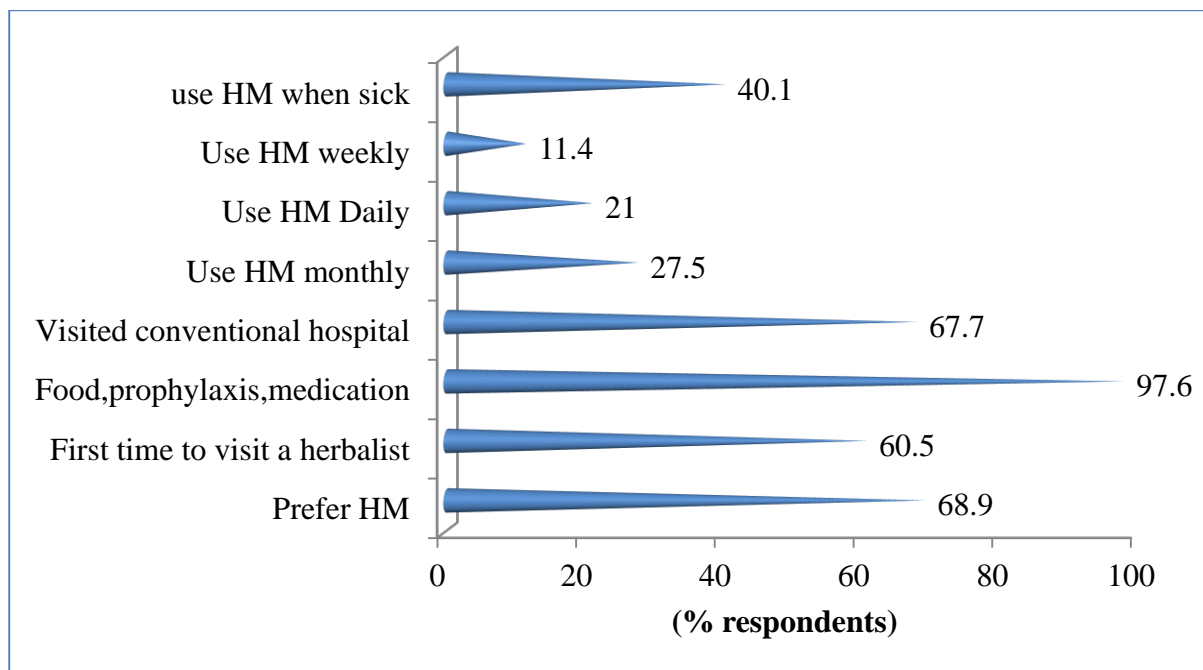


Figure 1: Herbal Medicine (HM) preference and utilization among the respondents in Gucha District

Almost all (97.6%) the respondents in Gucha District indicated that they use medicinal plants as food supplement, prophylaxis or for medication. Nevertheless, while inquiring about the frequency of herbal medicine use the study indicated that most of the respondents (40.1%) only used herbal medicine when they fall sick, while (21%) use on daily basis. Majority of the patients interviewed (60.5%), indicated that it was their first time to visit herbalist or herbal clinic for treatment. Nevertheless, the study showed that (32.3%) of the respondents entirely relied on traditionally based plant medication with (67.7%) mentioned that they periodically visited local clinics and dispensaries as their second or alternative health care source as shown in Figure 1.

It is evident from Figure 2 that some of the respondent utilized both herbal and conventional medicine with (22.8%) had visited the dispensary, (41.3%) District hospital and there are those who entirely rely on herbal treatment (34.7%).

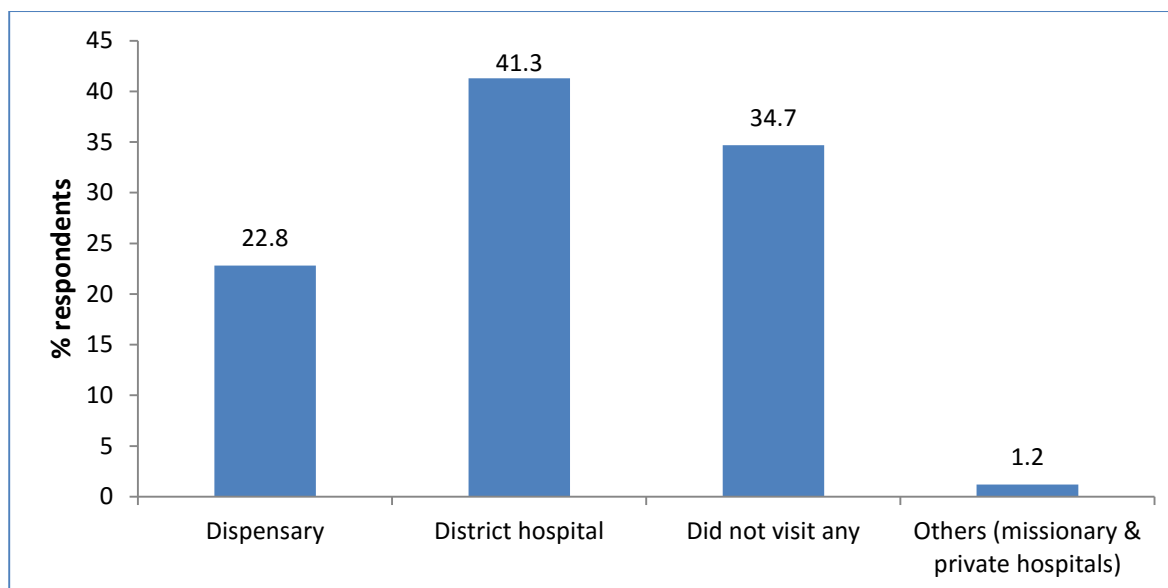


Figure 2 Conventional hospitals visited by the respondents

3.3 Preference of Herbal Medicine in Relation to Patients' Socio-Demographic Characteristics

Relationship between herbal medicine preference and selected socio-demographic characteristics was analyzed as presented in Tables 2. There was no significant ($P > 0.05$) association between herbal medicine preference and socio-demographic factors such as age, marital status, sex, education level and religion.

Table 2: Herbal medicine preference in relation to socio-demographic characteristics

Variables	Herbal medicine preference		Chi-square	P value	
	Yes (%)	No (%)			
Age	18-30	66.70	33.30	5.740	0.332
	31-40	61.50	38.50		
	41-50	65.00	35.00		
	51-60	86.40	13.60		
	>60	87.50	12.50		
Sex	Male	70.00	30.00	0.150	0.698
	Female	67.20	32.80		
Marital status	Married	69.60	30.40	1.8	0.407
	Single	69.20	30.80		
	Separated/Divorced	33.30	66.70		
Education level	No Education	83.30	16.70	3.456	0.326
	Primary	72.40	27.60		
	Secondary	68.10	31.90		
	University/Tertiary	44.40	55.60		
Religion	Roman Catholic	68.10	31.90	2.556	0.465

	Protestant	70.90	29.10		
	Muslim	0.00	100.00		
	Other	62.50	37.50		
Division	Ogembo	68.40	31.60	0.043	0.494
	Sameta	70.00	30.00		

3.4 Factors Associated with the Utilization of Herbal Medicine

Motivation for herbal medicine utilization and beliefs about safety, efficacy and quality of services offered by the herbalist are presented in Table 3.

Table 3: Factors associated with herbal medicine preference

	Variable	Male	Female	(N=167)	%	p-value
Personal experience	Cures faster/Better efficacy	86	54	140	83.8	0.489
	Minimal side effect	29	17	46	27.5	0.018*
	Good Taste	1	4	5	3.0	0.586
	Cheaper/Cost effective	16	10	26	15.6	0.072
Cultural belief	Traditional knowledge	8	2	10	6.0	0.936
	No reason	3	3	3	1.8	-
Quality service	Spend less time	23	16	39	23.4	0.757
	Better Attention	38	22	60	35.9	0.028*
	Herbalist are readily available	37	8	45	26.9	0.024*
	No queues	18	4	22	13.2	0.361
	Availability of medicine	18	18	36	21.6	0.269
	No reason	2	1	3	1.8	-

A high proportion (83.8%) of herbal medicine users preferred herbal medicine for reasons that it had better efficacy than conventional medicines. Nearly a third (27.5%) of the respondents believed that herbal medicines have minimal side effects thus they considered herbal medicine to be safe. There were differences ($p=0.018$) between those who prefer and those who do not prefer in terms of attitude of safety of herbal medicine. The attitude of safety of herbal medicine was consistent among those who prefer herbal medicine agreeing that they are safe which was attributed to their natural origin. While among those who do not prefer herbal medicine reported that some could be toxic or have side effect.

Some (15.6%) of the respondents considered herbal medicine to be less expensive compared to most of the conventional drugs (Table 3). The study also showed that traditional and cultural beliefs in herbal medicines are another reason that respondents cited for using herbal medications. The long period of usage as a proof of efficacy was cited by (6.0%) respondents. There was no statistical significant difference ($p < 0.936$) between those who preferred herbal medicine and those who do not in terms of cultural belief among the study participants.

In regard to the quality of service offered by the herbalists, (26.9%) of the respondents considered herbalists to be readily available while (21.6%) believed that herbal medicine is easily accessible (Table 3). There was statistically significant ($p \leq 0.05$) relationship between the variable 'herbalists are readily available' and the preference of herbal medicine compared to conventional drugs among the study participants.

In addition, (23.4%) of the respondents preferred herbal medicine because they spend less time before being served as the herbalists never have long waiting queues compared to conventional hospital. Others (35.9%)

preferred herbal medicine because they receive better attention from the herbalist as compared to the conventional doctors (Table 3).

3.5 Herbal Medicine Preference in Relation to Distance

Figure 3 shows that distance was one of the reasons given by the respondents in relation to their preference to herbal medicine as compared to conventional medicine.

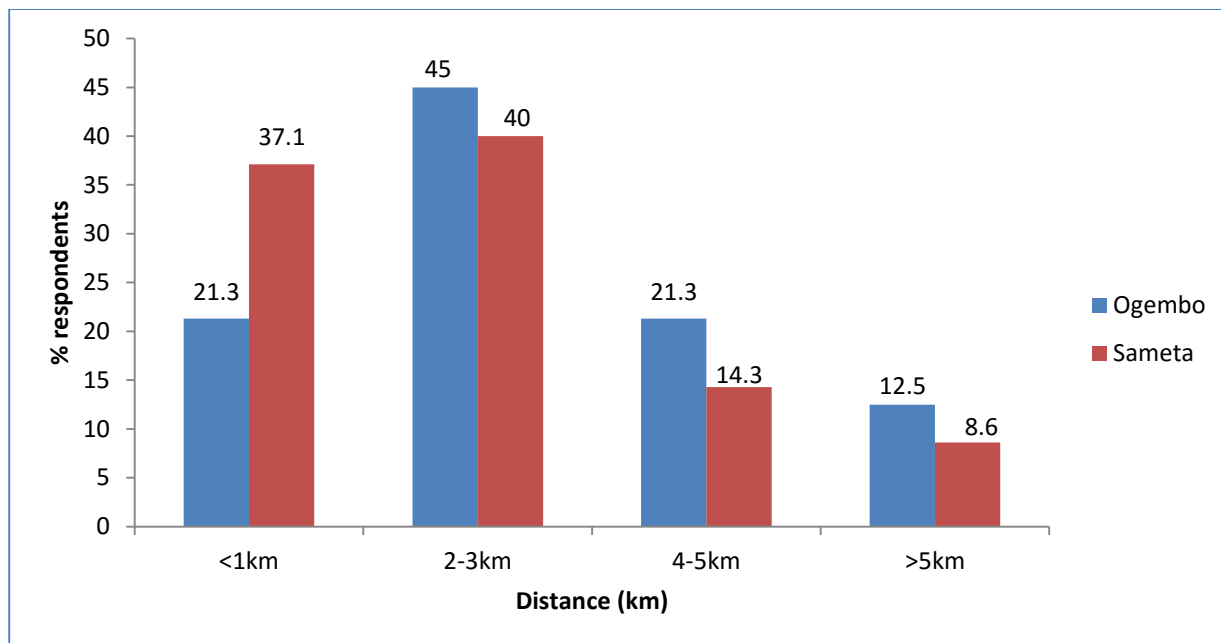
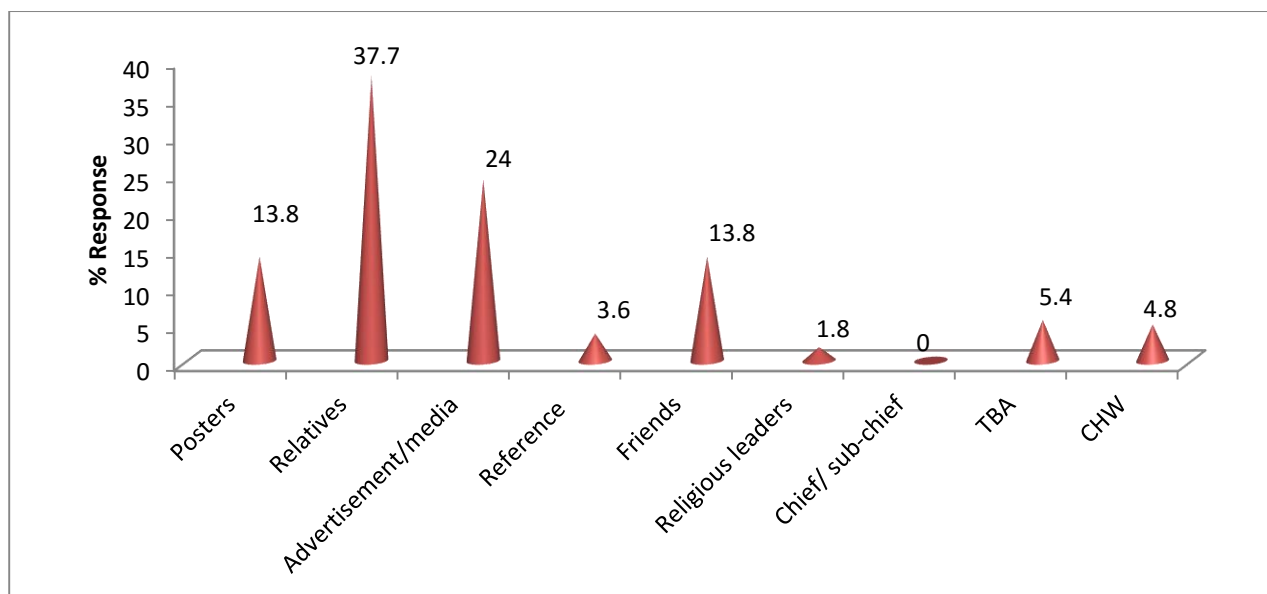


Figure 3: Herbal Medicine Preference in relation to distance

It was observed that majority (68.4%) of the respondents who live in Ogembo division, prefer herbal medicine to conventional medicine of whom, (21.3%) and (45%) live less than one kilometer and within 2 to 3 kilometers from the health facility respectively. From the respondents who live in Sameta division, (70%) prefer herbal medicine compared to conventional medicine, of whom majority (37.1%) and (40.0%) were living less than one kilometer and 2 to 3 kilometers respectively from the health facility.

3.6 Knowledge on Herbal Medicine

All (100%) the respondents were familiar with herbal medicine, herbalist and herbal clinics. While, educational status was not statistically associated with herbal medicine preference ($p=0.326$). Most (37.7%) of the respondents attained information on herbal medicine from parents, spouses and relatives who influenced them to use herbal medicine (Figure 3). The respondents' other source of information about herbal medicine included advertisement/media (24.0%), posters (13.8%), neighbors and friends (13.8%), Traditional Birth Attendant (5.4%), Community health worker (4.6%), reference (3.6%) and religious leaders (1.8%).



TBA-Traditional Birth Attendants; CHW- Community Health Workers

Figure 3: Source of knowledge on herbal medicine use

3.7 Patients' Attitudes towards Herbal Medicine

The respondents believed in the importance of herbal medicine for maintaining health. Some (14.9%) of the respondents believe that herbal medicine is well accepted by the community. While most (30%) of the respondents believed that they yielded perceived relief to their respective diseases. Equally important, (5.9%) of the respondents had the belief that herbal medicine cures ailment faster than the conventional medicine. Others, (15.7%) simply have faith in herbal medicine since they have been using it several times with positive results thus they have proof of the healing power of it. The study also revealed that 2.4% of the respondents appreciate the quality of service offered by the herbalist towards patients claiming that the conventional medical practitioners have a negative attitude toward their patients (Figure 4).

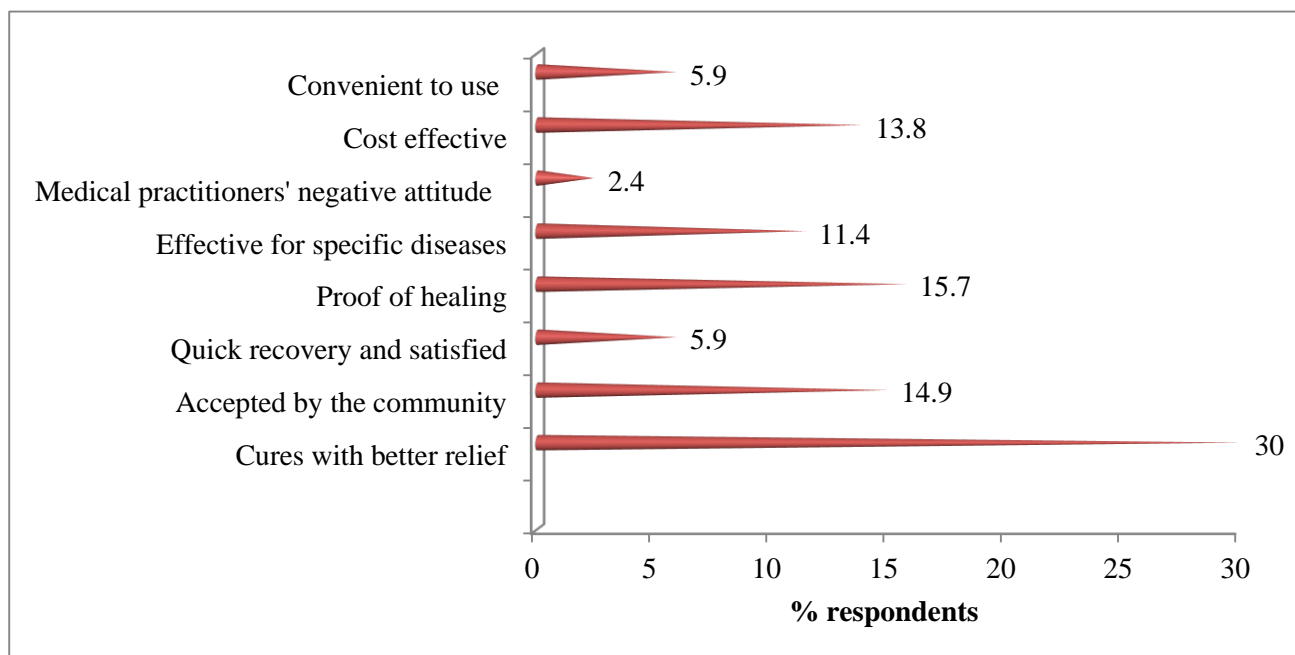


Figure 4: Respondents attitudes towards herbal medicine in comparison to conventional drugs

3.8 Practice of Herbal Medicine Among the Participants

Main reasons for consuming herbal medicine were gastro-intestinal diseases (46.2%), childhood diseases for example measles and mouth infection (14.7%), malaria (9.7%), respiratory tract infections (7%), skeletal muscular system (5.6%) among others as shown in Table 4.

Table 4: Grouping of diseases showing frequency of patients visiting herbalist

Disease Category	Diseases grouped	frequency	%
Cardiovascular and circulatory	Heart problems, High blood pressure	3	2.1
Gastro-intestinal diseases	Amoeba, typhoid, ulcers, vomiting blood, Diarrhea, worms	66	46.2
Respiratory tract infections	Tuberculosis, Pneumonia, Asthma	10	7.0
ENT	Ear	1	0.7
Female genital system	Mis-carriage, barrenness, family planning	3	2.1
Skeletal muscular system	Arthritis, backache	8	5.6
Skin diseases and subcutaneous tissue	Acne, boils, Candidiasis	2	1.4
Infectious diseases	Brucellosis, Sexually Transmitted Diseases	7	4.9
Childhood diseases	Measles, mouth rushes,	21	14.7
Nervous system and mental disorder	Epilepsy	1	0.7
Male genital disorder	Blockage	1	0.7
Specific diseases and conditions	Diabetes	2	1.4
	Burn wounds	1	0.7
	Headache	3	2.1
	Malaria	14	9.7

[The disease categories were adopted from (Ssegawa & Kasenene, 2007)]

4.0 Discussion

4.1 Use of Herbal Medicine

Kenya has a rich plant heritage with the most potent biochemicals which has been used by various ethnic communities in Kenya for treatment of different diseases (Ochora et al., 2012) (Kokwaro, 2009) (Gachathi, 2007).

The use of herbal medicines has been extensively studied in Kenya among general population and among the patients attending the conventional hospitals (Jacob et al., 2004) (Kariuki & Njoroge, 2011) (Njoroge & Bussmann, 2007) (Njoroge, Kaibui, Njenga, & Odhiambo, 2010b) (Rainer W. Bussmann, 2006) (Kareru et al., 2007) (Kareru, Gachanja, Keriko, & Kenji, 2008). The current study assessed the preference of herbal medicine use along with the associated factors among the patients who were visiting the herbalists in Sameta and Ogembo of Gucha District.

The decision to engage with a particular medical channel is influenced by a variety of socio-economic variables, the type of illness, access to services and perceived quality of services (Tipping and Segall, 1995). To determine the actual reason for being in a herbal clinic is a pointer to the preference of herbal medicine use hence, there could be reasons that have compelled the respondents to visit the herbalist. As this study finding indicates, 68.9% of the respondents preferred herbal medicine to meet their primary healthcare needs similar to studies done in Kenya among the Maasai of Southern Kajiado (73%) (Kiringe, 2006a) and urban residents in Lagos, Nigeria (66.7%) (Oreagba et al., 2011)a.. However, the current rate of herbal medicine use was higher than the rate reported in El-Minia, Egypt among the general population where 32.9% respondents preferred using herbal medicine in comparison to conventional medicine (Seedhom, et al., 2011).

There were various reasons for herbal medicine use which are related to access to health services and social cultural environment of the respondent. Herbal medicine among the Abagusii people is deeply rooted and widespread (Sindiga, 1995) thus influencing the health seeking behavior. Similarly, studies have indicated that

herbal medicines are culturally preferred in particular societies thus a motivating factor for its utilization (Oreagba, *et al.*, 2011) (Bussmann, *et al.*, 2007) (Sindiga, 1995) (van Anandel & Carvalheiro, 2013).

4.2 Factors Associated with the Utilization of Herbal Medicine

4.2.1 Beliefs about Herbal Medicine Efficacy

Most (83.8%) respondents in the present study believe herbal medicine had better efficacy than conventional medicines (Table 3). Basically, the use of herbal medicine was the desire for quick and additional relief. Inherently, belief in herbal medicine where certain disease conditions are traditionally known to be only cured by herbal medicine. This result is comparable to a studies done among pregnant women in Nigeria (Fakeye, *et al.*, 2009) and also in Bukina Faso where respondents were of the opinion that herbal medicines could be effective (Pouliot, 2011). These data suggested that seeking herbal or conventional medicine appeared to depend on the type of illness and severity of illness. The perceived efficacy of herbal medicine for some specific illnesses is one of the main motivations for the use of herbal medicine (Cunningham, *et al.*, 2008).

4.2.2 Beliefs about Safety of Herbal Medicine

It was further observed that (27.5%) of the respondents used herbal medicines because they perceive them to be safe with very minimal side effects on the human body as opposed to many drugs used in conventional medicine. Immediate associations with herbal medicines included such words as 'safe', 'natural', 'non-addictive' and 'pure'. It is clear that the phrase itself gives patients a sense of reassurance and safety. Studies done on the utilization of herbal medicine confirms the finding that patients believe that herbal medicines are safe to use as an important factor for its utilization (Galabuzi, *et al.*, 2010) (Fakeye *et al.*, 2009) (Jacobsson, *et al.*, 2009) (Kumar *et al.*, 2006) (Vickers, *et al.*, 2006).

4.2.3 Affordability of Medical Care

Households remain the largest (35.9%) contributors of health funds in Kenya, therefore, treatment costs continue to limit access to care especially by the poor. It is estimated that 16% of the sick do not seek care due to financial barriers, while 38% must dispose their assets or borrow to pay for medical bills (Luoma *et al.*, 2010).

Cost of medication is therefore an important factor to evaluate. This study showed that 15.6% of the respondents preferred herbal medicine to conventional medicine because herbal medicine is cost effective. This could be attributed to the fact that payment for treatment depends on its efficacy whereby the herbalist do not request for payment until after recovery. This is another reason why some of the respondents prefer herbalist to conventional doctors who require payment before the patient has assessed the effectiveness of the treatment.

The payment methods are also friendly since most of the respondents are farmers (34.7%) and retail traders (38.3%) who pay in installments after produce sales. Payments are also not necessarily in cash, it's done in other agreeable terms as giving farm produce and working in the farm since they reside in the same village with the herbalists. Therefore the cost of medication influences respondents to prefer herbal medicine since it is affordable to poor patients who can neither afford the cost of treatment nor the travelling expense to get conventional medical care (Ragunathan, *et al.*, 2010) (Hughes, *et al.*, 2013) (Osamor and Owumi, 2010).

4.2.4 Distance to the Conventional Hospital

Poor roads/infrastructure was another key challenge limiting access to conventional health care which was a concern to most of the respondents. This study observed that only 12.6% live more than 5km radius to the conventional health facility, yet 68.9%, prefer herbal medicine as their source of treatment. This finding indicate that the Gucha residents have better accessibility to the health facilities as compared to a study done by Kenya Service Provision Assessment in rural Kenya where it is estimated at 52 percent based on the 5km radius of a health facility (KSPAS- GOK, 2010). However, this accessibility is limited due to the fact that there is inadequate infrastructure in the management of diseases in the district, where roads are impassable and transportation system is chaotic (Gning *et al.*, 2007) (Chudi, 2010) (Rutebemberwa *et al.*, 2013). This is an indication that treatment accessibility is a major determinant in the treatment-seeking behavior of ill people in the study region.

4.2.5 Knowledge, Attitude and Practices of the Community on Herbal Medicine

Family and friends had a marked influence (51.5%) on the respondents who used herbal medicine preparations. The influence of relatives, friends and neighbors on health-care seeking behavior for herbal medicines has been reported globally in both adults and children (Oshikoya, *et al.*, 2008) (Bennett and Brown, 2000). This finding indicates that herbal medicine in Gucha district is an important topic in the society as people are discussing about it among neighbors, relatives and people at the workplace. While media plays an important role in creating awareness, 24% of the respondents were informed about herbal medicine through media (Bennett and Brown, 2000).

An attitude toward using herbal medicines is predictor of the intention to use herbal medicines. This study explored the patients' view on herbal medicine, revealing that all the respondents believed in the importance of herbal medicine for maintaining health thus, positive attitude towards efficacy basis of herbal medicine. Some (20.4%) of the respondents believed that they yielded perceived relief to their respective diseases while others 15.7% simply have faith in herbal medicine because they have been using it several times with positive results therefore they have proof of its healing power. As proposed by some studies, positive attitude might influence future use of these alternative medicines (Kashani, *et al.*, 2013).

This study shows that (32.3%) of the respondents are more likely to start with self-treatment at home as they wait for a time during which they observe their progress. This allows them to minimize expenditure incurred as a result of the sickness. They are more likely to choose treatments available outside the home during subsequent decisions. Similar health seeking behaviour were made by (Nyamongo, 2002) among malaria patients in Kisii district.

The study also revealed that herbal medicine is commonly used (46.2%) when treating or managing combination of gastro-intestinal diseases, childhood diseases, (14.7%) and malaria (9.7%). This observation is congruent with a study done in Iran among infertile patients where 33.3% used herbal medicine mainly when treating gastrointestinal diseases (Kashani *et al.*, 2013) (Nyamongo, 2002) among malaria patients.

5.0 Conclusion

Herbal medicine still continues to play a significant role in healthcare of many rural families in Gucha district. This study found that the patients visiting herbal clinics in Gucha district prefer herbal medicine but they occasionally visit conventional hospital for the same or different health conditions thus possible interaction between herbal medicine and conventional medicine. An attitude toward using herbal medicines is predictor of the intention to use herbal medicines. The community believes in the importance of herbal medicine for maintaining health thus, positive attitude towards efficacy and safety of herbal medicine. Further research on herbal medicine used in Gucha should be carried out in order to establish the efficacy and safety of the medicines used by the community.

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References

- Akerele, O., Blass, A., Singh, M. M., Chowdhury, S. R., Kulshreshtha, D. K., Kamboj, V. P., Bishaw, M. (1993). Natures medicinal bounty: dont throw it away. In *World Health Forum* (Vol. 14, pp. 390–5).
- Bennett, J., & Brown, C. M. (2000). Use of herbal remedies by patients in a health maintenance organization. *Journal of the American Pharmaceutical Association (Washington, D.C.: 1996)*, 40(3), 353–358.
- Bussmann, R. W. (2006). Ethnobotany of the Samburu of Mt. Nyiru, South Turkana, Kenya. *Journal of Ethnobiology and Ethnomedicine*, 2(1), 35.
- Bussmann, R. W., Sharon, D., & Lopez, A. (2007). Blending traditional and Western medicine: medicinal plant use among patients at Clinica Anticona in El Porvenir, Peru. Retrieved from <http://scholarspace.manoa.hawaii.edu/handle/10125/230>
- Chudi, P. I. (2010). Healthcare problems in developing countries. *Medical Practice and Reviews*, 1(1), 9–11.
- Cragg, G. M., & Newman, D. J. (2001). Natural product drug discovery in the next millennium. *Pharmaceutical Biology*, 39(s1), 8–17.
- Cragg, G. M., Newman, D. J., & Snader, K. M. (1997). Natural products in drug discovery and development. *Journal of Natural Products*, 60(1), 52–60.
- Cunningham, A. B., Shanley, P., & Laird, S. (2008). Health, habitats and medicinal plant use. *Human Health and Forests. A Global Overview of Issues, Practice and Policy. People and Plants International. Conservation Series*, 35–62.
- Daly, M., Tai, C.-J., Deng, C.-Y., & Chien, L.-Y. (2009). Factors associated with utilization of traditional Chinese medicine by white collar foreign workers living in Taiwan. *BMC Health Services Research*, 9, 10.
- Dery, B. B., Ofsynia, R., & Ngatigwa, C. (1999). Indigenous knowledge of medicinal trees and setting priorities for their domestication in Shinyanga region, Tanzania Nairobi. *Kenya: International Center for Research in Agroforestry*.
- Fakeye, T. O., Adisa, R., & Musa, I. E. (2009). Attitude and use of herbal medicines among pregnant women in Nigeria. *BMC Complementary and Alternative Medicine*, 9(1), 53.
- Fisher, A. A., Laing, J. E., Stoeckel, E. J., & Townsend, J. W. (1998). *Handbook for Family Planning Operations Design*. (2nd Edition.). Washington, D.C: Population Council, Oxford University Press.
- Flick, U. (2008). *Designing Qualitative Research*. SAGE.
- Fratkin, E. (1996). Traditional medicine and concepts of healing among Samburu pastoralists of Kenya. *Journal of Ethnobiology*, 16, 63–98.
- Gachathi, F. N. (2007). *Kikuyu botanical dictionary: a guide to plant names, uses and cultural values*. Tropical Botany.
- Galabuzi, C., Agea, J., Fungo, B., & Kamoga, R. (2010). Traditional medicine as an alternative form of health care system: a preliminary case study of Nangabo sub-county, central Uganda. *African Journal of Traditional, Complementary and Alternative Medicines*, 7(1). Retrieved from <http://www.ajol.info/index.php/ajtcam/article/view/57224>
- Gisesa, W. N. O. (2004). *An ethnopharmacological investigation of plants used by Abagusii traditional medical practitioners*. Nairobi: Kenyatta University.
- Gning, S. B., Thiam, M., Fall, F., Ba-Fall, K., Mbaye, P. S., & Fourcade, L. (2007). [Diabetes mellitus in sub-Saharan Africa: epidemiological aspects and management issues]. *Médecine tropicale: revue du Corps de santé colonial*, 67(6), 607–611.
- Good, C. M. (1987). Ethnomedical systems in Africa. Retrieved from <http://agris.fao.org/agris-search/search.do?recordID=US201300655919>
- Heffer, J., & Corlett, S. K. (2000). *Emergency Medical Support, Epidemic Malaria, Kisii and Gucha Districts, Nyanza Province, Kenya* (OFDA Final Report). Medical Emergency relief International.
- Hughes, G. D., Aboyade, O. M., Clark, B. L., & Puoane, T. R. (2013). The prevalence of traditional herbal medicine use among hypertensives living in South African communities. *BMC Complementary and Alternative Medicine*, 13(1), 38.
- Iwu, M. M., & Gbodossou, E. (2000). The role of traditional medicine. *Lancet*, 356 Suppl, s3.
- Jacob, M. O., Farah, K. O., & Ekaya, W. N. (2004). Indigenous knowledge: the basis of the Maasai Ethnoveterinary Diagnostic Skills. *J Hum Ecol*, 16(1), 43–48.
- Jacobsson, I., Jönsson, A. K., Gerdén, B., & Hägg, S. (2009). Spontaneously reported adverse reactions in association with complementary and alternative medicine substances in Sweden. *Pharmacoepidemiology and Drug Safety*, 18(11), 1039–1047.
- Kanya, J. I., Ngi-Song, A. J., Sétamou, M. F., Overholt, W., Ochora, J., & Osir, E. O. (2004). Diversity of alternative hosts of maize stemborers in Trans-Nzoia district of Kenya. *Environmental Biosafety Research*, 3(3), 159–168.

- Kareru, P. G., Gachanja, A. N., Keriko, J. M., & Kenji, G. M. (2008). Antimicrobial activity of some medicinal plants used by herbalists in eastern province, Kenya. *African Journal of Traditional, Complementary and Alternative Medicines*, 5(1), 51–55.
- Kareru, P. G., Kenji, G. M., Gachanja, A. N., Keriko, J. M., & Mungai, G. (2007). Traditional medicines among the Embu and Mbeere people of Kenya. *African Journal of Traditional, Complementary and Alternative Medicines*, 4(1), 75–86.
- Kariuki, A. C., & Njoroge, G. N. (2011). Ethnobotanical and antimicrobial studies of some plants used in Kibwezi (Kenya) for management of lower respiratory tract infections. *African Journal of Traditional, Complementary and Alternative Medicines*, 8(2). Retrieved from <http://www.ajol.info/index.php/ajtcam/article/view/63201>
- Kashani, L., Hassanzadeh, E., Mirzabeighi, A., & Akhondzadeh, S. (2013). Knowledge, attitude and practice of herbal remedies in a group of infertile couples. *Acta Medica Iranica*, 51(3), 189–194.
- Kim, J. and Chan, M. (2004). "Factors Influencing Preferences for Alternative Medicine by Korean Americans," *Am. J. Chin. Med.*, vol. 32, no. 02, pp. 321–329.
- Kiringe, J. W. (2006a). A survey of traditional health remedies used by the maasai of Southern Kaijiado District, Kenya. Retrieved from <http://scholarspace.manoa.hawaii.edu/handle/10125/238>
- Kiringe, J. W. (2006b). A Survey of Traditional Health Remedies Used by the Maasai of Southern Kaijiado District, Kenya. Retrieved from <http://scholarspace.manoa.hawaii.edu/handle/10125/238>
- KNHA. (2005). *Kenya National Health Accounts (NHA) 2002: Estimating Expenditures on General Health and HIV/AIDS Care. Country Policy Brief*. Ministry of Health- Government of Kenya.
- Kokwaro, J. O. (2009). *Medicinal plants of east Africa*. University of Nairobi Press.
- KSPAS- GOK. (2010). *Kenya Service Provision Assessment Survey (SPA) 2010*. Kenya: Ministry of Medical Services and Ministry of Public Health and Sanitation. Government of Kenya. Retrieved from www.dhsprogram.com
- Kumar, D., Bajaj, S., & Mehrotra, R. (2006). Knowledge, attitude and practice of complementary and alternative medicines for diabetes. *Public Health*, 120(8), 705–711. doi:10.1016/j.puhe.2006.04.010
- Kurant, M., Markopoulou, A., & Thiran, P. (2010). On the bias of bfs (breadth first search). In *Teletraffic Congress (ITC), 2010 22nd International* (pp. 1–8). IEEE.
- Luoma, M., Doherty, J., Muchiri, S., Barasa, T., Hofler, K., Maniscalco, L., Maundu, J. (2010). Kenya health system assessment 2010. *Institutions*.
- Marshall, N. T. (1998). *Searching for a Cure: Conservation of Medicinal Wildlife Resources in East and Southern Africa*. Traffic International.
- Mayadagli, A., Aksu, A., Goksel, F., Gocen, E., Karahacioglu, E., Gumus, M., & Pak, Y. (2011). Determination of Parameters Affecting the Use of Complementary and Alternative Medicine in Cancer Patients and Detection of Prevalence of Use. *African Journal of Traditional, Complementary, and Alternative Medicines*, 8(4), 477–482.
- Njoroge, G. N., & Bussmann, R. W. (2007). Ethnotherapeutic management of skin diseases among the Kikuyus of Central Kenya. *Journal of Ethnopharmacology*, 111(2), 303–307.
- Njoroge, G. N., Kaibui, I. M., Njenga, P. K., & Odhiambo, P. O. (2010a). Utilisation of priority traditional medicinal plants and local people's knowledge on their conservation status in arid lands of Kenya (Mwingi District). *Journal of Ethnobiology and Ethnomedicine*, 6(1), 22.
- Njoroge, G. N., Kaibui, I. M., Njenga, P. K., & Odhiambo, P. O. (2010b). Utilisation of priority traditional medicinal plants and local people's knowledge on their conservation status in arid lands of Kenya (Mwingi District). *Journal of Ethnobiology and Ethnomedicine*, 6(1), 22.
- Nyamongo, I. K. (2002). Health care switching behaviour of malaria patients in a Kenyan rural community. *Social Science & Medicine*, 54(3), 377–386.
- Nyamongo, I. K. (2011). Malaria Risk and Ecological Change in Gusii: What Can We Learn from Hospital Data and Community Narratives? Retrieved from http://www.uonbi.ac.ke/openscholar/inyamongo/files/malaria_and_ecological_change_in_gusii_nyamongo.pdf
- Ochora, J. M., Onguso, J. M., & Kany, J. I. (2012). On The Agroforestry System And In Situ Conservation Of Medicinal Plant Germplasm In Trans- Nzoia District, Kenya. *Scientific Conference Proceedings*, 0(0).
- Oreagba, I. A., Oshikoya, K. A., & Amachree, M. (2011). Herbal medicine use among urban residents in Lagos, Nigeria. *BMC Complementary and Alternative Medicine*, 11(1), 117.
- Osamor, P. E., & Owumi, B. E. (2010). Complementary and alternative medicine in the management of hypertension in an urban Nigerian community. *BMC Complementary and Alternative Medicine*, 10, 36.

- Oshikoya, K. A., Senbanjo, I. O., Njokanma, O. F., & Soipe, A. (2008). Use of complementary and alternative medicines for children with chronic health conditions in Lagos, Nigeria. *BMC Complementary and Alternative Medicine*, 8, 66.
- Pouliot, M. (2011). Relying on nature's pharmacy in rural Burkina Faso: Empirical evidence of the determinants of traditional medicine consumption. *Social Science & Medicine*, 73(10), 1498–1507.
- Ragunathan, M., Tadesse, H., & Tujuba, R. (2010). A cross-sectional study on the perceptions and practices of modern and traditional health practitioners about traditional medicine in Dembia district, north western Ethiopia. *Pharmacognosy Magazine*, 6(21), 19–25.
- Rukangira, E. (2001). Medicinal plants and traditional medicine in Africa: constraints and challenges. *Sustainable Development International*, 4, 179–184.
- Rutebemberwa, E., Lubega, M., Katureebe, S. K., Oundo, A., Kiweewa, F., & Mukanga, D. (2013). Use of traditional medicine for the treatment of diabetes in Eastern Uganda: a qualitative exploration of reasons for choice. *BMC International Health and Human Rights*, 13, 1.
- Seedhom, A. E., Kamel, E. G., & Awadalla, H. I. (2011). Attitudes and patterns of use of alternative medicine in a rural area, El-Minia, Egypt. *European Journal of Integrative Medicine*, 3(2), e71–e75.
- Sindiga, I. (1995). *Traditional medicine in Africa*. Nairobi: East African Educational Publishers.
- Ssegawa, P., & Kasenene, J. M. (2007). Medicinal plant diversity and uses in the Sango bay area, Southern Uganda. *Journal of Ethnopharmacology*, 113(3), 521–540.
- Tipping, G., & Segall, M. (1995). Health care seeking behaviour in developing countries. An annotated bibliography and literature review., (12), 89 pp.
- Van Andel, T., & Carvalheiro, L. G. (2013). Why Urban Citizens in Developing Countries Use Traditional Medicines: The Case of Suriname. *Evidence-Based Complementary and Alternative Medicine*, 2013, 1–13.
- Vickers, K. A., Jolly, K. B., & Greenfield, S. M. (2006). Herbal medicine: women's views, knowledge and interaction with doctors: a qualitative study. *BMC Complementary and Alternative Medicine*, 6(1), 40.
- Winkler, A., Mayer, M., Ombay, M., Mathias, B., Schmutzhard, E., & Jilek-Aall, L. (2010). Attitudes towards African traditional medicine and Christian spiritual healing regarding treatment of epilepsy in a rural community of northern Tanzania. *African Journal of Traditional, Complementary and Alternative Medicines*, 7(2).