CONTRIBUTIONS OF INDIGENOUS EDUCATION TO HEALTH PRACTICES: A CASE OF BUKUSU COMMUNITY OF BUNGOMA COUNTY, KENYA

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DECLARATION AND RECOMMENDATION

Declaration

This is my original work and has not been submitted for the award of a degree in any university.

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Recommendation

This research thesis has been submitted with our approval as the University Supervisors.

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DEDICATION

This study is dedicated to all my family members and friends for their support, assistance, inspiration and encouragement over the years, throughout my entire study period at Egerton University.

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ABSTRACT

Health problems as a result of changes in health practices of the people and changes in the environment have been and are an issue of concern. While numerous efforts have been undertaken to curb these health problems, little attention has been given to the role which Indigenous education can play in fostering health practices. This has led to gradual abandonment and even extinction of some of the traditional health practices which have been shown to have promoted health. This study was therefore aimed at establishing how indigenous education promoted and propagated some of the health practices in order to maintain the well being of the society taking the Bukusu Community of Bungoma County of Kenya as a case. The Bukusu occupy majorly Bungoma County in which the study was based. The study was guided by the medical ecology theory and the general systems theory. An ethno-historical approach was employed in the research design, instrumentation, data collection, analysis and interpretation. Validity of the instruments was attained through formulation of the items as per the research objectives while external and internal criticism was used to attain reliability of the study. The historical inquiry progressed in three major phases namely collection of oral evidence through field work, research into secondary materials in libraries and collection of archival data through archival research. Non Participant observation was also carried out throughout the three phases. To achieve systematic collection of data, purposive and snowball sampling techniques were used. The population of the study was about nine hundred thousand Bukusu individuals of Bungoma County. The research sample comprised of forty two elderly persons including both men and women who were interviewed and the data collected was analysed qualitatively through triangulation and deduction of themes. It was found out that indigenous education through its content and methodology promotes observance and propagation of health practices that includes wellness promotion, proper nutrition and traditional herbal medication. These contributions make indigenous education to be still relevant to the contemporary society because they correlate to current health promotion efforts. Results obtained from this study may be useful in informing the contemporary society on the valuable health practices that are at the verge of extinction and this can provide a contribution towards the current health promotion efforts.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS: Acquired Immunodeficiency Syndrome

BMI: Body Mass Index

CAD: Coronary Artery Disease

CVD: Cardio-Vascular Disease

FAO: Food and Agricultural Organization

HIV: Human Immunodeficiency Virus

KEFRI: Kenya Forestry Research Institute

KEMRI: Kenya Medical Research Institute

KNA: Kenya National Archives

KNBS: Kenya National Bureau of Statistics

NCST: National Council for Science and Technology

NMK: National Museums of Kenya

O.I: Oral Interview(s)

TCM: Traditional Chinese Medicine

UNDP: United Nations Development Program

CSOPP: Civil Society Organisation and Participation Programme

UNESCO: United Nations Educational, Scientific and Cultural Organisation

WHO: World Health Organisation

WIPO: World Intellectual Property Organisation

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Health problems as a result of changes in health practices of the people and changes in the environment have been and still are an issue of concern (World Health Organisation, 2012). There have been high cases of lifestyle diseases, disorders in reproductive health, dental health and many other bodily diseases which are some of the major causes of death around the world (Gordon, 1978; WHO, 2002). According to WHO (2002), health refers to physical and mental wellbeing of the individual and not just the absence of diseases. Health practices therefore refers to efforts that are aimed at providing or restoring the wellbeing of the individual hence curbing some of the aforementioned health problems.

As Gordon (1978) observes, lifestyle diseases which were initially common in Western countries and other high-income regions are now prevalent even in developing African countries due to gradual change in health practices and as Sifuna notes, such health practices were a product of the indigenous education (Sifuna, 1990). For instance, although the world's almost 400 million indigenous people have had low standards of health traditionally related to malnutrition, poverty, environmental contamination, and prevalent infections, as these peoples move to more modern or 'western' lifestyles, conditions such as obesity, cardiovascular diseases, and type 2 diabetes have soared, as have physical, social and mental disorders related to misuse of alcohol and other drugs (Gracey, 2009).

These changes in health practices may therefore be linked to change in knowledge, skills and values that people acquire since indigenous knowledge has been variously shown to have promoted and propagated the wellbeing of the members of the society including health (Moumouni, 1968; Osei, 1970). More so, a good number of health problems have been shown to have been managed through traditional herbal medication (United Nations Educational Scientific and Cultural Organisation, 1998).

United Nations Development Programme-Civil Society Organisation and Participation Programme, (2000) notes that because Indigenous Knowledge is handed over from generation to generation in an oral way, it is not easily accessible and has not been stored

in a systematic way. Furthermore, as indigenous peoples become more integrated into Western society and economic systems, traditional knowledge and practices are being lost. This is the reason why the still needed traditional herbal medicinal knowledge is at risk of extinction yet many inhabitants of the world resort to herbal medication. A World Intellectual Property Organisation (WIPO) survey on traditional knowledge in Africa (WIPO, 2001) highlighted that "traditional knowledge" was often discussed as "folklore", of which the pejorative colonial connotations of backwardness and superstition persist (Kongolo, 2001).

Indigenous education which is also variously described as traditional education, pre-colonial education or African education in the African context refers to acquisition and transmission of knowledge, skills and values from one generation to another or within the same generation (Sifuna & Otiende, 1994). Indigenous education was not only concerned with the systematic socialization of the young generation into norms, beliefs and collective opinions of the wider society, but also placed a very strong emphasis on learning practical skills and the acquisition of knowledge which was useful to the individual and society as a whole (Sifuna, 1990).

It is therefore imperative to note that indigenous education was for survival and to help one solve the problems that may arise in the course of life ranging from social to health related challenges. In support of this, former President of Tanzania, Mwalimu Julius Nyerere described indigenous education as an integral part of life (Hino & Camozzi, 1996). This is contrary to the intellectual fallacy of the fatuous assertion that knowledge systems were introduced to Africa through colonialism. The incontrovertible fact is that colonialism introduced Western knowledge systems, as a particular form of knowledge, through imposition and systematic attempt to destroy indigenous knowledge systems (Lebakeng, 2004).

Such African indigenous education and its contribution to health practices was well studied in the traditional Bukusu community of Bungoma County which had been said to have had well elaborate system of indigenous education that was embedded in its culture (De Wolf, 1977; Makokha, 1993). More so, Alembi (2000) and Barasa and Onkware (2010) had observed that Bukusu community still has conspicuous observance of

traditional male initiation, traditional burial ceremonies and marriage related rituals while most of the traditional health practices are no longer observed . The study therefore focused on traditional practices from the past during which the Bukusu still had strong traditional lifestyles and practices most of which were geared towards promoting survival and wellbeing of the individuals (Osogo, 1966; Were, 1967) to the present.

The Bukusu are one of the seventeen sub-tribes of the Luhya, Bantu people of East Africa. Calling themselves *Babukusu*, they are the largest sub-tribe of the Luhya community making up to about 17% of the Luhya population (Kenya National Bureau of Statistics, 2010). They occupy the major part of Bungoma County and smaller parts of Trans-Nzoia County of Western Kenya. The Bukusu had significantly rich traditions and culture some of which have persisted over years amidst Western modernization. Such practices include traditional male initiations, traditional burial practices and ceremonies and traditional marriage rituals (Alembi, 2000; Barasa & Onkware, 2010). The Bukusu indigenous education which is embedded in their culture and practices can aid in shaping of the relevance of our education systems to suit and respond to immediate needs and problems of the society.

The need for relevance in the school curriculum has been echoed in numerous forums of the education authorities. One of these was in the *Dakar Framework for Action for Education for All*, of 2000, which brought together many stakeholders propagating the implementation of the Jomtien Conference on Education for All of 1990. In the African report, it was recognized that African indigenous knowledge systems, languages and values should be the foundation for the development of African education systems. It was further recognised that there is a necessity for curriculum transformation so as to give children, youth and adults the type of quality education that promotes an appreciation of the diversity, richness and dynamism of their cultures, with a goal to liberate them from psychological, economic and technological dependency (UNESCO, 2000).

This relevancy of education can be geared towards improving health and curbing the health related problems which will be useful in achieving some of the millennium development goals related to health and the Kenya's vision 2030 of ensuring proper

health care to all individuals by the year 2030. Since health is partly determined by practices of an individual that one gets due to long-term accumulation of knowledge in which education (both formal and informal) is the major informant, some of the health problems can be addressed through the education systems since lifestyle is a product of knowledge, skills, and values that one acquires.

1.2 Statement of the Problem

Despite numerous efforts to improve health, health problems are still affecting both developed and developing countries. Indeed, lifestyle-related diseases such as obesity, diabetes, cardiovascular disease, cancer, dental disease and osteoporosis are some of the most common cause of death in the world and present a great burden for society. While some of these health related efforts focus on improving lifestyle and healthcare systems, little attention has been given to the role which indigenous education can play in fostering health practices. This has led to gradual abandonment and even extinction of some of the traditional health practices which have been shown to have promoted health. This study therefore aimed at establishing how indigenous education promoted and propagated health practices as a way of maintaining the well being of the society so as to inform the contemporary society on the knowledge, skills and values that maintained health but are now at the verge of extinction taking the traditional Bukusu community of Kenya as a case.

1.3 Purpose of the Study

The purpose of the study was to investigate the contributions of indigenous education to health practices among the Bukusu Community of Bungoma County of Kenya.

1.4 Objectives of the Study

The study was guided by the following objectives:

i) To establish the health related content of indigenous education among the Bukusu Community of Bungoma County of Kenya
ii) To find out the factors that determined the content of indigenous education particularly in health practices among the Bukusu Community of Bungoma County of Kenya.

iii) To establish the ways through which health practices are propagated to individuals in indigenous education and how such ways contributes to health practices among the Bukusu Community of Bungoma County of Kenya.

iv) To determine how indigenous education contributes to health practices among the Bukusu community of Bungoma County of Kenya.

v) To find out whether indigenous education as practiced by the Bukusu community of Bungoma County of Kenya is relevant to the current health promotion efforts.

1.5 Research Questions

The study was to address the following questions:

i. What is the health related content of indigenous education among the Bukusu Community of Bungoma County of Kenya?

ii. What determined the content of indigenous education particularly in health practices among the Bukusu Community of Bungoma County of Kenya?

iii. How are the health practices propagated to individuals in the indigenous education and how do such ways contribute to health practices among the Bukusu Community of Bungoma County of Kenya?

iv. How does indigenous education contribute to health practices among the Bukusu community of Bungoma County of Kenya?

v. Is indigenous education as practiced by the Bukusu community of Bungoma County of Kenya relevant to the current health promotion efforts?

1.6 Significance of the Study

The findings of this study may be useful to practitioners, policy makers and international communities in health sector on how to promote health through promotion of traditional health practices. The study findings may also contribute knowledge to the existing indigenous knowledge that can be useful to diverse sectors such as environmental conservation and sustainable development. More so, findings of this study may be useful to curriculum developers, teachers and policy makers in education sector.

1.7 Assumptions of the Study

The study made the following assumptions:

i. That the informants were honest in providing the information that was being sought by the researcher.

ii. That the translation of information from local language to english and vice versa did not destruct the intended meaning in the original context.

1.8.1 Scope of the Study

The study was carried out on the Bukusu community of Bungoma County targeting their health practices as promoted and propagated through Indigenous education. While health practices include efforts that are aimed at providing or restoring the wellbeing of the individual including disease prevention and management, proper nutrition and safety promotion, this study only focused on promoting bodily health, growth and development efforts.

1.8.2 Limitations of the study

Since every community has a system of indigenous education with some unique aspects, some of the findings of this study might not be generalised to other systems of indigenous education outside the Bukusu community.

1.9 Definition of Terms

The following operational terms were used in the study:

Acupuncture- Is a traditional Chinese method of medication that involves the stimulation of specific points on the body by a variety of techniques, including the insertion of thin metal needles through the skin. It is intended to remove blockages in the flow of *qi* and restore and maintain health.

Alternative Medicine- Traditional medicine that has been adopted by other populations (outside its indigenous culture) and is often modified. It is also called complementary medicine.

Apprenticeship- Is a practical training by a skilled professional in an art, craft or trade.

Clan- A group of families related through a common ancestor or marriage normally with particular identification names.

Contribute- Be partial cause of something. To be one of the factors that causes something.

Education- Transmission of acceptable values, desirable skills and the accumulated knowledge of a society

Elder- A member of a family, tribal group, or village who is advanced in years and has influence and authority within the community. In this study an elder was a person aged 60 years and above.

Environment- All the external factors influencing the life and activities of people, plants, and animals.

Health- Is a state of complete physical, mental, and social well being that includes the absence of disease, infirmity, injuries and impairments.

Health Practices- Efforts that are aimed at providing or restoring the wellbeing of the individual that includes promotion of wellness, proper nutrition, preventing and controlling diseases, preventing accidents and injury among others (Gratus,

2009). In this study the term was used to refer to wellness, nutrition and prevention and control of diseases through traditional herbal medicine.

Herbal Medicine- Are herbs, herbal materials, herbal preparations, and finished herbal products that contain parts of plants or other plant materials as active ingredients used for treatment of illnesses.

Indigenous Education-Is the sum total of knowledge, skills and attitudes that are particular to a specific community that is passed on from one generation to another or within the same generation.

Lifestyle Diseases- Are diseases that are a result of or whose effect is increased by improper ways of living (WHO, 2012). In this study, the term was used to refer to those diseases that are a result of risky behaviors such as smoking, improper diet lack of body exercises and environmental degradation.

Traditional Medicine- Is the sum total of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures that are used to maintain health, as well as to prevent, diagnose, improve or treat physical and mental illnesses (UNESCO, 1996).

Wellness- Is the state of being well. It means engaging in attitudes and behavior that enhance the quality of life and maximizing personal potential such as proper physical exercises, sufficient rest and avoidance of unsafe behaviors (UNESCO, 1996). In this study wellness was used to refer to activities that enhance physical and mental soundness of life such as physical exercises and disease control.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter discusses the literature that is divided into five major sub-headings namely: Concept of Indigenous Education, Health Related Content in Indigenous Education, Methods of Indigenous Education, Indigenous Education and Health Practices and the Relevance of Indigenous Education as practiced by the Bukusu community to current health promotion efforts. Theoretical framework is also discussed under this chapter.

2.1 Concept of Indigenous Education

Indigenous education in definitional context can generally be thought of as the transmission of acceptable values, skills and the accumulated knowledge of a particular society (Itibari, 2006). Thus, education is essentially a societal instrument for the expansion of human culture. Itibari, (2006) further defines knowledge as a state of knowing or understanding gained or retained through experience or study. In close relation to this, Sifuna and Otiende (1994) define education as a means of transmitting ones culture from generation to generation or process by which people are prepared to live effectively and efficiently in their environment. It is a process of bringing about a permanent change in human behaviors. From these two definitions, it is evident that education has two dimensions: content (what is taught) and process or method (how it is taught). For the purpose herein, these short definitions provided a functional seed to the cultivation of indigenous educational and pedagogical discourse.

As one of the oldest industries in human history, education is therefore the main instrument employed by the society to preserve, maintain and grapple with its social equilibrium; hence a society's future depends largely on the quality of its citizen's education. It could be therefore asserted that educational systems existed in African society prior to the European invasion of the continent. Mara (2006) opines that African traditional education aimed at inducting the members of the society into activities and mode of thought that conduced to norms and values of the society. Mara further maintains that African societies were noted for their cultural heritage which was preserved and transmitted from generation to generation through a system of traditional education.

The main aims of African indigenous education was to preserve the cultural heritage of the extended family, the clan and the tribe; to adapt members of the new generation to their physical environment and teach them how to control and use it; and to explain to them that their own future, and that of their community, dependent on the understanding and perpetuation of the institutions, laws, language and values inherited from the past (Sifuna & Otiende, 1994). Understandably in accordance with these objectives, the content of African Indigenous education grew out of the physical and social situations. Accordingly, the process of education in African traditional society was intimately ingrained in the social, cultural, artistic, religious and recreational life of the community (Fafunwa, 1974).

2.2 Content in Indigenous Education

Boeteng (1983), Kenyatta (1965), Ocitti (1973), Ronoh, Ogola, Makori and Mumiukha (2011), Scanlon (1964) and Watkins (1943) among others, have described indigenous systems of African education prior to coming of Islam, Christianity and Colonialism using several African cultures or societies and have shown that it was education that prepared one for responsibilities as an adult in his or her home, village or tribe. The traditional system not only lacked the modern classroom setting under the guidance of a teacher, but was also characterised by the absence of student/pupils with uniform, regimentation and permanent teachers. However, it served its purpose at the time. This is because it was essentially practical training designed to enable the individual to play useful roles in the community (Scanlon, 1964).

Since indigenous education was intimately ingrained in the social, cultural, artistic, religious and recreational life of the community (Fafunwa, 1974), aspects such as names of trees, plants, animals and insects, as well as the dangers and uses of each were learnt as boys herded cattle or farmed on land with their fathers, and girls helped their mothers in household work. Scanlon further states that the education of the African child before coming of the Europeans was an education that prepared him for his responsibility as an adult in his home, village, and tribe. He or she was taught social etiquettes and survival methods that ensured smooth running of the social entity of which he was an integral part (Scanlon 1964).

Watkins (1943) describes the traditional process of education in West Africa. She calls the traditional African educational institution the “Bush” school for the Poroh and Bondo societies conducted their training for boys and girls respectively outside of village or town. The training given to the youth was for physical, mental and reproductive health purposes intertwined with social and survival skills. Watkins (1943) further describes how each youth was to undergo thorough training before he or she could be considered a worthy member of the society but fails to point out how such training imparted in any way to the health of the trainees. Ocitti (1973) has also described the education of African youth under the indigenous system stressing that the process starts from the time of unborn child. He states that like any good system of education, it had its objectives, scope and methods which clearly reflected the ways of life or cultural patterns of the clan or chiefdom.

Indigenous education was practical and relevant to the needs of society. Fafunwa and Aisiku (1982) reports that the focus of education in old Africa was; social responsibility, political participation, work orientation, morality and spiritual values. Traditional education integrated character-building, intellectual training, manual activities and physical education. The content included all of the activities, rituals, and skills required to sustain the culture and life of the family and community. Great importance was placed on interpersonal relationships and reciprocal obligations.

Although such indigenous education has been shown to have ensured survival in the immediate environment, extensive studies showing how it promotes health and wellness are minimal and therefore a study of contribution of indigenous education to health practices among the Bukusu could strengthen the knowledge of survival as instilled by indigenous education. As described by Alembi (2000) as well as Barasa and Onkware (2010), Bukusu indigenous education is embedded in its rich culture and practices and it can only be understood through its cultural institutions such as initiation, healing, religion, and marriage as well as leadership structures.

The Bukusu had significantly rich traditions and culture some of which have persisted over years amidst Western modernization. For instance, Makila (1978) explains that being sedentary pastoralists, they had time to care for their sick and bury their dead. A

sick person is looked after until he recuperated or died. When a person dies, he or she is buried in a grave that ranges from 3–4 feet in depth. Furthermore, Alembi (2000) while describing about the Bukusu male initiation process reiterates that the initiates are normally given important moral, physical and all-round life related education. This indicates that there were useful health practices knowledge and skills that were promoted and passed on from generation to generation through different societal structures of the Bukusu. A deeper enquiry of health related knowledge and skills in Bukusu indigenous education was therefore necessary for more understanding of the importance of such knowledge and skills to existing societal problems.

2.3 Methods of Indigenous Education

While most studies which have focused on methods used in indigenous education through which enlightenment on various modes of education have been done, most of such studies have not shown specifically how health practices were propagated and whether such modes of education had any contribution to promotion of health practices. Sifuna and Otiende, (1994) writes that both formal and informal processes have been utilised for the transmission of knowledge, skills, ideas, attitudes and patterns of behavior in indigenous education. However, in their discussion on these methods used in indigenous education, they have not shown how such methods contributed to mastery of activities and in particular the health practices.

Scanlon (1964) states that tribal legends and proverbs were told and retold by the evening fireside, and through them much of the cultural heritage of the tribe was kept alive and passed on to the children without indicating their impact on other aspects of life such as health. Scanlon (1964) further states that there were riddles to test children's judgment and myths to explain the origin of the tribe and the genesis of man. Such oral traditions, narrated with care and repetition, additionally constituted the African child's training in what was often a complicated linguistic system without a script.

Ocitti (1973) describes how imitative play, too, formed an important part of informal education. He states that boys staged mock battles, and made model huts and cattle pens; girls made dolls, played as husband and wife and cooked imaginary meals. This play

mode of education therefore forms an important methodology in physical as well as mental education but as it seems, the importance of play in customary education in Africa has been undermined by many observers. A major part of the cultural heritage of African people was transmitted to children and adolescents through these informal activities. Learning was by doing, which involved observation, imitation and participation. Kenyatta (1965), for example, compares Kikuyu education with the idea of progressive education. Kenyatta notes that knowledge that was acquired was related to a practical need and was merged into activity and could be recalled when that activity was again required.

Additionally, Kenyatta (1965) analyses how formal education in the past was imparted through succeeding stages of initiation from status to status among the Kikuyu who are endowed with a pronounced age-set system. The assumption of each status was accompanied by a sequence of rites with organised instruction of one sort or another. Initiation ceremonies and formal training for adulthood have also been reported from many other societies of the continent, especially from East, Central and Southern Africa. Among these may be mentioned the Sidamo of Ethiopia, the Nandi of Kenya, the Maasai of Kenya and Tanzania and the Pare and the Makonde of Tanzania (Scanlon, 1964). Indeed in many traditional societies of Africa, formal education most strongly manifested itself in the initiation ceremony.

Watkins (1943) has illustrated the extent of formalism in the initiation and the post-initiation training with reference to the Poro society in West Africa. This society functioned among the Kpelle, the Gbunde, the Loma and the related peoples of Sierra Leone and northern Liberia, extending as far as the border of Guinea. Among these peoples, a youth, after circumcision, was initiated into the Poro; his formal entry into the adult world could not take place before the completion of the Poro education. The length of a term in the Poro School was theoretically four years, but the time a youth had to spend in it varied. Joining the school was not obligatory. However, a boy who did not go through it had no social standing so that, traditionally, membership of the Poro society was practically universal (Watkins, 1943).

Through Watkins' description, it is clear that a coming-of-age ceremony sustained the individual at a critical stage in his life, the transitional period between late childhood and adulthood, through interaction with his peers. While Watkins (1943) has shown that it was during the ceremony of coming-of-age and the accompanying training that a major part of the tribal mythology, accumulated knowledge and skills, and appropriate attitudes were transferred to the young initiates (Watkins, 1943), the description does not show how such knowledge and skills contributed to the wellbeing of the society particularly by imparting health practices. To the extent that adults took part in the ceremony and that the ceremony was attended by considerable pomp and spectacle which impressed upon the participants the significance of the occasion, then some of these cultural components must have been reinforced for them and this creates the need for investigation of how such trainings were important to the wellbeing of the society.

Among the Bukusu community, there has been a strong traditional male initiation process through circumcision (Alembi, 2000) that is normally characterised by succeeding stages of initiation endowed with a pronounced age-set system just like what Kenyatta (1965) describes among the kikuyu community. This initiation process is described by Osogo (1966) and Were (1967) as being highly institutionalised with common formal practices and the process that normally carry a lot of education to the initiates. Moreover, Makila (1978) notes that such education is usually holistic, covering social and physical education that encompasses health education. A deeper enquiry of what kind of education and the methodology used is therefore necessary to establish how such education contributes to health.

Another form of formalized instruction in indigenous education was apprenticeship model of learning whereby people learned under masters (Mara, 2006). Mara notes that the traditional education is therefore a process by which every society attempts to preserve and upgrade the accumulated knowledge, skills and attitude in its cultural setting and heritage to foster continually the wellbeing of mankind in which health is the core of it. An enquiry of how indigenous education methodology has been contributing towards health practices was therefore necessary to show how such education systems contributes to the wellbeing of mankind.

2.4 Indigenous Education and Health Practices

According to WHO (2002), health refers to physical and mental wellbeing of the individual and not just the absence of diseases. Health practices therefore refers to any efforts that are aimed at providing or restoring the wellbeing of the individual. Such practices include promotion of wellness, proper nutrition, preventing and controlling diseases, preventing accidents and injury among others (Gratus, 2009). However, this study only focused on contribution of indigenous education on wellness, nutrition and preventing and controlling diseases through traditional herbal medicine whose review of literature is discussed as follows:

2.4.1 Indigenous Education and Wellness

According to UNESCO (1996), wellness is the state of being well. It means engaging in attitudes and behavior that enhance the quality of life and maximizing personal potential such as proper physical exercises, sufficient rest and avoidance of unsafe behaviors. Wellness involves individual and community activities that enhance lifestyle. Lack of well being and increase in lifestyle diseases as a result of changes in the ways of living has been an issue of concern worldwide. Coronary artery disease (CAD), ischemic stroke, diabetes, and some specific cancers, which until recently were common only in high-income countries, are now becoming the dominant sources of morbidity and mortality worldwide (WHO 2012).

In addition, rates of cancers and cardiovascular disease (CVD) among migrants from low-risk to high-risk countries almost always increase dramatically. In traditional African societies, for example, CAD is virtually nonexistent, but rates among African Americans are similar to those among Caucasian Americans (Gordon 1978). These striking changes in rates within countries over time and among migrating populations indicate that the primary determinants of these diseases are not genetic but environmental factors, including diet and lifestyle.

Early menopause (at age 40-45) has been associated with lifestyle diseases such as the development of osteoporosis, obesity and other features of the metabolic syndrome, and cardiovascular disease (Gordon, 1978; Jacobsen, Heuch and Kvale , 2004, Sternfeld, 2005), whereas delayed menopause (occurring at age 55-60) has been associated with an

increased risk of estrogen-responsive cancers (Sternfeld, 2005). According to Cui (2006), menopause marks the natural cessation of reproductive capacity in women as well as the onset of increased risk for many chronic health problems.

Considerable research has been published regarding lifestyle and reproductive factors that may predict the age of onset of menopause in women of different racial/ethnic and socioeconomic backgrounds (Castelo-Branco, 2006). The results of these studies, primarily conducted in Western countries showed several factors that affect the timing of menopause. These studies have suggested that physical activity and diet influence the age at which natural menopause occurs. Some studies have observed earlier menopause among malnourished women or women with a low body-mass index (BMI), while overweight or obese women may experience menopause at a later age. These studies indicate that lifestyle patterns have an impact on reproductive health as well (Gordon, 1978).

Considerable research has been aimed at identifying modifiable determinants of chronic diseases. Prospective epidemiological studies, some randomised prevention trials, and many short-term studies of intermediate endpoints such as blood pressure and lipids have revealed a good deal about the specific dietary and lifestyle determinants of major chronic diseases. Most of these studies have been conducted in Western countries, in part because of the historical importance of these diseases in the West, but also because they have the most developed research infrastructure. A general conclusion is that reducing identified, modifiable dietary and lifestyle risk factors could prevent most cases of CAD, stroke, diabetes, and many cancers among high-income populations (Willett & Leibel, 2002).

These findings are profoundly important, because they indicate that these diseases are consequences of lifestyle of a modern society. Furthermore, low rates of these diseases can be attained without drugs or expensive medical facilities, an outcome that is not surprising, because their rates have historically been extremely low in developing countries with few medical facilities. It was therefore imperative for execution of an extensive study that could show how traditional lifestyles promoted and propagated through indigenous education contributed to health practices that hinder such lifestyle

related diseases. This prompted this study that used Bukusu community as a case. This aimed to show how indigenous education has been promoting health through ensuring wellness of individual persons and the society as a whole.

2.4.2 Indigenous Education and Nutrition

Previous studies have shown how Indigenous knowledge ensured prosperity of proper food and diet (Food and Agricultural Organisation (FAO), 1998). This was ensured through knowledge and skills of keeping and acquiring both plant and animal products that promoted good health among individuals. FAO lists loss of traditional knowledge as a major constraint in the promotion of proper diet and nutrition around the world (FAO, 1998) and therefore this prompts more studies in indigenous knowledge of food production and consumption.

It has been shown that alongside conserving the plants themselves, indigenous peoples possessed detailed knowledge about species and their environment that allowed them to make appropriate decisions on the sustainable use of natural resources. For example, in Zimbabwe crops such as okra (*Abelmoschus esculentus*), pumpkins (*Cucurbita* spp. and *Lagenaria* spp), tsunga (*Brassica juncea*) and sweet sorghum (*Sorghum bicolor*) which require considerable moisture and high soil calcium and potassium were grown exclusively on ant hills, which are more fertile and retain more water (Zimbabwe, 1998). This shows that such systems allowed people to meet the nutritional requirements of their families and reduce the risk of crop failure by inter-cropping and cultivating a wide variety of crops.

In Botswana, the “wild” relatives of cultivated crops form an important part of the diet of rural communities as these are part of the ecosystem that surrounds them. These “wild” vegetables are often seen on the table of many rural and urban dwellers and contribute towards the food security and nutrition of the population (Ohiokpehai & Ramosweu, 1999). FAO (1995) notes that traditional edible plant species are consumed as supplement to staple foods and during seasonal food shortages. FAO have documented the utilisation of 62 edible wild fruit species, 100 species used for their leaves and 19 species used for their roots. The San bushmen of Namibia are said to know as many as 150 edible plants including fruits, leaves, seeds and nuts, tubes and roots (Namibia,

2002). They also use numerous plants as sources of drinking water, notably the tubers *Raphionacme burkei* and *Coccinea rehmanni.*

While pointing out on Bukusu sub tribe of which this study focuses, FAO (1998) notes that the Bukusu sub-tribe has a diet that includes over a hundred different fruits and vegetables drawn from at least 70 genera. However, this finding by FAO does not indicate the traditional knowledge of production, conservation, consumption of the Bukusu of their foods. Furthermore, it fails to show how the wide knowledge of food variety was promoted and propagated and how it forms an important health practice that betters the health of individuals.

Bukusu accounts indicate that both agricultural and pastoral economies have been practiced by the tribe for as long as it can be remembered. This is authenticated by the vast amount of knowledge they have about farming practices, rich pastoral vocabulary and the broad variety of legends connected with pastoral life (Were, 1967). Alembi (2000) shows that in Bukusu community, cattle and sheep are universally kept, cattle mainly for milk, and sheep for meat and ceremonial functions. Chicken, a traditional delicacy, are nowadays reared on small to medium scales for commercial egg production (Alembi, 2000). A study of food variety knowledge among the traditional Bukusu community was therefore necessary to help in identification of its contribution to health hence forming a health practice.

FAO studies (FAO, 1995 and FAO, 1998) clearly show that African cultivators still rely to a large extent on traditional foods that grow in their native environment yet, throughout Africa, inclusive of Bukusu community, the indigenous knowledge relating to these wild plants is at risk. Mulenkei (1998) observes that such indigenous knowledge driven systems are gradually being eroded. This is largely due to the adoption of modern farming methods, which has undervalued the importance of agro-biodiversity and traditional knowledge.

Together with the use of high-yield hybrid varieties and the adoption of exotic varieties by communities, this has led to the neglect of many traditional food crops and varieties. Even more of a threat is the loss of the species themselves, through loss of habitat or change in climate. If a species is lost from the area surrounding a community, then the

information about it built up over many generations is likely to disappear as well. (Cross & Baker 1991). Therefore investigation and documentation of how Indigenous education systems ensured and propagated proper nutrition particularly from the Bukusu community was necessary to help curb the loss of these valuable practices and provide more information on the desirable traditional knowledge of food production and consumption.

2.4.3 Indigenous Education and Traditional Herbal Medicine

Traditional medicine is the sum total of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures that are used to maintain health, as well as to prevent, diagnose, improve or treat physical and mental illnesses (UNESCO, 1996). Medicinal plants, since times immemorial, have been used in virtually all cultures as a source of medicine. The use of traditional medicine and medicinal plants in most developing countries, as a normative basis for the maintenance of good health, has been widely observed (UNESCO, 1996). Furthermore, an increasing reliance on the use of medicinal plants in the industrialised societies has been traced to the extraction and development of several drugs and chemotherapeutics from these plants as well as from traditionally used rural herbal remedies (UNESCO, 1998). Moreover, in these societies, herbal remedies have become more popular in the treatment of minor ailments, and also on account of the increasing costs of personal health maintenance. Indeed, the market and public demand has been so great that there is a great risk that many medicinal plants today, face either extinction or loss of genetic diversity.

2.4.3.1 Use of Traditional Herbal Medicine

Medicinal plants can make an important contribution to the World Health Organization (WHO) goal to ensure, by the year 2015, that all people, worldwide, will lead a sustainable socio-economic productive life (WHO, 2002). Recently, the WHO estimated that 80% of people worldwide rely on herbal medicines for some part of their primary health care (FAO, 2004). However, this estimate did not show the extent to which people rely on traditional herbal medication as opposed from contemporary herbal medication.

Self-medication with herbal remedies and 'natural' medications taken by mouth is widespread and growing in the UK (House of Lords Science and Technology Committee, 2000). Almost half of women with breast cancer report taking herbal remedies, vitamins, or other supplements during treatment (Werneke, 2004). Among cancer patients in general, 7% report taking herbal medicines (Dept of Health NHS R&D Programme, 2006). Self-medication may be used to help counteract the effects of cancer treatment; to alleviate symptoms of cancer; to boost the immune system; to deal with other conditions; or in the hope of tackling the cancer itself (Astin, 2006). It may also provide a sense of control or of being actively involved in treatment (Vickers, 2006).

The practice of traditional medicine is also widespread in China, India, Japan, Pakistan, Sri Lanka and Thailand. In China about 40% of the total medicinal consumption is attributed to traditional tribal medicines. Traditional Chinese medicine (TCM) originated in ancient China and has evolved over thousands of years. TCM practitioners use herbs, acupuncture and other methods to treat a wide range of conditions. TCM, which encompasses many different practices, is rooted in the ancient philosophy of Taoism and dates back more than 5,000 years (Xue & O'Brien, 2003). Today, TCM is practiced side by side with Western medicine in many of China's hospitals and clinics. According to Cassidy, (1998), TCM is widely used in the United States. Although the exact number of people who use TCM in the United States is unknown, it was estimated in 1997 that some 10,000 practitioners served more than 1 million patients each year. In the last 20 years in the United States, public dissatisfaction with the cost of prescription medications, combined with an interest in returning to natural or organic remedies, has led to an increase in herbal medicine use (Cassidy, 1998).

Gorman (1992) drew attention to the power of Chinese folk medicinal potions in treating maladies from eczema and malaria to respiratory disorders. In the quest for new medicines to treat old and emergent diseases such as malaria and AIDS, attention is now being given to discovering the active ingredients encountered in the treasury of over 5,000 Chinese herbs, plants and roots that have been used routinely and traditionally.

The above mentioned studies on use of herbal medicine clearly indicate that herbal medicine has been modernized to some extent in what is now called alternative medicine. But from observation, such alternative medicine appears more inaccessible to poor local people who cannot still afford its cost. While the studies focus more on modernized medicine, little attention has still been given to traditional herbal medication of which many poor people in traditional societies resort to.

In almost all African countries, quite a number of people resort to traditional medication and there have been numerous efforts in African countries to enhance the field of herbal medicine. For instance, following workshops on education and "updating the knowledge" of traditional medicinal practitioners in Osun State, Nigeria (Commonwealth Knowledge Network, 2003), it was recommended that the local government should establish a hospital, and provide equipment, for treatment with, and preparation of, traditional medicines.

In Kenya, about 80% of the local people meet their primary health care needs through herbal medicine (Ronoh *et al*, 2011). Toweett (1979) describes the use of herbal medicine as practiced by the Kipsigis tribe of Kenya during the pre-colonial times in which he states that it knowledge was propagated down a family or clan lineage but Ronoh (2000) while describing this practice among the fore mentioned Kipsigis reiterates that clans trained young men and sometimes girls in this profession. Similarly, Ronoh *et al* (2011) describes the use of herbal medicine among the Ogiek tribe of the Mau Forest in Kenya. In their description, Ronoh et al observes that the use of traditional herbal medicine is still the main mode of medication among the Ogiek of Mau forest and affirms that the practice helps in the conservation of the Mau Forest of Kenya.

Osogo (1966) hinted that Bukusu traditional community has healers and prophets who received great status because of their knowledge of tribal tradition, medicines, and religion. He gives an example of Elijah Masinde, a resistance leader and traditional medicine man, who was revered as a healer in the early 1980s (Osogo, 1966). However Osogo's description of healing among the Babukusu does not illustrate how such healing contributed to health practices. Examination of healing in the traditional Bukusu was

therefore necessary to help in understanding how such knowledge contributes to proper health.

While studies of indigenous knowledge on uses and conservation of useful indigenous herbs and plants has been intensified among scientists at Kenya Forestry Research Institute (KEFRI), National Museums of Kenya (NMK), Kenya Medical Research Institute (KEMRI), School of Medicine of University of Nairobi especially the Pharmacy Department and Kenyatta University School of Health Sciences which have been focusing on traditional medicinal plants, commonly referred to as alternative medicine (Ronoh *et al,* 2011), there is need for more studies focusing on traditional herbal medicine as practiced by individual communities to get a wide range of herbal medication and enhance preservation of these affordable modes of medication.

2.4.3.2 Future of Traditional Herbal Medicine Knowledge and Practices

Despite the increasing use of medicinal plants, their future, seemingly, is being threatened by complacency concerning their conservation. Reserves of herbs and stocks of medicinal plants in developing countries are diminishing and in danger of extinction as a result of growing trade demands for cheaper healthcare products and new plant-based therapeutic markets in preference to more expensive target-specific drugs and biopharmaceuticals (Cocks & Dold, 2000).

The holders of traditional medicinal knowledge differ in different indigenous groups. Cocks & Dold (2000) have noted that traditional herbal medicine knowledge is unique in its form in every community. In some cases all members of the community may know how to treat a wide range of common diseases and only seek the advice of a traditional healer on specific diseases when their own treatments have failed. This self-medication is often missed by anthropologists and so not documented (Cocks & Dold, 2000). There is therefore abundant information on traditional herbal medicine if the knowledge is gathered from different communities.

However, this abundance of information is in danger of disappearing. The knowledge of medicinal plants is normally passed on orally from one generation to the next. Kokwaro (1976) noted that “A lot of valuable information can be lost or distorted whenever a

medicine man dies without revealing his knowledge to another. Some medicine men unfortunately keep the secret to themselves until the last minute before death when they call whoever is to inherit the knowledge, to give instruction". This is a dangerous method of passing on the knowledge since the recipient may easily forget or mistake the information

Other factors may well lead to the loss of traditional medicinal knowledge. Changes in the lifestyles of the younger generations, such as a lack of respect for, and interest in traditional medicine and movement of young people away from their native areas can obstruct the oral transfer of information (Mohamed, 1992). The holistic nature of indigenous knowledge systems means that the loss of an indigenous language or religion may mean large amounts of traditional medicinal knowledge are lost with them. The study of indigenous education among the Bukusu and its relation to traditional herbal medicine will therefore contribute towards mitigating the loss of knowledge about traditional herbal medicine thereby contributing towards the consolidation and preservation of the diverse knowledge about traditional herbal medicine that exists.

2.5 The Relevance of Indigenous Education as practiced by the Bukusu to current health efforts

Barasa and Onkware (2010), Makokha (1993), Namulundah (2011) and Wanzala, Takken, Mukabana, Pala and Hassanali, (2012), have previously done studies related to Bukusu indigenous knowledge in which they have hinted that the Bukusu have rich traditional knowledge that can be useful to various aspects of life including health. However, none of the mentioned studies has detailed what this Bukusu rich indigenous knowledge contained in terms of content and how it contributed in detail to health practices. Furthermore linkage of the mentioned Bukusu knowledge to contemporary issues has not been enlightened. As this creates a desire to establish the latter, another question of how was the knowledge propagated arises. For instance, Namulundah (2011) discusses folklore as one of the tools used to propagate the knowledge; she doesn't detail other methods in which the rich knowledge was transmitted and moreover, there is no analysis of ho such use of folklore contributed to some aspects as health practices.

The relevance of indigenous education and especially of Africans to various aspects of the contemporary society has been undermined by many scholars. This roots from the very early Europeans who first came to Africa while holding a predominant view that Africans had no history and culture to perpetuate to young ones and therefore Africans never taught the young (Murray, 1964). This mistaken belief reflected an ignorance of knowledge systems and helps to explain why the first European educationists never considered that the formal schools they were introducing had any relationship to the largely informal education African children were receiving in their communities.

Moreover, it has been noted that some other scholars assumed that because Africans did not know how to read and write, they had no systems, contents and methods of education to pass on to young (Lebakeng, 2010). To such scholars, education in Africa meant western civilisation. They neglected anything traditional because of their restricted view of the nature of education and thus, the introduction of Western institutions by some colonial agencies was calculated to undermine many aspects of African social structures and pave the way for their replacement (Berman, 1975).

Christian missionaries often found themselves at odds over the place of indigenous knowledge, beliefs and customs in the emerging Christian order. Missionaries believed that African degeneracy was rooted in their culture and traditional belief systems (Berman, 1975). The extent to which mission school teachings accelerated the splintering of the traditional society is indicated by the comments of some Africans who experienced them. For example, the late Kenyan leading politician, Oginga Odinga, noted that missionaries in his school were not satisfied to concentrate on the word of the Bible; they tried to use the word of God to judge African traditions. An African who followed his people's customs was condemned as heathen and anti-Christian (Odinga, 1967).

From then, this has led to African youths being persuaded to see no value in African culture and education. A survey study carried out as early as 1970s among Kenyan and Tanzanian students revealed that only a small percentage attached value to African education and culture (Prewitt, 1977). These findings suggest that many people are still myopic about the characteristics and impacts of African traditional education on modern civilisation. It is no wonder, every technological and medicinal discovery in Africa

arouses much international debate and final dismissal if not patented by Westerners and therefore Africa is generally unrecognized or extremely discounted in the arena of science and technology as observed by Itibari (2006).

Ocitti (1973) refutes writers who have construed that since Africans had no reading and writing, they therefore had no any systems of education and so no contents and methods to pass on to young. He in turn echoes that before the advent of the Europeans, African indigenous education was quite adequate in so far as it met the requirements of the society at the time. Traditional African systems of education were and still are so effective that a total rejection of the African heritage will leave African societies in a vacuum that can only be filled with confusion, loss of identity and a total break in intergenerational communication (Boeteng, 1983). Boeteng further notes that the essential goal of traditional education is still admirable and remains challenging.

Tedla (1995) in her call for a new form of African education rooted in the positive aspects of indigenous thought and education. She introduces the concept of Sankofan education as a buffer against the uncritical and often unconscious negative images about Africa that has led some of the Africa's young to value the sensibilities of Africa by Western values and thus devaluate the traditional African way of life. Hence, she rightfully defines Sankofan education as an African centered education anchored on indigenous African thought, that judiciously borrowed ideas and technologies from other people of the world and thus, her cornerstone attributes rest upon African cultural heritage, the transcending of ethnic and national blinders to appreciate the relatedness of the African world community experience, the placement of Africa and African values at the center of investigation, the preparation of learners to contribute to the society and five acquisitive goals concerning cultural and academic excellence, spiritual development, community building, physical fitness and health (Tedla 1995).

Busia (1964), on the other hand, acknowledges the pre-scientific basis of African cosmology and acclaims the value of Western scientific thought in replacing superstition with tested knowledge; however, Busia (1964) and Mungazi (1996) rightly cite African traditions of observation and understanding of the natural environment which led to discovery of healing techniques as evidence of indigenous scientific observation and

thought. Moreover, African traditional religions, that are polytheistic and based on the worship of life-sustaining natural forces, seem more compatible with today's emergent global environmental ethos than Western monotheistic faiths that place humans over nature.

On the other hand, in the area of learning methods, indigenous reliance on field experience, active discovery and close observation reflects a progressive pedagogy and seems more likely to promote retention of learning than classroom-based book and test methods that dominate Western schooling. Re-evaluation of traditional education is part of a process of reclaiming cultural identity with deeper roots in authentic African traditions. Formal education is viewed as a potential means of liberation and many reform strategies have been proposed. Kenyatta (1965) thought that education must maintain the traditional structures of family, kinship, sex and age grouping if African societies were to remain stable; otherwise, he foresaw the onset of social disintegration.

Busia (1964) identified a widespread expectation before and after independence that "education should be rooted in Africa's own cultural heritage and values and have relevance to African societies." Like Edward Blyden, he felt that schools could only preserve and transmit this culture by maintaining African languages. This point was made even more forcefully by Moumouni (1968), who claims that real literacy can only be taught in an African language and should extend to the entire population. Such mass education is seen as one way to counteract the elitism and class divisions created by Euro-centric schooling. Mazrui (1978) identifies a deeper need for young Africans to struggle to conquer African self-contempt which arose as a psychological by-product of Euro-centrism. On the other hand, he asks whether Africa could return to traditional values without sacrificing any possibility of a scientific or technological revolution (1978).

Mazrui (1978) suggests a dual solution of Africanising the humanities while boosting technical and vocational training. A more radical plan is favored by Unwuachi (1972), who thinks that black cultural objectives can never be obtained by using white European standardized educational processes. In his view, Western culture as motivated by individualism, economic expediency, self-interest and superego principles is

incompatible with the African emphasis on collective life, economic communalism, resource-sharing, and group obligation. He calls for a new departure in African education to build community values, strengthen the family, teach ethical standards, promote health, and develop capacity to achieve the basic needs of security and human welfare.

Ajayi, Goma and Johnson (1996) who considered the reasons why universities have failed to stimulate development that improves the life of the masses in so many African countries identifies nine areas that needs attention in school programs. These included many ways to improve living standards such as: elimination of disease, hunger, ignorance, and poverty; moral guidance; promotion of values; building respect for indigenous African culture; reduction of crime and violence; achievement of national integration with preservation of cultural diversity; protection of the environment; and strengthening of democracy.

The dark ages which relegated the African education and civilisation into ignorance and superstition should therefore receive more light on the authenticity of African traditional education. Since Indigenous knowledge has been variously shown to have promoted and promoted the wellbeing of the members of the society including health (Moumouni, 1968; Osei, 1970) and more so, a good number of health problems have been shown to be managed through traditional herbal medication (UNESCO, 1998), it must be illuminated enough for people to recognise African indigenous education as one of the most effective and potential means of solving African problems (Osei, 1970). This calls for investigations on how indigenous education contributed to specific aspects of the social wellbeing such as health practices since the very Bukusu indigenous education has been said by the fore mentioned scholars to have had rich knowledge that was important to the society.

2.6 Theoretical Framework

The study was guided by the following theories:

i. Medical Ecology Theory
ii. General Systems Theory

2.6.1 Medical Ecology Theory

Medical Ecology Theory which is also called biocultural theory asserts that humans' health behaviors are products of biological as well as cultural responses to the environment (AlIand, 1977). It views human populations as biological as well as cultural entities and it aims to measure, describe and interpret how constraining factors in the environment affect the body (Wiley 1992). It combines concepts from physical anthropology with those from cultural anthropology to explain the ability of the individual to adapt to the environment by biological or behavioral means (Wiley 1992). Taking a systems approach in research, culture is seen as one resource for responding to environmental problems, but genetic and physiological processes carry equal weight.

This theory expands the concept of the environment to include social factors, and while political and economic influences are considered determinants of health, they are not explored as an explicit goal of the theory (Walker, 1998). The individual is considered to be a biological entity, shaped by evolution and social factors that influence its biology through its decision making. Health is defined in biological terms as an individual's ability to adapt by biological or behavioral means. For example, people are infected by Human Immunodeficiency Virus (HIV) and develop Acquired Immunodeficiency Syndrome (AIDS) because their behaviors expose them to the causative virus. Interventions aimed at prevention would focus on education, using Western ideas of causation and prevention aimed at changing behavior. The theory's main proponent advocates retaining an evolutionary perspective because it provides a pre-historic and historic perspective (Wiley 1992).

A key concept in medical ecology is adaptation. These are the changes, modifications, and variations that increase the chances of survival, reproductive success, and general wellbeing in an environment (AlIand, 1970). Adaptation is considered to be an essential concept which reflects a dynamic relationship between individuals and their environment. Humans adapt through genetic change, physiological responses (short-term or developmental), cultural knowledge and practices, and individual coping mechanisms. A basic premise of this theory is that health is a measure of environmental adaptation, and disease indicates disequilibrium. A second premise is that the evolution of disease

parallels human biological and cultural evolution. For instance, it shows that the risks faced by foraging peoples differ from those of agricultural groups and industrial societies, and the epidemiological profile of each subsistence type is a function of human relations with the environment and with other species in the ecosystem, especially food sources, domesticated animals, and pathogens (AlIand, 1977).

This theory was appropriate to the study of contributions of Indigenous Education to Health Practices among the traditional Bukusu since Indigenous education was embedded in culture (Sifuna and Otiende, 1994) which according to this theory is a response to the environment for health promotion (AlIand, 1970). Since indigenous education was for survival, then it must have promoted adaptation to the environment hence promoting health practices. The theory was useful in informing how the particular educational practices as embedded in culture contributed to ensuring and propagating health practices.

The major weakness of medical ecology theory is that it does not account for non biological and non cultural factors that influence health (Walker, 1998). Critical medical anthropologists object to the fact that a Bio-cultural perspective does not emphasize the social, political, and economic factors that underlie and influence health (Singer, 1989). To account for these other forces, general systems theory was therefore used to supplement the medical ecology theory.

2.6.2 General Systems Theory

The general systems theory developed by Buckley states that social systems consists of complex elements or components that are directly or indirectly related in a casual network (Buckley, 1967). The theory asserts that the intricate relationship of the parts cannot be treated apart from the context of the whole. It reflects the idea that society (social system) should be treated as a unified whole and therefore in understanding indigenous education among the Bukusu community, the Bukusu society has to be studied as a whole. Ritzer (1992) acknowledges that each component is related to at least some others in a minor or less stable way within any particular period.

This theory was helpful in understanding indigenous education among the Bukusu community and its contribution to health practices in that the theory stipulates that a society possesses a self-regulating mechanism whose goal is the maintenance of equilibrium (Buckley, 1967; Giddens, 1987). The Bukusu maintained equilibrium with regard to ensuring proper health through appropriate aspects of health practices in their indigenous education. The general systems theory emphasizes on self regulation, structural integration, adaptation and pattern-maintenance. The theory assumes that there is an underlying order, pattern, regularity and stabilisation of a social system in a continual change regardless of whether there is a tendency towards self maintenance or self regulation of the society. This is related to this study because health defects are detrimental and the Bukusu therefore came up with ways to regulate these defects through their indigenous education.

Giddens (1987) states that in such a system change in some parts affect other parts as well as the whole. According to him, the set of forces that maintain social equilibrium involves three types of factors namely extra-human environment or physical condition, such as vegetation and climate; external conditions such as a given society's previous state and contact with other cultures; and finally the inner elements of the system such as interests, knowledge, values, ideologies and sentiments. Giddens (1987) argues that if the social system is subjected to pressures from external forces, inner forces will then push toward restoration of the equilibrium, hence restoring the society to its normal state. He emphasizes that there are mechanisms in society such as cultural organisation that deal with the problem of social disruption.

This theory views the social world in dynamic terms, with an overriding concern for socio-cultural emergence and dynamics in general. This approach was relevant in informing this study on the various transformations that Bukusu underwent with time and its effects. The Bukusu's intricate social institutions as well as their political and environmental structures as seen from this theory provided an understanding of the socio-ecological organisation of their indigenous education in relation to enhancement of Heath Practices.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter provides an overview of research process and methodology. The chapter contains an overview of the research design; the study location; the population of the study; sampling procedures and sample size; instruments used; validity and reliability; data collection procedures, and data analysis procedure.

3.1 Research Design

The study employed an ethno-historical approach that systematically and objectively locates, evaluate and synthesize evidence in order to establish facts and draw conclusions concerning the past events (Axtell, 1979). This method was appropriate since the study was aimed at understanding indigenous education of Bukusu ethnic group with particular focus on their health practices. This approach enabled the researcher to draw as many kinds of testimonies as was possible over a long period as the sources allowed (Simmons, 1998).

An ethno-historical approach combined two research designs namely the *emic* (local viewpoint) design and the *etic* (Scientist oriented) design. The *emic* design was used to investigate how the local people explain, perceive and categorize their world view and the researcher identified the rules of behavior and the meanings attached to them. For instance, some of the respondents pointed out that prohibition which children are taught to believe such as development of ringing bells as a result of sitting on a grinding stone are actually true. This helped the researcher to identify the seriousness accorded to inculcation of fear method of education such that even some adults believe it is actually true.

While in the field, the researcher used the *etic* design that shifted the focus from the local categories expressions, explanations and interpretations to those of the ethno-historian. This counterchecked the defects of the first design taking into account that members of the culture are often too involved in what they are doing to interpret their cultures impartially (Axtell, 1979). The researcher ethically brought an objective and comprehensive viewpoint of the study.

3.2 Location of the Study

The study was carried out in Bungoma County of Kenya. Being, the native home of the Bukusu community, the county has the greatest composition of Bukusu's than other counties which have only smaller percentages of the Bukusu people (Kenya National Bureau of Statistics, 2010). Having the largest percentage of the Bukusu people, the County has more less homogenous Bukusu individuals and this minimizes cultural influence from other tribes hence improves the reliability of the information. More so, Bungoma County has a composition of almost all clans of the Bukusu hence it is representative of the whole Bukusu community. However, one of the respondents under the category of ritual experts was from Matungu area in Kakamega County due to use of snowball sampling technique. This informant was identified by both the two initial participants from Bungoma County.

3.3 Population of the Study

In this study, the target population was all the individuals of Bukusu sub-tribe of the Luhya that reside in Bungoma County. This group of individuals was estimated to be about nine hundred thousand individuals (KNBS, 2010). However, not all these individuals follow indigenous practices and therefore this population size was not used to derive the sample size.

3.4 Sampling Procedures and Sample Size

To ensure an objective and comprehensive data collection, purposive and snowball sampling techniques of the non probability sampling strategy were used. In particular, exponential non-discriminative snowball sampling was employed after identification of initial informants through purposive sampling. This ensured that those participating in the research from the target population were those people that were knowledgeable about specific details and information that the researcher intended to investigate. To minimize subjectivity and biasness in snowball sampling technique, different groups and categories of informants were used so that data collected was correlated and counterchecked.

Purposive sampling was used to select key cultural consultants who by experience and training provided useful data about particular aspects of the society (Kottak, 2002). These cultural consultants were from two categories namely general cultural consultants and

traditional health practitioners. General cultural consultants included members of specialized groups like council of elders, religious experts, ritual experts, and other elderly persons.

These Informants were useful in providing data about the content, pedagogy and value of indigenous education as per the research objectives. For instance, the council of elders were people who were well versed with rules and regulations of the community while religious and ritual experts are well versed with culture and rituals of the community hence their knowledge and experiences was useful in informing the research questions. On the other hand, traditional health practitioners included traditional initiators, traditional midwives and herbalists. These groups provided information on their health practice services, how they acquired the skills of their service and the relation of their traditional services to modern health efforts.

Two initial informants were identified in every group and these people were then used as informants to identify others who qualified for inclusion in the study and these, in turn, identified others, hence the number kept on snowballing. Table 1 provides the list of informants' groups and the corresponding number that was accessed and interviewed from each group. The table also categorises the informants' groups into two large categories of general cultural consultants and traditional health practitioners.

Table 1

Informants Categories and Corresponding Number of the Informants

Informant Category	Number of informants
General cultural consultants	**(n=22)**
Council of elders	6
Religious experts	6
Ritual experts	4
Other elderly persons	6
Traditional health practitioners	**(n=20)**
Traditional Initiators	8
Traditional midwives	5
Herbalists	7
TOTAL	**42**

According to Babbie (1996) and Gall & Borg, (2003), for every group to constitute a snowball, a minimum of two other informants were to be identified but while in the field it was recognized that there were few ritual experts (*Baswala kimise*) and therefore only a total of four were accessed and interviewed. For traditional midwives, a total of five were accessed and interviewed while for the council of elders, religious experts and other elderly persons a total of six informants in each mentioned category were accessed and interviewed. Other categories of informants recorded a higher number of informants than the anticipated minimum of six. Therefore, a total of forty two elderly persons (60 years and above) persons were interviewed. This was as

While Morse (1994) suggests a sample size of between thirty and fifty for qualitative research, Bernard (2000) suggests samples of between thirty and forty five for ethnography and ethno science studies. Since Crouch and McKenzie (2006) suggest use of small samples in qualitative research with the number being appropriate to the kind of research and groups of samples involved, a sample size of forty two informants was suitable for this study since it lies within the recommended range and suits the number of informants' groups in the study.

3.5 Instrumentation

The instruments that were used for data collection were two interview schedules and an observation schedule. In addition to use of these instruments, data was also collected from documentary sources. One of the interview schedules was for general cultural consultants and the second one was for traditional health practitioners. The interview schedules were designed to suit collection of information as per the research objectives from each of the special targeted groups. These involved enquiries of information about content, what defined content, and pedagogy, promotion of health and contribution of indigenous education to current health efforts from the informants.

Both interview schedules were semi-structured with probing questions to enrich information that was being sought by the researcher as per the objectives and to create a free environment with respondents through flexibility of questioning style and sequence. However, the interview schedule for traditional health practitioners was designed to

acquire information about the informants' current traditional health practices in comparison with the past and the modern health practices in order to enrich information on the value of indigenous education to contemporary society.

On the other hand, the observation schedule was designed to study aspects related to indigenous education that have an influence to health practices. The instrument was designed to study the fore mentioned aspects in social traditional functions such as burial and initiation ceremonies. The observation schedule was further designed to study operations of traditional health practitioners such as the traditional circumcisers and traditional herbalists. The instrument was designed to enable the researcher identify the health practice aspect as well as scrutinize the details of the performance of the practice. This instrument was important in obtaining information on current traditional health practices.

3.6 Pilot Study

Pilot interviews were conducted in Kiminini Division of Trans-Nzoia West District in Trans-Nzoia County in which a total of five people were interviewed. This helped to establish and rectify problems that could have arisen in the course of data collection such as data recording in which the researcher resorted to use of a tape recorder. Kiminini Division has almost the same characteristics to Bungoma County due to its immediate location to Bungoma County and its homogenous composition of Bukusu individuals.

In addition to pilot study, pre-contact with the targeted informants was done in order to identify key cultural consultants and authorities to discuss the purpose of the study with them. Some of the sensitive issues about culture were established in both the pilot study and the pre-contact. One of the issues identified was prohibition of the enquiry into secret rituals carried out during traditional passage out of the initiates in a ceremony called *khulicha*. As informed by the elders pre-contacted, there are dire consequences of contravening this rule such as being insane, termites coming out of one's head and death to the extreme. This informed the researcher to reconstruct some of the items in the interview and observation schedules. In general, pilot study and pre-contact helped establish the viability of the research plan.

3.7.1 Validity of the Instruments

In order to ensure validity in this study, the researcher formulated and adapted the items in the interview schedule by considering the set of objectives in order to ensure that they contained all information that would enable answer the research questions. The items in the observation schedule on the other hand were formulated with regard to some of the objectives that could be measured through observation such as relevance of indigenous education as practiced by the Bukusu to current health promotion efforts. The researcher also consulted the supervisors and other experts from the department of Psychology, Counseling and Educational Foundations at Egerton University for opinion and advice on the instruments.

3.7.2 Reliability of the Study

To ensure reliability, the researcher carried out a dual process of establishing the authenticity (external criticism) of the sources and validity of their contents (internal criticism) as suggested by Parkash (2007). This was further enhanced by use of triangulation as suggested by Baker (1994). In particular, external criticism was done through prior establishment of informants who were known to contain the information being sought by the researcher and who were also deemed to be honest in the Bukusu society. This was achieved through prior contact with most of the occupants of Bungoma County such as council of elders. On the other hand, internal criticism was achieved through comparison of the consistency of information provided to that of other informants.

Since triangulation is a form of cross-validation that seeks regularities in the data by comparing different informants' comments, settings and methods so as to identify recurring results (Baker, 1994), triangulation was used to establish the credibility of the study. Triangulation was achieved in this study through comparison and integration of data obtained through interview schedules and data obtained through observation schedules. These were further counterchecked with the available data obtained from documentary sources.

3.8 Data Collection Procedure

Upon satisfying the requirements of Egerton University Graduate School Board of Examiners, the researcher obtained a research permit from the National Council for Science and Technology (NCST). This was followed immediately by proceeding into the field to collect primary data through oral interviews (O.I). The interview schedules were used for each of the targeted groups: traditional initiators, traditional midwives, herbalists, council of elders, religious and ritual experts, and other elderly persons. Of the forty two oral interviews, thirty eight of them were carried out in local Lubukusu language since most of the informants couldn't understand English or were not comfortable to express themselves in English while three were carried out in English and one in Swahili language. The researcher therefore translated the items in the interview schedules to the respective mentioned languages.

Concerning ethical considerations of the research, the researcher was keen to not delve into issues that were considered a secret to society as had been earlier established from pilot study. One of such issues was inquiry in traditional pass out ceremonies for the initiates called *khulicha*. Concerning, disclosure of informants' identity the researcher enquired from informants of their willingness for identity disclosure. All the forty two informants interviewed accepted and were even eager for their identity to be disclosed since the information that they provided was not harmful in any way to themselves or the community. However, while presenting the results, the researcher avoided disclosing the specific informant to matters considered sensitive based on the researchers own judgment.

The information collected from the field was further enriched and counterchecked through secondary sources from libraries and through further primary sources from archival data collection from Kenya National Archives (KNA). For Documentary Sources, Secondary and Archival data were collected from libraries. Both published and unpublished materials in Kenyan libraries were read and analysed. Specifically, data was gathered from textbooks, journals, periodicals, official government reports, provincial and district annual reports as well as legislative council debates from national libraries and the KNA. These provided useful data about indigenous education among the Bukusu

as embedded in their culture. The researcher then established the relation of the said indigenous education among the Bukusu to health practices. Accordingly, data from these sources were used to supplement primary data from oral interviews.

The researcher also used non-participant observation method where the researcher attended five traditional burial ceremonies and twelve initiation ceremonies as was appropriate in order to establish the practices carried out during these ceremonies and identify any health practices features in them. The researcher also observed the operations of two traditional herbalists and three circumcisers to establish how they ensure healthy working conditions. This observation method was useful in identifying the traditional health practices through indigenous education that have persisted amidst western civilisation. The method was also useful in identifying the transformations that the traditional health practices have undergone with time such as use of modern tools. These in turn helped in enriching information on the relevance of indigenous education as well as traditional health practices to the current health efforts. Through observation, much was learnt by observing phenomena without manipulating the subjects and this provided a detailed and comprehensive description of indigenous education and health practices.

3.9 Data Analysis

Some data gathered were transcribed and translated into English since Kiswahili and Lubukusu languages were used besides English. This included search of English and scientific names for various food sources, herbs and animals that were found relevant to the study. Data obtained from oral interview was triangulated through comparison and integration with data obtained by observation schedules. Data was further counterchecked with the available data obtained from documentary sources. The data was then organised, categorised, synthesised and projected into themes based on the objectives. The key themes that the researcher came up with are: General characteristics of the respondents; forms of health related content such as physical education and sanitation habits; ways through which health practices were propagated to individuals; indigenous education and wellness; indigenous education and nutrition; indigenous education and traditional herbal

medicine and relevance of indigenous education as practiced by the Bukusu to current health promotion efforts.

Gay and Airasian's (2003) four steps in analysing qualitative research data was used to come up with the above mentioned themes. The four steps are: reading, describing, classifying and interpreting. The researcher constructed patterns that emerged from the data and interpreted meaning out of them within the concepts of medical ecology and general systems theories with particular reference to indigenous education and health practices. Starting with a large set of issues, the researcher progressively narrowed them down into small and important groups (sub themes) of the key data (theme) and conclusions from the data was made in each stage (Gall & Borg, 2003, Kottak, 2002).

CHAPTER FOUR: RESULTS AND DISCUSSION

4.0 Introduction

This chapter deals with data analysis, presentation, interpretation and discussion of the findings of this study. The purpose of this study was to investigate the contributions of indigenous education to health practices among the Bukusu Community of Bungoma County of Kenya with the major points being to establish the health related content in indigenous education, to find out the factors that determined the content of Indigenous Education particularly in health practices, to establish the ways through which health practices are propagated to individuals in indigenous education and how such ways contribute to health, to determine how Indigenous Education contributes to health practices and to find out the relevance of indigenous education as practiced by the Bukusu community of Bungoma County of Kenya to the current health promotion efforts. From the findings of the study acquired from oral interviews, observations and documentary sources, the researcher came up with themes as enlisted and discussed below.

4.1 General Characteristics of the Respondents

People interviewed were drawn from seven categories namely council of elders**,** religious experts, ritual experts**,** traditional circumcisers, traditional midwives, herbalists and significant elderly persons.

4.1.1 Council of Elders

This is a group of people who are selected based on age and level of wisdom as one would be judged to form the community's leadership (Amutallah, Oral Interview (O.I), 24.7.2013). It was established that the council normally has its chairman with members representing the different clans of the Bukusu sub tribe. These people are accorded respect within the community since they are the ones that deliberate and decide on issues affecting the community. The leader has a group of advisers from local clans and they form the inner council that discusses matters and brings them to the open council which usually goes by the speech of the spokesman in the inner council order. According to many people who were interviewed, a member of council of elders is someone who

should be well versed with the culture and traditions of the community. Council of elders were significant in providing information about cultural processes and functions of the Bukusu community. Currently, the Bukusu council of elders' headquarters is in Sirisia in Bungoma west District of Bungoma County.

4.1.2 Religious Experts

Religious experts that were selected in this study were people who still observe and even lead one of the known traditional Bukusu religions famously known as '*Dini ya Msambwa*' which is literally translated to mean 'religion of rituals'. These people are well versed with Bukusu beliefs because these beliefs are rooted in belief of existence of a supreme being called *Wele* (KNA/DC/EN 3/2/4). Since traditional Bukusu never adored any idols, Bukusu cultural functions such as birth, death and burial as well as circumcision ceremonies are blessed by religious experts who pray for the smoothness of the processes and the blessings of *Wele*. Religious experts teach people to believe in one supreme god who is thought to be unique. The community believed that he was the creator of all things on earth, both living and non living. They referred to god with a variety of names like *Wele mukhobe* (Brown god), *Wele we khuluchi* (god of water), *Wele khakaba* (god the giver of everything), *Wele we batayi* (god of the first), *Malaba wa nasioka* (god of everything), *Wele murumwa* (messenger god). They therefore recognized a divine trinity headed by *Wele khakaba* and their calling on him was important in everything. Religious experts were significant in providing information on beliefs of the Bukusu which informs their practices and lifestyle.

4.1.3 Ritual Experts

Ritual experts interviewed in this study were people who are performers of a ritual known as *kumuse*, performed in honour of a respected elder after his demise. They are referred to as *Baswala kimise* (performers of a ritual known as *kumuse*)**.** These are people who are believed to communicate with ancestral spirits to guide the living on proper ways of living. They are usually powerful orators well versed with the Bukusu language, proverbs and all genres of oral literature that exist among the Bukusu. During their performance, they talk to people uninterrupted. They guide, warn and remind people on do's and don'ts of the community and finally pray for the deceased to be received by god and the other

ancestors that he is going to join. Ritual experts were significant in providing information about methodology of indigenous education and functions of various structures in Bukusu community.

4.1.4 Traditional Circumcisers

This category of respondents was made up of men who have been traditionally trained to carry out male circumcision. In Bukusu culture, not everyone can circumcise or be involved in the circumcision of a boy except a few who are born with that calling (mostly inherited) and they are referred to as *bakhebi* (circumcisers) or *balusanya* (the runners) which is used to refer to their ritualistic running when they hear the official circumcision song called *sioyayisio*. These people are well versed with the male initiation process which is characterized by circumcision (KNA, DC/EN 3/2/5). They were significant in providing information on the whole of the initiation process helping the researcher to establish health practices features from their indigenous knowledge. They also gave information on the kind of education (content) that the initiate gets during the process of circumcision.

4.1.5 Traditional Midwives

Traditional midwives are people (commonly women) who have been traditionally trained to help expectant mothers during the delivery process. Apart from the role they take during giving of birth, they also regularly check the expectant mothers to ensure that the pregnancy has no complications. They also guide young mothers on baby caring and some of them administer herbal medicine to infants and young children (KNA, DC/EN 1/4). These people are so significant in traditional health practices since they aid and ensure successful delivery and even growth of the child. Although their skills were acquired through indigenous education, most of the traditional midwives interviewed now incorporate modern tools and materials in their services such as use of gloves and modern surgical tools. They were significant in providing information about health education that expectant mothers get and the early health education to the infants and children.

4.1.6 Traditional Herbalists

Traditional herbalists' category in this study was comprised of traditional experts who use traditional herbal medicine and methods to immunize against infections, treat and cure or control and manage illnesses. As it was found, these people normally have a wide knowledge of medicinal herbs and easily recognise symptoms of certain diseases hence administering treatment. Apart from treating human beings, most herbalists normally treat livestock as well (Wanzala *et al*, 2012). This group was significant to provision of findings to this study since they provided information on wellness and management of diseases traditionally, the knowledge of which is acquired through indigenous education.

4.1.7 Significant Elderly Persons

This is a group of people who were found not to be belonging to any of the aforementioned groups but were deemed important in provision of information about the Bukusu that was being sought by the researcher. The group comprised of mostly old men and women who, as it was found out, were well conversant with Bukusu traditional practices. They were significant because they provided information touching on all aspects of the study and they were people providing information from an outsiders' perspective since they were not in any of the above mentioned category.

Based on the findings of from the above described informants, observations and documentary findings, the researcher came up with the following key findings of the study:

i. Health related content provided in indigenous education among the Babukusu include training in physical education, sanitation habits, work training, nutrition habits and child rearing.

ii. Indigenous education among the Bukusu have was created by forefathers prompted by a given event or circumstance and has been being passed from generation to generation despite the fact that it has been undergoing some modifications from time to time due to changing times and situations.

iii. Bukusu indigenous education used both formal and informal ways of educating people. The formal ways includes education through initiation and apprenticeship. The informal methods included use of songs, proverbs and riddles, folktales, medium of work and inculcation of fear. All these methods carried a contributory factor to health practices.

iv. The Bukusu culture and practices that are transmitted through indigenous education contributed to health practices by promoting wellness, proper nutrition and effective disease control and management through herbal medication. Wellness was promoted through ensuring proper physical fitness through play and work while proper nutrition was promoted through dissemination of knowledge of effective cultivation and utilization of nutritious foods. Herbal medicine knowledge was not decentralized but most people had the knowledge of how to treat common illnesses.

v. Most people still use both traditional and modern knowledge and skills in solving immediate problems. Indigenous education as propagated by the traditional Bukusu community is relevant to the contemporary society.

The above mentioned key findings of this study are discussed in detail as follows in the subsequent sections.

4.2 Health Related Content of Indigenous Education among the Bukusu

As earlier mentioned, one of the aims of this study was to establish health related content in Indigenous education among the traditional Bukusu community. In pursuit to establish this, the researcher asked informants what kind of Education was given to the young ones in indigenous education, whether the kind of education given was geared towards enhancing specific aspects of life and whether there were any aspects in indigenous education as practiced by the Bukusu that promotes health practices and well being of an individual. The respondents were allowed to respond to the questions with as many details as possible. Moreover, frequent probing questions were used to enrich the answers.

In response to these questions, one of the council of elders said that the Bukusu indigenous education was an all round education which was to promote growth and survival in the environment as well as promote moral education (Amutalla, O.I, 24/7/2013). It was evident from the oral interviews that education provided was for specific purpose and nothing was taught for its own sake. The education had a number of basic aims that includes disciplining the children, teaching the children about their culture, preparing the children to become good members of the society and equipping them with the necessary knowledge and skills for their future roles in the community. After comparison and integration of data from oral interviews, non participant observations and documentary sources, the researcher established the following aspects as part of the health related content in indigenous education among the Babukusu.

4.2.1 Physical Education

Physical education was provided in all stages of life but was given prominence in infancy, childhood and the gestation period. In infancy, physical education was geared towards enabling the child to sit stand and even walk. One of the midwives, Khanjila (O.I, 19.7.2013) explained that both the mother and the nurse (*Omulesi*) encouraged the child to walk. She stated that the process started by inducing the baby to sit, then crawl and finally stand and walk. A child was trained to sit by first being allowed to sit between the thighs of the nurse (Khanjila, O.I, 19.7.2013) while another midwife Wanyonyi (O.I, 19.7.2013) said that the method used to train the child to sit was to sit the child and then put skin or some soft materials such as banana fibers around it. If the child fell over, it was made to sit up again. This process was repeated as many times as was necessary to enable the child to sit on its own. This is confirmed by Simiyu (2013) who affirms that both methods were used.

The next stage was then to induce the child to crawl. This was done by making it sit then placing an object in front of it. The attraction to the object invariably forced the child to get it. In its effort to get to the object in question, the child was forced to crawl. As the child approached to the object, the mother or nurse would move the object further. This process was repeated many times until the child was then taught to stand. This was done by holding the child around the armpit or making it hold on to a piece of stick. Once it

could stand on its own, the child was encouraged to start walking. This was done by holding the child around the armpit then encouraging it to forward steps. The child could also be made to hold on to whoever was assisting it and then made to walk. This was done for as long as possible to enable the child to walk on its own (Khanjila, Wanyonyi, Wekunda, O.I, 2013).

This early training that involves various steps until the baby was able to walk has important contribution to physical and mental health and development of the baby. By a baby being passed through strenuous physical activities until it walked helped develop its muscles and strengthen its bones. According to Jacobsen et al. (2004), early physical activity of a child not only plays a part in physical development, but contributes to mental development as well. By using various attractive objects and shifting their position for a child to follow, the process exercises the child's mind hence stimulating its development. The process was therefore an important early health practice.

Oral interviews also showed that children were encouraged to play. Boys played more masculine games like mock fighting, tug of war, running competitions and football in which the ball (*Lifundo*) was made from rags or polythene papers. On the other hand, girls played light games like mock cooking, robe jumping and local netball. These practices further enhance physical fitness as well as mental development since most of the games involve tact.

Oral interviews also showed that pregnant women were not allowed to sit idly as it was believed to cause problems and much pain during the time of child delivering. This was evident in Getrudah Wanyoyi's words in which she said: '*Omukhasi omukara anania khukwhibusia*' meaning an idle woman gives problems during the time of giving birth. An expectant woman is therefore encouraged to take part in normal chores such as tilling in the farm and fetching of water at early stages of pregnancy but as the pregnancy progresses, the nature of work has to turn to light duties alone. However, it was discouraged for a pregnant woman to sit idly as this was believed to be harmful to the fetus that needed exercises. It is also believed that working would reduce pain at the time of giving birth.

Although physical activity to an expectant woman has been found to be important to the health of both the mother and the foetus as it prevents most of the complications such as varicose veins (Sternfeld, 2005), over-strenuous physical activities could lead to complications in pregnancies and even to miscarriage. This health practice is therefore good but can turn to be harmful if over practiced.

Based on fore mentioned findings and analysis, Bukusu indigenous education therefore provided physical training to both the young and adults alike. This was provided in forms of play training, crawling, standing and walking training as well as work training. Based on medical ecology theory, it is apparent that this form of content was a behavioral effort to promote survival and utilise the immediate environment. These are important aspects of health practices as they not only promote physical and mental wellbeing of an individual but aid in performance of chores as well as production of resources such as food.

4.2.2 Sanitation Training

Oral interviews showed that training in sanitary habits was another form of content that was and still is provided in Bukusu indigenous education. On giving details to her answer on education provided, Diana Wanjala (O.I, 18.7.2013) explained that children were taught how to clean running noses and discouraged from picking up anything and then throwing it in their mouths. She further explained that the emphasis was also on toilet habits. As established from the oral interviews, the primary aim here was to teach the child to defecate some distance away from the house. After defecation, cleaning of the anus was done by the mother or the nurse using some soft leaves such as *kamang'ulie* and *kamasiobo*.

Children were also discouraged from wetting their beddings at night. By two or three years, the child was expected to have learnt where to defecate or urinate. A child who persisted in defecating or urinating at wrong places was given an appropriate corporal punishment. During this stage, the child learnt mainly by observation and imitation. These processes contributed to the child's hygiene and the environments cleanliness which is a boost to proper health.

Hygiene observance was not only limited to children alone but was extended to adults and old alike. This was illustrated in Simiyu Wabala's words (O.I, 16.7.2013) in which he stated: "It is a taboo for an adult person and more especially an old one, ill or healthy, drunk or sober, to defecate in a house." It was further established that anyone who happened to defecate in the house was required to produce a sheep for which would be slaughtered to sanctify the evil act. This cultural rule promotes an important health practice, hygiene, which is core to maintenance of proper health. Training in sanitation was therefore another significant contribution of indigenous education to health practices which according to medical ecology theory is a behavioral effort to environmental adaptation.

4.2.3 Occupational Training

Occupational training as established from oral interviews in this study constituted an important content component in Bukusu indigenous education. The Babukusu valued occupational training commonly referred to as work, - so much that idle people were shunned by the society. Occupational training which was gender differentiated was offered in both childhood and adulthood and ranged from herding, crop production and housekeeping to individual as well as family health.

From the age of about four or five years, children were expected to handle real chores. The boys were expected to learn mainly herding while the girls were supposed to learn mainly about farm work and house-keeping (KNA, DC/EN 3/2/5). In either case, the child started by first learning about the simplest of the tasks in that trade. The main task of boys was herding. They started off with simpler aspects of this task. At the age of five or so, the boys started to look after calves in or near the homesteads and they gradually graduated in to looking after livestock.

However, with respect to girls, most of the respondents explained that they (girls) started by doing simple tasks such as fetching water in a small container, sweeping the house, lighting fire, clearing utensils and bringing in firewood from nearby. At the age of seven or eight years, they took on more serious roles such as collecting vegetables and looking after younger children when the mother was absent. They also learnt how to grind grain

on the grinding stone, preparing simple meals and smearing of the floor of the house with cow dung. From eight years on, the girls were taught the various activities associated with farming. By the early teens, they were expected to cultivate their own plots. One of the female respondents, Mary Barasa (O.I, 10.8.2013) explained that she expects her girl of seven years to do all the work fully in her absence. This clearly shows that children were being prepared for adult roles.

Yaola (O.I, 18.7.2013), Lumbasi (O.I, 17.7.2013) and Wanjala (O.I 17.7.2013), agreed that it is the duty of a woman to grow, procure and prepare the vegetables used in eating the traditional dish. Women are therefore required to learn and perfect in such skills like vegetable production and preparation. There are a number of local species of vegetables which women prepare for their families. These vegetables include pumpkins (*Lisiebebe*), Spider plant (*chisaka*), Amaranth (*litoto*), Jute plant (*murere*), Sun hemp (*kimiro*), Malabar spinach (*endelema*), *lifwafwa*, *esufwa*, Red-flower ragleaf (*khafululu*), Wild cabbage (*Sarati*), Black night shade (*namasaka*), Pig weed (*emboka*) and Black jack (*makoe*).

It was apparent from the findings that one was required to know the seasons, the conditions and places for growth of every afore mentioned vegetable species. For instance, *lisiebebe* is planted at the close of the rainy season so that after germination, it grows in a dry season since its leaves are normally destroyed by rain (Wanjala, O.I, 18.7.2013). It was further established that growing has to be done in places where there are short trees or herbs because it is a climber. Such training in vegetable production is a key knowledge towards enhancing health since it ensures proper nutrition as well as physical activities for the body. On the other hand, fathers were also taught on how to manage common illnesses in the family and provide care and unity in the family as the father which enhanced prosperity of the family (Makokha, Chikati, O.I, 2013).

In conclusion, training and emphasis for work was not only a means of promoting physical fitness but also a way of ensuring production and acquisition of all the necessities that one requires in life such as food, water and shelter. Occupational training in Bukusu indigenous education therefore promoted and propagated important health practices.

4.2.4 Nutrition Habits Training

Apart from occupational training which involved production of food, it was established from oral interviews that nutrition habits training was also provided in indigenous education among the Babukusu. This involved training children and their nurses or mothers, the sick and their nurses, as well as the old and their caretakers on what foods to eat and what not to eat as well as in what proportions. For instance, Rose Wamalwa (O.I, 20.7.2013) explained that immediately children learn to talk, walk and do most of the things on their own, they are taught about exploitation of their immediate physical environment. Children learn to distinguish edible food products like plant products, insects, mushrooms and vegetable materials from the non-edible ones. At this time, they are also taught about harmful or poisonous plants, mushrooms, insects and many other materials or products within their immediate or neighboring environment.

Expectant and child nursing women were also taught on what to eat and what not to eat as well (Wamalwa, O.I,20.7.2013). For instance, expectant mothers were not allowed to consume meat from pregnant dead animals. Such mothers were preferably encouraged to take *mrere* (Bush okra) which is a vegetable believed to lessen labour pains and shorten the process of delivery. A nursing mother on the other hand was given milk, meat and honey when available. She was not allowed to eat certain other vegetables such as *lifwafwa* (*Commelina bhenqalensis*), *Namasaka* (Black night shade) and *Esufwa* which are bitter and believed to cause stomach pains.

In medical ecology theory interpretation, these trainings concerning food consumption at every given level such as during pregnancy are the changes, modifications, and variations that increase the chances of survival, reproductive success, and general wellbeing in an environment. As established, there was enormous training on what to eat and what not to eat at a given time. This training strengthened an important health practice, nutrition, and this is an important aspect of indigenous education among the Babukusu.

4.2.5 Child Rearing

According to this study's findings, Bukusu indigenous education provided training to young mothers on how to raise children, how to detect illness in children and even on

how to treat common diseases by herbs. This training was provided mainly by a mother in law of the married girl or her own mother. Older women in the family or clan could also be teachers in this field. However the most authoritative instructor in this field was a reputable midwife.

One of the famous midwives, Khanjila (O.I, 19.7.2013), explained that her role is not only to aid in delivery of women but also to advice a pregnant woman on how to conduct herself including what kind of job to do and what not to do as well as ensuring healthy growth of the newborns throughout the infancy and childhood. As observed through non participant observations, midwives were receiving four categories of clients namely: non-expectant women, expectant women, women who are to give birth as well as women with infants and children. This shows that apart from taking care of pregnancies and deliveries, midwives also provided training on child rearing particularly in infant and children treatment.

On being asked to give examples on kind of training given to baby nursing women, Khanjila (O.I, 19.7.2013), quickly enumerated: "*Khutila omwana, khununia, khukhwalisia, khusinga, khumanya na alwala, khusilikha nende khulatia.*" In this she meant how to hold the baby, breastfeeding, soothing of the baby to sleep, showering the baby, detecting illnesses, offering immediate treatments and weaning of the baby.

It was also established from oral interviews that a nursing mother was trained on the period and interval to suckle the babies. Weaning was done either at the onset of the next pregnancy or when the mother felt she had done enough suckling. This was done through various ways meant to discourage the child from suckling including ignoring it when it wanted to do it or smearing something bitter on the tits. Last-borns were however allowed to suckle as long as possible, sometimes until they were old enough to undertake some real chores. In any case, since suckling of children was seen as a means of spacing children's births, the children were generally not weaned until they were at least two years old. This ensured that the child got enough nourishment from the mother's milk.

Child rearing training is therefore one of the key components of Bukusu indigenous education content that contributes to health. It is paramount to note that training offered

in child rearing is both a biological as well as cultural efforts to bring about wellness of the society as stipulated in medical ecology theory. It is biological in sense that it promotes procreation while it is cultural in the sense that it meets the community's obligation of rearing of children.

4.2.6 Moral Education

Although moral training is not part of the health practices, it was established from the oral interviews that moral training contributed to a good extent in promoting health practices. As informed by the general systems theory, all the aspects of Bukusu indigenous education geared towards attaining a stable society in which health practice as a component of health is core to it. The important traits valued in moral training to children include obedience, respect and responsibility. Training in these traits started early in childhood and continued throughout the child's life.

A disobedient child was chastised by inattention, teasing, and threats of supernatural sanctions, abuse, curses or a beating. Instructions were in the form of riddles, proverbs and stories. For children, strict observance of instructions that was expected helped in observance of health practices that were offered through indigenous education. For instance, children were strictly not allowed to touch any of their hands on the ground while eating with a belief that they would be cursing whoever prepared the meal. In obeying this rule children observed hygiene by not dirtying their hands that they were using for eating.

Adults were also expected to follow moral instructions some of which governed drinking habits and morality. For instance, adultery (*Khusora*) was forbidden. A man found in another man's house with the latter's wife in the act of sexual intercourse, the former pays a special fine called *silukhi* (Siruchu, O.I, 27.7.2013). The man is made to give his best milking cow and this is meant to embarrass him. The embarrassment and heavy fine made people to restrain from such risk taking behaviors that could promote transmission of sexually transmitted diseases.

Indigenous education therefore contributed positively through promotion and propagation of health practices in its content. The content promoted physical and mental fitness of

individuals through physical education as well as occupational training, proper all round development of individuals through child rearing training and proper food production and consumption through nutritional training. Indigenous education further discouraged health risk taking behaviors through its strict moral training as well as ensuring individual and environmental cleanliness through sanitation training.

4.3 Factors that Determined the Content of Indigenous Education Particularly in Health Practices

The second objective that the researcher intended to establish was on what led to adoption of the existing content in Bukusu indigenous education with particular reference to health practices. Accordingly, the informants were asked to explain where they thought the knowledge and skills embedded in the Bukusu indigenous education originated from, who were the creators of this knowledge (particularly health practice knowledge) that is passed on to others and whether there was any specific thing or factor that prompted a given type of knowledge or skill to be created and passed on. In addition, the traditional health experts were asked what made them to learn the particular skill that they had and whether everyone was free and able to learn that skill.

Based on the above, it was established that knowledge, skills and values that are taught among the Bukusu have existed since time immemorial. According to one of the informants, Khalaba, (O.I, 22.7.2013), the Bukusu indigenous education and the knowledge and skills embedded therein was created by forefathers in order to bring order and enhance survival in the surrounding environment prompted by a given circumstance. While giving examples, both Yaola (O.I, 18.7.2013) and Wachilonga (O.I, 15.7.2013) cited the reason for creation of inculcation of fear as a means of education that children would adhere to easily. The informants explained that children started being told to avoid sitting on grinding stones after an outbreak of a certain disease that was characterised by diarrhea. As interpreted, this was meant to control the spread of diseases since sitting on grinding stones used in processing of food materials could leave some of the fecal wastes on it causing the spread of the disease.

Knowledge once established, was consistently passed on from generation to generation, while undergoing some modifications from time to time due to changing times and situations (Yaola, Wachilonga. Khalaba, O.I, 2013). This indicates that the creation of this knowledge was prompted by a given circumstance or situation and this agrees with Fafunwa's observation that the process of education in African traditional society was intimately ingrained in the social, cultural, artistic, religious and recreational life of the community (Fafunwa, 1974).

Oral interviews also showed that the person who was to acquire the knowledge or skill was predetermined by the nature and kind of knowledge and skill to be acquired. For instance, when asked on answering the question 'what made you to learn this skill', Khalaba, (O.I, 22.7.2013) responded: "I was born a circumciser. No one can be a circumciser however much he tries if he was not born with that calling." This indicates that circumcision together with other few occupational skills like herbalist and midwifery were pre-determined to the select few who had the inborn calling. On the other hand other aspects of non specialist occupational knowledge and skills that involved everybody were provided indiscriminately to everyone.

It was further established that Bukusu conception of human society agrees with the position that upholds the naturalness of a society. This depiction was arrived at with the guide of general systems theory which stipulates that a society possesses a self-regulating mechanism whose goal is the maintenance of equilibrium (Buckley, 1967; Giddens, 1987). The findings of the study through comparison of what was being practiced and the changes the practices have undergone up to present shows an effort in attaining equilibrium with regard to ensuring proper health through appropriate aspects of health practices in their Indigenous Education. Knowledge on health practices was therefore created following a provoking circumstance like outbreak of a disease.

As established, the changes that have occurred in indigenous education among the Babukusu are efforts to adapt to the changing environmental situation and times. For instance, from the objective observation of some of the traditional circumcisers, it was established that some of them use modern materials such as aluminum foil to store their traditional equipments for hygiene purposes. The creation of every knowledge was

therefore an effort to solve a problem in the environment or enhance life and survival while modification is as a result of a change in the provoking event that created it. This is supported by the medical ecology theory which emphasizes that cultural practices are efforts to adapt to the environment.

The findings of this study agree with the findings of Makokha (1993) in which it was established that the Bukusu posit that a human being by his/her very nature delights and finds personal fulfillment in the company of others. They also see society as being a dynamic reality. They appreciate the fact that natural society is subject to change and modification given the dynamic and ever-changing physical, socio-political and economic realities of human life. Thus the change is viewed in terms of being an improvement on the natural conditions of human life. This is well illustrated in Bukusu community when small communities known as *chingoba* conglomerated and lived together communally for the benefit of their common good (Makila 1978). The rise of *chingoba* represents human effort to improve on their natural conditions and enhance human survival.

From the foregoing analysis and discussions, it is evident that the content of the Bukusu indigenous education was determined by forefathers, the immediate environment, and a given event or situation. The creation of the knowledge and skills that are propagated from generation to generation is attributed to forefathers, and such knowledge is dynamic as it was subject to revision in the light of specific environmental, social and economic change drivers. Moreover, while non specialist occupational knowledge and skills were open to anyone, specialist occupational skills were reserved for predetermined beneficiaries either by virtue of gender, "calling' or family lineage.

4.4 Ways through which Health Practices are Propagated to Individuals in Indigenous Education and how Such Ways Contribute to Health Practices

The other objective of this study was to establish the ways through which health practices were propagated to individuals in Bukusu indigenous education. The respondents were asked on the methods used generally on propagation of content as enlisted in appendix D and E and from their detailed explanations; the researcher came up with the findings. Like many traditional education around the world, the oral interviews confirmed that

Bukusu Indigenous education uses both formal and informal methods to pass on its knowledge, skills and values. The formal methods found to be used included the initiation process and apprenticeship while the informal methods included use of songs, proverbs, riddles, folktales, and medium of work as well as inculcation of fear. In the section below, a brief discussion on how these ways are used and their contribution to health practices is provided.

4.4.1 Initiation

The mode of initiation found to be prominent among the Babukusu was male initiation process that is marked by circumcision. Although female circumcision was said to have been present among the Babukusu, this practice must have faded and eventually abandoned long before the coming of the colonialists in the region (KNA, DC/EN/3/2/5). Therefore the strongly observed mode of initiation that has persisted over a period of time up to present is the male initiation process that is marked by circumcision.

4.4.1.0 Male Circumcision

Oral interviews showed that this was a process that was done from time to time in the past upon the declaration of the head of the council of elders in the land. But due to changing times, this process has been modified to be conducted in every even year during the month of august as the time for holiday according to the Kenyan school calendar. In order to understand the educative nature of the male initiation process among the Babukusu, it is paramount to discuss the process through analysis of all the steps, structures and roles involved as guided by the general systems theory which stipulates that in order to understand the system, all the structures of the system must be analysed.

Wabala, Khalaba and Makokha (O.I, 2013) agreed that the male circumcision process among the Babukusu is done to boys mostly aged between twelve and twenty years old. This process begins when the young person informs the mother that he is ready to face the knife. From the oral interviews, the researcher was able to divide the process into three main stages namely preparation for initiation (*khulanga* and *Likhoni*), Cut of the foreskin (*Khukhebwa*) and education to the initiate (*Khubita*).

4.4.1.1 Preparation for Initiation (*Khulanga* and *Likhoni*)

Murongoro (O.I, 27.7.2013) explained that the beginning of this stage is marked by the boy expressing his readiness to face the knife. He informs the mother who then informs the father. Upon satisfaction by the father that the boy is ready through various tests, the father informs the clan who then meets and plans for the process. Depending on the convenience, the planning is done for several initiates of the clan who will then be circumcised together. From the planning, the time of events is set and arrangements for different requirements made. The boy would then begin the process called *khulanga* which literally means inviting of the relatives to the event. This involves the candidate going around with *chinyimba* (chimed bells) and *birere* (wristlets) ringing them in company of young men while singing and dancing informing and inviting the relatives, friends, and the neighbours of the big event.

This process has important educative functions because through it, the candidate is given some important knowledge by the peers. Knowledge is also given to other young men and old as well through the songs that are sang. The songs have counseling, rebuking, praising and general educative messages (Khalaba, Murongoro, O.I 2013). *Khulanga* normally begins with visitation to aunt's place and ends with visitation to Uncle's place normally a day to the circumcision day.

A day before the final day of *khulanga*, there is a ritual process called *Khuchukhila* which literally means pouring water to something. This refers to a situation where the initiate goes to the river or well with a pot and fetches water which he comes to add to the local brew in the ritual beer pot that is being prepared for guests of the big event. This procedure has some educative functions because through it, a learner is taught to be obedient to instructions by virtue of its rigid rules. The initiate is expected to walk to and from the well using different routes and never turning to look behind whatsoever. This instills the sense of obedience.

The end of the *khulanga* is marked by a ritual process called *likhoni* where the initiate is tied with a piece of meat around his neck from a slaughtered cow or goat. This process is in two parts, first at the uncle's place and finally at his home by the father. While attending one of the initiation ceremonies, the researcher heard the initiate being told by

the uncle the following words during the process of *likhoni*: "You are now a mature man. Stay away from your mother and join your father's circle of men….. Know that you can now sire children and therefore petty games with girls should come to an end….Remember, we have diseases that come with those petty games…be watchful." From the uncle's words to the initiate, the initiate is being guided to behave more responsibly as a mature man in everything he undertakes and he is even warned against sexual risk taking behaviors that are referred to as petty games with girls. This constitutes important health practice information.

Based on the said sentiments from observations and oral interviews as well, it was apparent that during this process of *likhoni*, the initiate is given important moral, physical and even health information by the person performing the ritual. The process therefore carries educative message and normally the learner is expected to be attentive and obedient throughout the process. The traditional official song of the Bukusu (*sioyayisio*) is sung during this process.

4.4.1.2 Cut of the Foreskin (*Khukhebwa*)

Oral interviews and observations showed that after the *khulanga*, both the invited and the uninvited respond to the call by coming to the initiate's home the evening before the day of circumcision and spend the night there. On the eve of this final day to circumcision, the candidate is shaved using razor blades (s*ibekhelo*) to enhance cleanliness after the circumcision. He is then given food normally Ugali with salt-less meat as salt is believed to cause over bleeding after circumcision.

In the night preceding this day of circumcision, there is process called *khuminya* where there is singing and dancing throughout the night while enjoying foods and drinks including the prepared local brew (particularly by the elderly) famously known as *busaa* and *changaa*. The initiate with his peers spend most of the night outdoor but within the homestead regardless of the weather conditions. This practice is considered important as it helps the initiate's body to develop considerably low sensitivity to pain during the circumcision process. Towards dawn, however, the initiate would be allowed a few hours of rest before morning. At dawn of the circumcision day, the initiate is woken up while it is still dark and taken to a river next to a swampy place (*Msitosi/msitabicha*). Once there,

the initiate dips himself into the water, then comes out and stands by the swampy place where he is then smeared with a special type of clay mud.

This process is said to have important health significance because the cold mud acts as a partial anesthesia to reduce sensitivity to pain and also reduce excessive bleeding during and after the cut of the foreskin (*Khukhebwa*). The mud is also believed to be a cleaner since after *khukhebwa*, the initiate cannot take a bath until after healing and therefore when the mud drops off the body after drying, it comes out with dirt. From the river, the initiate is now escorted to his home to face the cut which is performed in the homestead publicly, witnessed by men and women as well as boys and girls.

The actual circumcision is done by the traditionally trained circumcisers called *Bakhebi*. *Bakhebi* are also often called *balusanya* which literally means the 'runners' that is used to refer to their ritual running when they hear the *sioyayisio* being sung. The circumcision tools used by the circumcisers includes a double edged locally made knife, (*Lukembe*), used for cutting of the foreskin; smooth rock file (*libale*) for sharpening *lukembe*; a piece of wood (*lupao*) for smoothening of the *lukembe* and burnt dust (*Litukhulu*) used to avoid sliding of the sword during the cut. Normally, such tools like *lukembe* are sterilised by being heated in fire for a long time before being used. The anti-sliding dust is normally heated to kill any pathogens in them believed to cause tetanus. The entire tools were kept wrapped in dry banana fibers (*kamakhola*) to avoid rusting but presently they are wrapped in aluminum foils papers.

The process of cutting the foreskin takes about five to fifteen seconds depending on the experience of the circumciser. If the prepuce is not stretched (a condition called *enkidole*) or if the initiate shows lack of enough courage, then the circumcisers cut off both the outer and inner layers of the prepuce once, otherwise the outer layer is cut off first before the inner one. This is done with great care and caution to avoid accidents. After the cut, congratulatory songs are sung and the initiate is given gifts. The initiate is then treated with a herb called *Bimeselo* which prevents bleeding after which he is taken to seclusion for three days.

A small girl of his age group mainly a relative (*namachengeche*) is chosen to be feeding and cooking for the circumcised boy (*omufulu*) immediately by his parents. Another boy of his age is chosen to be walking with him (*Namakhala*) for any aid that he will need. Meanwhile, the remains of the foreskin that had been cut are wrapped in banana leaves and disposed off by burying them after three days. According to most of the respondents, wrapping and burying of the foreskin remnants was the best disposition method but to the researcher's interpretation, keeping of the remains for three days is a negative health practice since the researcher observed that the remnants are kept in the very room where the initiate spends and eats (*Mwikombe*). This is because such prepuce remains attract microbes carrying insects such as houseflies and ants.

Special treatment is normally given to the circumcised boy including feeding and application of herbs and bandages. The meals served to the initiates are normally rich in proteins with a belief that they help replace blood lost during circumcision and they also hasten the healing process. These foods include meat from animals and birds, vegetables and eggs. All these are normally served with the community's staple food, Ugali. One member of the family (brother, cousin or paternal uncle) is selected to be giving the boy treatment using certain special burned ash called *enguu* which is a traditional medicine. The wound is then bandaged with leaves from a quaver tree. The treatment process is repeated until the boy heals.

4.4.1.3 Education to the Initiate (*Khubita*).

Khubita is a Luhya word meaning giving education to the initiate. Although most of the informants explained that the education given to the initiates during this process is majorly moral teaching touching on aspects such as how to behave as an adult, the researcher established from their explanations that there are other aspects of education touching on physical wellness as well as sex education which promotes bodily health. As established from oral interviews *Khubita* is an essential aspect of Bukusu initiation and hence it is a continuous activity throughout the entire initiation process beginning with the ritual *likhoni* and ending with the final ceremony called *khukhwalukha*.

Immediately after circumcision, the initiates are withdrawn into a secluded place where they learn many things including social norms, responsibilities and duties of adulthood

and herbal medicine. According to Wanasii (O.I, 24.7.2013), two occasions are set aside for elaborate moral counseling. Firstly, there is counseling by the circumcisers (*Khubita khwe bakhebi*) which comes towards the end of the seclusion period. In this occasion, the circumcisers of the initiate, the parents and the maternal uncles meet the initiate in his secluded place and he is given a wide range of knowledge concerning how to behave as an adult and what is expected of him.

Sex education is given prominence as well at this stage. For instance, learners are taught on being faithful and practicing all the conjugal requirements appropriately. Although sex education carries some important health practices related knowledge, the researcher observed that some of the learners normally become immoral due to the teaching that they can approach any unmarried female. This is explained in one of the popular saying that '*kumwikule kukwoo, kumwikale kwabene*" meaning an open door is yours and a closed one belongs to some one else. The open door simplifies unmarried female while the closed door symbolizes a married one.

Secondly, there is counseling when the initiate graduates to adulthood in a ceremony called *khukhwalukha* which literally means hatching out. It is used to refer to the process of moving from one stage of life (childhood) to another (adulthood). This occasion provides formal setting for extensive all round education but with moral education being given prominence. Through this education, some health aspects of life such as keeping body hygiene, avoiding risky behaviors and working hard which is important for both physical fitness and production of food are given to the initiate. This is done by members present in the ceremony that normally includes family members, relatives, friends and neighbours of the initiate's family.

From the foregoing analysis and discussions, it is evident that the male initiation process is one of the methods used in propagation of indigenous knowledge including health practices knowledge. Through its distinct stages namely preparation for initiation, cut of the foreskin and education to the initiate, the initiate receives important health related knowledge such as physical activity through hard work encouragements and avoidance of risk taking behaviors through the moral education that he receives throughout the process. Through the treatment of wound after circumcision, the initiate also learns on

herbs that cure wounds and general management of the wound through observation of hygiene. As a method of education, Bukusu male initiation therefore promotes observance and propagation of health practices.

4.4.2 Apprenticeship

Apprenticeship as a method of education among the Babukusu was established to be used particularly in midwifery, traditional herbal medicine, rain making and circumcision training (KNA, DC/EN 1/1). These are processes that require keen mastering of the art or process and they therefore required the trainee to live or work closely with the expert until he or she was perfect to carry out the process on his or her own. Khanjila (O.I, 19.7.2013) explained that in midwifery, a girl being trained to be a midwife requires to stay with the expert midwife full time since the development of interest to study the practice. Due to this requirement, midwives normally came from a family lineage since one could mostly only stay with relatives. A girl could start by doing simple chores such as assembling the tools for midwifery and with time, she learnt other advanced skills.

On the other hand, Chikati (O.I, 12.8.2013) explained that in traditional herbal medicine, one could train his or her children bit by bit. One could start with common herbs for common illnesses before moving to complex ones. It is said that full knowledge of the practice was given out by the specialist when he or she was just about to die and as a result of this, much knowledge was lost. For traditional circumcision, a trainee was expected to have been born by that calling of being a circumciser commonly called *kumusambwa kwe bukhebi* which is characterised by involuntary trembling upon hearing of a final circumcision song *sioyayisio*. Upon realizing this inborn calling, one could be attached to an expert circumciser for some years (normally two to six) before being allowed to circumcise on his own.

Apprenticeship as method contributed to the well being of the community since it ensured that sensitive practices that involve lives of people were not subject to trial and error. For instance, for one to practice midwifery which involves the life of both the mother and the unborn, then one was to be effective. One did not only need to be fully trained but needed also to have shown the ability to carry out midwifery. This was the

case with circumcision which if improperly carried out could lead to death or amputation of the reproductive organs. In traditional circumcision process, one needed to have shown the ability and competence to carry out the process just like in midwifery. Huge fines were normally given to those who messed with the process of initiation. For herbal medicine, one advanced in the practice with time which led to perfection. Therefore this mode of education ensured almost perfectness in sensitive health practices.

4.4.3 Use of Songs

An important genre of oral literature that is used as a medium of education among the Babukusu is use of songs. As established from oral interviews and longtime observations, there is a wide variety of songs some of which are sang from day to day by people, others sang during special events and others that are ritualistic and not sang except when required in official functions. One thing established to be common among the traditional songs of the Bukusu is that apart from their primary role they serve in a given event, they also carry educative message with them which can be knowledge like history of something or how to perform a skill like cooking and even values. Another common thing with Bukusu traditional songs is that most of them are accompanied by dancing. The dancing ranges from simple movements of body parts to vigorous movements such as jumping. Dancing is an important health related aspect since it promotes physical fitness of the body.

As established by the researcher, Bukusu songs are classified into several categories depending on what they are used for. These categories includes songs of circumcision, songs of remembrance of the living dead, songs of war, songs of work, wedding songs, birth songs, and babysitting songs also called lullabies. It was established from oral interviews that in one way or the other, at least these songs have some contributory functions to health practices.

Circumcision songs are songs that are sang during the entire circumcision period and ceremony. These songs are sung from the process of *khulanga* up to the time of *khukhwalukha*. They normally carry a lot of educative messages ranging from history of the community, moral teachings, rebuking of evil such a witch craft, selfishness, pride and dishonesty. They also teach about the physical environment such as trees and their

importance, rivers and even animals and the hunting skills. These songs might also be praising to the heroes hence encouraging others to emulate the same. For instance, one of the respondents when asked to give an example of a song sang the following song: "*oooh khasieno, oooh khasieno, khasieno khamala bantu, oooh khasieno, onywa kamechi ke nyungu yoo, oooh khasieno, lekhana nende bueyi, oooh khasieno*……."

This song as interpreted by the researcher using the *etic* approach is warning people against the deadly disease, AIDS, symbolically referred to as '*Khasieno'* in the song. The song further informs the listeners that they should 'drink water from their own well' meaning that they should not be involved in extra marital sexual affairs. This song, just like many other songs found to be sang among the Bukusu promotes observance of health seeking behaviors.

Death songs comprise of a wide range of songs that are sung during mourning of one's death and songs sung by men in remembrance of an elderly respected person in a ceremony called '*khukhala kimikoye'*. They not only carry with them wise massages that are educative to people but they also soothe and comfort the bereaved hence promoting healing. Soothing and comforting of the bereaved is an important health practice aspect as it prevents extreme emotional processes such as depression that are harmful to health. Chikati (O.I, 12.8.2013) explained that one of the ways used by people to overcome the pain of being bereaved was singing. This was confirmed by observation in one of the burial ceremonies in which women (when overwhelmed by emotions) broke into chanting as they walked around.

Lullabies on the other hand are songs that are sang in order to soothe the babies to sleep. This in itself is an important health aspect since it has been shown that good sound sleep for babies is an important process that promotes proper body and mind development in early childhood (Stickgold, 2013). Apart from this health significant aspect of soothing the babies to sleep, lullabies also carry educative messages to baby sitters that teach them on baby caring. This role of lullabies is closely related to that of birth songs. At birth of a child especially when a mother gives birth to twins, birth songs are sung at the end of the customary house confinement to congratulate her and encourage as well as guide her to care for the child appropriately.

The other categories of songs are work songs which are sang during work and they encourage the workers to continue with work, and teach the importance of hard work like physical fitness and meeting the needs of the individual, family and the community as a whole. Wedding songs on the other hand are educative to the bride and the brides groom on how to treat the partner and how to behave as a husband or wife while singing games are songs sung by children while dramatizing and they get to learn some of the adult roles through this.

Based on the fore mentioned analysis and discussions, it is evident that use of songs as a method of educating does not only promote observance of health practices through its content but is an important feature of health to the singer as well as the listener. This is through dancing that promotes physical wellness as well as through soothing that promotes emotional stability as well as sufficient rest to babies.

4.4.4 Proverbs and Riddles

It was established from oral interviews that in traditional Bukusu community, proverbs are used as a mode of education to both the young and the old. According to Wachilonga (O.I, 15.7.2013) *Chisimo* (proverbs) are indirect methods of reminding, rebuking, warning and even praising. Proverbs and riddles could be used in gatherings or in one to one basis by individuals. According to Wakoli (1975), there are over a hundred proverbs among the Babukusu and several riddles. As established, apart from educative purpose, riddles were also used to test the memory and reasoning capacity of ones mind since they require thinking to interpret the riddle. For the purpose of this study, the researcher has identified a few proverbs and riddles that are related to health.

Proverbs related to health established from oral interviews include:
i) *Sie munda sisuta sie khumurwe* (what is contained in the stomach is what carries the one in the head). This is a proverb that encourages people to consume sufficient and quality food for proper functioning of the body since the head is considered the centre of all body activities. Specifically, the central message here is that despite the head being important in controlling many functions of the body, it will not function well if one is

hungry and therefore taking care of proper feeding is critical in ensuring all other bodily functions are not interrupted. Thus one must not stay hungry.

ii) *Sikhaya wanambwa silulu* (What the dog can't eat is bitter). This is used to inform people especially the young that when someone is told to avoid something considered bad, he or she should adhere to the call since such conclusion was arrived at on actually proving that it was bad. This is important in informing of the young to avoid risky behaviors and avoid prohibited foods.

iii) *Namukhokhome kafucha lisa* (the gecko spitted caterpillar). The use of this proverb is in close relation with the previous one above. It is used to inform people to avoid what is harmful to life.

iv) *Kamema kera emboko* (Too much standing killed the buffalo). This is used to encourage people to have sufficient rest in their day to day activities. One form of such rest is sitting down for sometime and this is an important aspect of health practices.

v) *Kamafuki ko omundu kali nga enyama ye emboko, Okinyola khusibumba wakilia nio wamanya buchamu mwayo* (human's blood is like buffaloes meat, whoever gets it ready and eats it is the one who knows its taste). This proverb is used to indicate how precious the human life is and therefore informs that activities that may be harmful to human life should be shunned away since its consequences are tough. This encourages people to involve themselves in healthy behaviors that enhance survival.

vi) *Omulayi akhuloba enjala ekhakhulia ta* (a good person denies you so that you may not die of hunger). This is used to encourage people to be hardworking. A good person will deny you something for free so that you also produce for yourself and avoid being dependent.

vii) *Omusale akhila omulebe, sisiakhaya omusale bubolo* (A friend is better than a relative, but what a friend cannot withstand is bad smell). This shows that foul smell caused majorly by rotting of things is unpleasant and should be controlled.

viii) *Sibi sienda lifumo* (the enemy of the stomach is a spear). This informs people to avoid situations that are harmful to the body.

Some of the riddles identified include:

i) *Kukwila aa ne kwinyokhela awo: kumurongoro* (It falls at one point and rejuvenate at another point: a tree)

ii) *Kuchila okhu ne kukobolela okhu: Namwifunde* (it goes with one route and returns with another route: bee),

iii) N*di nende enchu ekhalikho kumuliango ta: liki* (I have a house that has no door: egg) and

iv) *Tondo wafwa tondo wakobola: enombelo* (somebody unknown dies and resurrects: stem tuber). These riddles are used to enable the learners to learn of their environment.

4.4.5 Folktales

Another important genre of oral literature used as a method of indigenous education among the Bukusu that was identified from the oral interviews is use of folktales (*Chingano*). Acording to Namulundah (2011), a folktale is a story or legend that is passed down orally from one generation to the next and becomes part of a community's tradition. Findings of oral interviews showed that the Bukusu folktales serve a descriptive as well as prescriptive role. They mirror life by reflecting what people do, how they think, live and have lived as well as their aspirations. Folktales also reinforce the status quo by consistently depicting societal and cultural norms. Bukusu folktales offer a glimpse into the society's structural process as well as the social and material environment.

In traditional Bukusu community, stories were narrated in the evening after the children had had their supper. They ate early (around six o'clock) and thereafter, played games such as hide and seek. They eventually would retire into their grandmother's hut where sessions on storytelling, proverbs and riddles would take place (Wachilonga, Yaola, O.I, 2013).

There are three major classifications of folktales present among the Babukusu that include, trickster; historical, and origin folktales. According to Namulundah (2011), trickster folktales involve a breach of faith leading to dissolution of a relationship between parties. They are "thriller" folktales that depict human endurance and triumph

over ogres and the laws of nature. Examples of such narratives among the Bukusu includes '*Nyaranga* the Ironsmith' in which a man by the name Nyaranga uses his knowledge and skills of spear making to overcome the ogres menace. The other is the Story of '*Nasio*; and the *Ogres and the Infant'* in which a lady by the name Nasio tricks the ogres that they run away hence saving her child's life (K.I.E, 1987).

Historical folktales on the other hand inform about historical events the community has passed through including war, hunger and such related experiences indicating their effects and how they were overcome. Largely, men recount heroic legends and tribal myths, targeting younger boys and adult gatherings. These tales narrate the rise and/or fall of a personality, development of a practice or trace, and the genealogy of a lineage. Examples include the story of Maina wa Nalukale and Mango who symbolized the strength, dignity and courage of a group and Bukusu resistance to Colonial rule culminated in the bloodshed at Chetambe. This helps the learners to well suit on how to deal with issues that might emerge in life including health related issues.

Origin folktales on the other hand narrate the beginning of something including life, death, circumcision and even the prohibitions of food. This helped learners to value and appreciate the process in question such as life, circumcision and prohibitions of some foods. An example of this folktale is the story of a man called Mango who killed a huge snake and was later circumcised using a piece of rock which was the origin of circumcision. This tales helps the learners to answer the question 'why something?' hence appreciating the instructions imparted on them with knowledge that failure to observe may lead to a harmful consequence. This helps strengthen observation of health practice related instructions.

4.4.6 Medium of Work

Among the Babukusu learning of skills was majorly done through medium of work. Oral interviews showed that in this method, a learner would closely observe a skilled person when he or she performs the skill and try doing it. Correction from the skilled person and experience would lead to perfection in the skill. For instance, girls would learn on sweeping of the house, baby nursing, cooking and tilling land by doing it day in day out, from rampant mistakes to perfection. Boys on the other hand would learn on tilling the

land, hunting, fighting by doing it with time. A boy could also learn how to serve in the council of elders by accompanying his father to the meeting though not allowed contributing to the proceedings (Amutallah, O.I. 24.7.2013).

4.4.7 Inculcation of Fear

This is a mode of learning where learners are taught to avoid behaviors deemed as dangerous, harmful to health, offensive to others or forbidden by the community. In this case learners are taught to belief of a false consequence (usually frightening) on exhibition of the behavior. Examples among the Babukusu includes the belief inculcated to children that playing with glowing sticks from fire attracts snakes to the house. This is meant to discourage children to avoid situations that could lead to outbreak of fire since the huts were made of grass.

Another inculcation of fear to children identified from oral interviews is a belief taught that sitting on the grinding stone makes one to have jingle bells in his buttocks when he walks. This was for hygiene purposes since grinding stones were used in grinding grains for human consumption and therefore sitting on it would lead to deposition of dirt such as feaces that could lead to outbreak of diseases. People are also taught to belief that defecating in the house makes ancestors unhappy and could lead to punishment to the community. This was therefore normally cleansed with a sacrifice of an animal produced by the accused to appease the ancestors.

This method of education among the Bukusu contributes majorly to observance of healthy activities that could promote to wellness and reduction of illnesses or injury. This is because of the frightening consequences that learners are made to believe of hence leading to strict observance of the desired behavior.

4.5 How Indigenous Education Contributes to Health Practices among the Bukusu Community

One of the main objectives that this study sought to achieve was to establish how indigenous education among the Bukusu, through its content and pedagogy, contributes towards observance of health practices. In pursuit to establish the latter, the researcher asked the respondents a range of questions touching on three main categories of health

namely wellness, nutrition and herbal medicine as operationalised in this study. The questions were as itemized in appendix D and E.

Since health is considered part and parcel of life among the traditional Bukusu community, it was established that one of the main aims of educating people is to enable them live healthy lives in a healthy environment with proper utilization of the very environment in which they dwell. Indigenous education therefore contributes to health by promoting healthy practices through various ways such as the prior discussed methods of educating and specific knowledge and skills that are health related. Its contribution to various aspects of health practices including wellness, nutrition and disease prevention and management through herbal medicine as afore mentioned is discussed below.

4.5.1 Indigenous Education and Wellness

As stated earlier, wellness is a state of being well that means engaging in attitudes and behavior that enhance the quality of life and maximizing personal potential. Findings of the oral interviews showed that in traditional Bukusu community, health is not an isolated phenomenon but part of the whole socio-cultural fabric. The community views health as a state of physical, mental and social wellbeing as opposed to the concept of health as just the absence of diseases.

Health care is therefore taken to be a personal, family and community responsibility. All members of the family are empowered to maintain their health status. Everybody has an obligation to create an environment and develop individuals free from disease or infirmity and disabilities. This also includes proper development of all faculties of an individual. Factors that contribute to wellness through indigenous education that were established among the Babukusu are physical activity, disease prevention and control, management of common illnesses, avoidance of risky behaviors and proper ways of handling the dead until burial.

4.5.1.1 Physical Activity

As prior mentioned in the preceding section, physical activity through work and play was found to have received much emphasis in indigenous education among the Bukusu. From an early age of childhood, children would start learning through plays such as hide and

seek, simulation of families with boys taking roles of a father while girls would take the role of a mother. These plays usually involved physical activities such as running and carrying of objects which promoted physical fitness. At the age of about five, children would be involved in more muscular games such as mock fights, running, tag of war and jumping for girls. This promoted physical fitness as well.

Boys and girls would also learn through medium of work. Here, they learned by doing activities that required strain such as hunting which involves running, tilling of land, fetching of water and sweeping of huts and compounds. In Bukusu culture, it was established that idleness is considered a vice that ought to be shunned away. Young and old alike are taught to always be on their feet at the time of working not only for the purpose of increasing wealth but to attain body fitness as well. Normally, those who were found to be idlers could be embarrassed by composing songs about them that tell everyone that so and so hates work. Such rebuking songs were mainly sung at circumcision times.

As WHO (2002) observes, lack of physical exercise is one of the major causes of lifestyle diseases such as obesity and high blood pressure. Emphasis and observance of physical activity by Bukusu indigenous education therefore helped in elimination and minimization of such complexities in life. This could be the reason why lifestyle diseases which were almost absent in traditional communities are now increasing.

4.5.1.2 Disease Prevention and Control

Among the Babukusu, Illness is attributed to multiple causes with some clear causes such as environmental changes and some other unclear causes such as due to certain powers, forces or misfortunes depending on the beliefs of a given clan. In explaining the causes of illness, it was established that most informants were trying to point to the factors which reduce or remove illnesses altogether or to the conditions which must be present for a healthy situation to be maintained. This is likely to be the reason why in promoting disease prevention and control, health care providers promote wellness in clients who are both healthy and ill.

Among the efforts that are used in disease prevention as was mentioned in oral interviews, include individual and community activities that enhance healthy lifestyle, such as immunization against a disease by use of herbs; improving nutrition and physical fitness; preventing drug and alcohol abuse; restricting smoking and preventing accidents and injury in the home and work place.

Among the diseases that were immunized by use of herbs as compiled from oral interviews especially by herbalists are: dysentery (*Lukhenene*) was immunized with herbs from *kumulamalama* (Wild bauhinia) tree while whooping cough (*kufuba*) was immunized with herbs from *Lukhaye*, *wanjoya* and *lukenukenu* (stinging nettle) plants. Knowledge of such immunization was transmitted through indigenous education. Despite numerous efforts and training for people to adopt modern disease preventive measures, it was established from oral interviews that some people still observe traditional food and moral taboos as a way of preventing diseases.

Further, the researcher established that there is a group of diseases associated with curses passed down in families and clans. Such diseases are called *kimisambwa.* Victims of *kimisambwa* have behavioral maladjustment and can be mistaken for as lunatics or mentally ill persons. As one of the ritual experts explained, these diseases have no cure from the western medicines and are therefore treated traditionally by herbalists who posses prophetic powers to trace down the origin of the problem and healing is based mainly on the principles of faith healing (Mahuyo Wanjala, O.I, 28.7.2013). People are also taught about rituals and prayers at the family level which are performed to prevent diseases and other misfortunes believed to be social and spiritual in origin. This is done in a shrine called *namwiima* normally located in a homestead.

Another mode of disease control that was taught among the Bukusu community is isolation of patients. Sick people with transmittable diseases like leprosy (*emulo*) were secluded from others and given special meals with their special utensils which could not be used by anybody else and could be buried together with the person if he or she died in order to avoid transmission to other people as well as discard everything which was

related to the illness that was attributed to a curse. However, it was it was established that such a method is no longer used by majority of the people.

Hygiene is also one of the tools that were taught and used to prevent and control diseases. Both young and old were taught to avoid urinating or defecating near the compounds. Dinah Wanjala (O.I, 18.7.2013) explained that a child found to be doing contrary was often punished. Bed wetting was also discouraged among children while defecating in the house was considered as a bad omen. People were discouraged from sitting on food processing and preparation tools such as grinding stones, water pots and cooking pots. Calabashes which were used as utensils were kept clean and after washing, they could be kept near the fire place for drying. As established, this brings about sterilization.

Through observation of the circumcisers operations, it was established that tools that were used for circumcision and other purposes were always properly sterilized before they were used. This involved heating them in the fire for a very long period of time before use. Proper storage of tools through wrapping them in dry banana fibers and regular checking and cleaning to avoid rusting was also taught to avoid such related diseases as tetanus.

4.5.1.3 Management of Common Illnesses

People in traditional Bukusu community were taught on how to manage common diseases before seeking the services of an herbal medicine specialist when the illness persists or is complex. A compilation of data from various interview sources showed some of the diseases treated at home as follows. Stomach-aches were treated with herbs of *mbekoraisi* (Cassia), *kumusembe* (Abyssinia) and *Mwarobaine* (Neem tree). In case of a minor cut, excessive bleeding could be controlled by applying *Bimeselo* herbs on the cut. Other diseases like fungal skin diseases were also cured with *kumubenubenu* herbs. Malaria was treated with *nandabululwa* herbs. Snakebite antitodes were administered at home as well. A disease like measles (*liele*) is treated using soil from a termite hill and *liyuli* and *likonda* herbs while dysentery is treated by *kumalamalama* (Wild bauhinia), *kumusilamosi* and *kumubenubenu* herbs. Garlic and onions are also used daily because it

is believed they clean the blood and lower blood pressure. To treat diarrhea, chewing on guava shoots is recommended.

Moreover, this study established that there are traditional clothes worn by both men and women to correct certain diseases which modern medicine is not able to treat and cure. Clothes won by men to ward off disease are *ekutusi* (The royal robe), *esumbati, ekhorere, eng'ilisi, ekutwa* (royal hat), *lurware* (skin cloak), *enjabilila.* Those that are won by women include *engubo, lulware, ekhanela and siyula*. These clothes are normally accompanied by ornaments like metal rings around the ankle called *sirere*. The one won around the wrist is called *sirere sie kumukasa* and if one begets twins, he has to wear *sirere sikhwana* around the neck. Other ornaments that accompany these clothes are *butundi, angoso, lusimbi, siye lukhayo, chindekwe and luengele.*

The Bukusu believe that since twins are delicate, they should be protected by wearing certain sacred rings around selected joints of their bodies. These rings include *lunakwe, lichaabe, kumukobu, esimbo esitati, kumuyonjo* and *ekhendia.* Even though such traditional clothes and rings might not have scientific prove of healing, some of the oral informants seemed to believe that they actually protect and heal against some diseases. Therefore in Bukusu's own understanding (applying the *emic* approach), such practices are health practices.

4.5.1.4 Avoiding of Risk Taking Behaviors

Bukusu indigenous education shunned behaviors that could lead to risky consequences such as cause of accidents, transmission of diseases and impairment to the body. Respondents detailed how people were taught to avoid adultery, bestiality, homosexuality, drug abuse and even overeating (Chikati, Wachilonga, O.I, 2013). This was ensured by strict rules and stringent consequences in case someone was involved in such behaviors that were considered inhuman which could also have an impact on healthy lifestyle. A man found in another man's house with the latter's wife in the act of sexual intercourse could be punished by being made to pay a special fine called *silukhi.* The man is made to give his best milking cow and this is meant to embarrass him and therefore prevent repetition of the same. Such socially unaccepted behaviors were also

shunned away through targeted compilation and administration of songs that could discourage people from engaging in them and even rebuke those found to be involved in the unacceptable acts.

4.5.1.5 Death and Burial

From the field work, it emerged that death among the Babukusu community is seen as a bad omen. It is therefore taken seriously as something which has befallen a community. A ritual expert Simiyu Wabala (O.I, 16.7.2013) detailed that a person who dies a natural death like for a disease or due to aging is buried after three days especially in the evenings. Those who die because of witchcraft and sorcery are buried at night with charms while a child of about two weeks to three months old is buried immediately without any ritual performance. In cases where suicide is committed, neither rituals nor ceremonies are performed (*khubwaaba*).

Though it emerged that the duration which was taken for one to be buried depended on the status of the person, it was common that efforts were made to bury the corpse before it started rotting. For instance, a surviving spouse who has gone through the rite of *chinyinja* (traditional wedding) or *sitekho (*cooking process in her own house) was not buried until after four days. In case of the death of one of the twins leaving the other alive, an ox was killed and its hide cut in to half for wrapping the body. In case of death of a pregnant woman, midwives and medicine men were called to give her a medicine that would cause expulsion of the foetus. The child (death foetus) and the mother were buried separately.

Through attendance of a burial ceremony, the researcher observed that among the Babukusu, the dead are buried in graves that are dug on the burial day. While Sisungo (O.I, 15.7.2013) explained that in the past, it was women who dug graves to burry their fellow female on a mound in front of the house or any other spot to the right hand side of the living hut, it was observed that currently, men customarily dig graves for all the burials. All bodies were buried when wrapped thoroughly in ox hides so as to avoid too much direct contact with the corpse. It was established that whenever the dead took long to be buried some local herbs inform of powder were applied to the corpse for

preservation. However the informant rejected to disclose the herbs since it is special knowledge to him through which he earns his living.

From observations during fieldwork, it was established that burial ceremonies have undergone transformations with the changing times. Out of the five traditional burial ceremonies attended, there was none in which the dead were buried in skin hides. Even though traditional rituals were carried out in these ceremonies, the corpses were in modern coffins and some of the bodies had previously been preserved in the mortuary. These are likely to be transformations to adapt to changing times which is an effort of equilibrium as stipulated by the general systems theory.

Three days after the burial, shaving is done amongst the relatives of the deceased as a sign of repairing the dead to the living. Clansmen drive cattle, goats and sheep around the grave after the burial. The shaving of the hair is called *khubekana* or *kimikhalwa*. *Sisinini* (memorial ceremony) is done forty days after the burial. For elderly men, there is a ceremony after four years called *khukhala kimikoye* where clan's men go for cattle herding at a place far from home.

4.5.2 Indigenous Education and Nutrition

One of the health practices acquired through indigenous education that was established from fieldwork among the traditional Bukusu is proper nutrition. It emerged that food is believed to be for health in terms of provision of energy, to facilitate growth, cure and to prevent illnesses. The Bukusu diet is traditionally healthy because their basic staples are vegetables, fruits, and cereals. Food is thought to be a vital component of life and this is the reason why one of the moral education that learners are given is to be generous in sharing of food and on how to treat visitors which includes provision of food to them.

It further emerged that people are also taught that anyone coming to offer services of any nature at your place whether for pay or not must be provided with food. More so, if somebody had been send as a messenger either to relative or any other person with bad news such as that of death, the messenger was not to give the information until he had been prepared something to eat because it was believed that the bad news will cause confusion making the messenger to suffer of hunger.

The researcher established that in the day to day life among the Bukusu, there are songs, proverbs and even sentiments that inform the importance of proper nutrition. For instance, one of the proverbs used often is '*sie munda sisuta sie khumurwe.'* This literally means that 'what is in the stomach carries what is in the head'. It is used to challenge those who might be working for long without taking food or those who are not struggling to produce food that without food, the body cannot function since the head is the controller of all body activities (Mahuyo, O.I, 28.7.2013).

In order to better understand the interaction between the Bukusu indigenous education and nutrition, the findings of this study are presented under three sub-themes, namely: food consumed; food preservation and storage; and traditional drinks and their significance. Each of these sub-themes are presented and analyzed below.

4.5.2.1 Food consumed

Food consumed in traditional Bukusu community is a cultural culinary expression of the indigenous Bukusu. Although the environment plays a part in determining this culinary pattern the cultural practices play the major function in determining the food taken and the pattern in which it is taken. The traditional foods consumed and therefore taught to be good to other generations through indigenous education include the following categories: cereals, vegetables, animal products, fish, insects and insect products, mushrooms and plants and plant products.

4.5.2.1.1 Cereals

Traditional cereals among the Babukusu includes Finger millet (*Buloo*) and Sorghum (*Kamaemba*). Finger millet, sorghum and cassava were grown by the Bukusu from time immemorial with knowledge and skills for their growth and production being passed on from generation to generation through indigenous education. The elders and old women interviewed indicated that bananas and *sim sim* were being grown at the time Europeans passed through the area. Nowadays, because of the changing lifestyles, maize is extensively used as a dietary staple. In most areas of Bungoma County especially the northern part (*Ebunaswa*) maize has taken over both as a subsistence and cash crop. Ugali (from finger millet or maize) is eaten everyday by Babukusu because it is believed to provide energy.

Cereals which have high content of carbohydrates and fibers (FAO, 2013) were being taken to provide energy to the consumers. This is indicated with the norm of serving cereals and cereals products such as Ugali after tough manual labour such as after digging and long distance walks. Finger millet Ugali was also being fed to newly circumcised youths and expectant mothers. Besides simple starches, cereals are rich in complex carbohydrates, dietary fiber, beta carotene (a vitamin A equivalent nutrient), vitamin C, and vitamin B_6. Pink, yellow and green varieties of cereals are high in carotene, the precursor of vitamin A hence they play a major role in attaining a balanced diet.

4.5.2.1.2 Vegetables

Among the Babukusu, cooked food is accompanied (as was the case in the past) with various vegetables as relishes majorly from plant origins. Vegetables form a major component of the diet with young girls being taught from an early age on how to till and care for a vegetable garden. Girls are taught that a mother who does not have her own vegetables' garden is irresponsible mother who cannot be cherished by her own husband (Dinah Wanjala, O.I, 18.7.2013). Girls are also taught in harvesting of the vegetables, preparation and even proper cooking. Table 2 provides a summary of common vegetables consumed traditionally in Bukusu community providing the local Bukusu name, English name and the respective scientific name for each of the mentioned species.

Table 2

Common Traditional Bukusu Vegetables

Local name (Bukusu)	**English name**	**Botanical name**
Litoto	Amaranth	*Amaranthus hybridus*
Sikhubi	Cowpeas	*Vigna lividus.*
Lisiebebe	Pumpkin leaves	*Cucurbita* sp.
Namasaka	Black night shade	*Solanum nigrum*
Kimiro	Sun hemp	*Crotalaria brevidens*
Murere	Jute plant	*Corchorus olitorius*
Emboka	Pig weed	*Amaranthus* sp.
Chisaka	Spider plant	*Gynandropsis gynandra*
Sarati	Wild cabbage	*Brassica oleracea*
Endelema	Malabar spinach	*Basella alba*
Lifwafwa	-	*Commelina bhenqalensis*
Makoe	Black jack	*Bidens pilosa*
Khafululu	Red-flower ragleaf	*Crassocephalum crepidiodes*

Source: Nekesa & Meso, (1995) and oral interviews

The information in the above table indicates that apart from local cultivated vegetables, there is wide variety of wild vegetables present and consumed among the Bukusu. Local cultivated vegetables include *Sikhubi* (Cowpeas), *Kimiro* (Sun hemp), *Murere* (Bush Okra), C*hisaka* (Spider herb), *Litoto* (Amaranth), *Lisiebebe* (pumpkin leaves) and *Namasaka* (black night shade*)*. Others which are not included in the table are *Nderema, Esufwa, Chibalayo,Chikhanu* and *Kamaganda.* On the other hand, local wild vegetables include *Sarati* (wild cabbage), Emboka (Pig weed), *Makoe* (Black jack), *Khafululu* (Red-flower ragleaf) and *Lifwafwa.* These vegetables are said to have high nutritional value ranging from vitamins, proteins, mineral ions and fibers (FAO, 2013).

4.5.2.1.3 Fruits

The researcher established from field work that people in Bukusu traditional community were taught to eat fruits whenever available with the belief that they treated illnesses and promoted growth. This is partially true since most fruits contain vitamins that are important ingredients for boosting of the body's immune system. Some fruits contain oils as well that are important components to the body's health. Eating of fruits was not programmed as eating of staple foods. Fruits could be eaten any time like in the wild during hunting, in the farm and in the homes whenever available be it at meals' time or any other time. This promoted high consumption of fruits which made people to be strong and not vulnerable to most diseases.

Table 3 provides a summary of some of the traditional fruits consumed in Bukusu community providing the local Bukusu name, the English name and the corresponding scientific name for each fruit species.

Table 3

Common Traditional fruits among the Bukusu

Local Name	**English name**	**Scientific name**
Bukararambi	Rasberry	*Rupus apetalis*
Burobela	Wild grape	*Lannea edulis*
Burwa	Wild grape	*Carissa edulis*
Busangura	Desert date	*Rhus Nataliensis*
Busemwa	Water berry	*Syzygium guineense*
Busongolomwa	Shaggy fruited dovyalis	*Dovyalis macrocalyx*
Busitole	Tamarind	*Tamarindus indica*
Bufutu	Black plum	*Vitex doniana*
Bunyungululwe	Indian plum	*Flacourtia indica*
Chinduli chimbukusu	False sandalwood	*Xemenia americana*
Chimbunwe	Golden berry	*Physalis peruviana*
Kamachabungwe	Rubber vine	*Saba comerensis*
Kamafwora	Wild custard apple	*Annona senegalensis*
Kamatore	Bananas	*Musa* sp
Kamapera	Quavers	*Psidium* sp.
Lipopai	Pawpaw	*Carica papaya*

Source: Oral interviews

The information in the table indicates that the traditional Bukusu fruits comprised of a wide category of fruits including nuts, plums, berries, grapes, apples as well as vines. These provided varied sources of nutrients that promoted the health of the consumers.

4.5.2.1.4 Animals and Animal' Products

Animal products which are said to contain high protein and fat contents were consumed among the Bukusu traditional community. Young men and women were taught on how to obtain, prepare and even consume such animal products. These includes meat from *emboko (*buffallo*), ekhafu(*cow*), embusi* (goat), *likhese (*sheep*), emuma, enchofu (*elephant*), enduyu (*squirrel*),* egesi and *ekhisi(*hare*)*. Such meat was usually dried by putting it near the fire place for about a week and even more before being cooked for consumption. Preparation involved cooking with *kumunyu kumukhelekha* (strained liquid,

percolated from certain ashes and used as salt or a spice). This is important to health as it reduces the amount of cholesterol and fat content in the meat.

Fresh blood (*kamalasile*) and clotted blood (*chingoliongo*) from animals especially a cow was consumed as well (Makokha, O.I, 27.4.2013). People could be taught on fetching of blood from an animal when it was being slaughtered and this was consumed while it was still raw and fresh. Animals were also often speared shallowly (*khuchala kamalasile*) at the base of the neck in order to fetch blood and the animal would later be treated to recover. *Chingoliongo* clots were obtained by stirring fresh blood vigorously and continuously with a special type of stick until it clotted.

Young girls and mothers were also taught to milk cows and goats and also given skills on milk fermentation and making of butter and cheese out of it. Bull's testis which has high protein and fats content was also consumed after castration of a bull. Knowledge on animal products for consumption therefore involved knowledge on meat consumption, milk processing and consumption as well as blood tapping, processing and consumption. These products boost the body's health through their high protein contents.

4.5.2.1.5 Birds and Their Eggs

Just like meat from animals, meat was also obtained from *engokho* (chicken), *Likhanga* (Guineafowl), *liusi* (doves), *libata* (ducks) and other small birds like *tietie*, *esefu*, *nakholo* and *namususuni*. Young boys were taught at the tender age on bird's names and about which birds were edible. At the age of about five, boys could start hunting for birds and develop skills of killing birds using stones. They were taught on which eggs of birds were edible and how such eggs could be prepared before consumption. The love for bird especially chicken famously called *engokho* among the Babukusu and even other Luhya communities has continued up to date. People are trained to honour guests with Ugali and chicken stew. Knowledge of consumption of birds and their eggs was a boost to protein sources in the nutrition of the Bukusu. Knowledge of which wild birds to eat and which ones not to eat contributed to control of zoonosis.

4.5.2.1.6 Fish

Though fish is not a common food in the traditional Bukusu community partly due to lack of a lakes and fewer large rivers in the region, it was established that fish is

consumed by some population in the community. The most consumed type of fish is *Kumukoye* (mud fish) which is found in small rivers and swampy regions and *nambale* (tilapia) which is found in fairly large rivers. Fish farming is a recently introduced practice that has been absent in the traditional Bukusu community. Young boys were taught on skill of capturing fish that included application of concoction of herbs to immobilize the fish which could then be handpicked (Sisungo, O.I, 15.7.2013). They were given knowledge of which herbs to use. Other methods included use of fishing lines, use of spears and manual hitting of fish to immobilize it. Girls were taught on preparation of fish which was mainly consumed as stew with Ugali. Fish consumption improved the nutrition of the Bukusu due to its high protein content and cord liver oil that has a role in early mental development of children.

4.5.2.1.7 Insects and Insects' Products

Some insects are highly cherished by both the young and old alike among the Babukusu. At an early age, young ones are taught on which insects to eat and which ones to avoid. As somebody grows, he or she is taught on methods of capturing insects in large numbers and on methods of preparing such insect for consumption as food. Among the insects that were found to be popular among the Babukusu are *chiswa* (termites), *kamatete* (grasshoppers) and *chisike* (Locusts). These insects are believed to promote body growth and this is correct since they contain proteins and fats that are essential for body growth (FAO, 2013).

While locusts are no longer common due to unavailability, the researcher observed that termites and grasshoppers are still largely consumed by both the young and the old alike. The most commonly eaten termite species are the large *Macrotermes* species called *Kamabuli* among the Bukusu. These winged termites emerge after the first rains fall at the end of the dry season, from holes near termite nests. Among the Bukusu, locals beat the ground around termite hills (simulating heavy rain) to provoke the termites to emerge. The edible grasshopper (*Ruspolia differens*), is a long-horned grasshopper. It is a common food source especially among the children in the Bukusu community. Traditionally, grasshoppers are gathered during the day from the grasses.

According to FAO (2013), eating of insects promises to reduce world hunger and boost health by reducing malnutrition. Grasshoppers, ants and termites offer high quality proteins when compared to meat and fish particularly for undernourished children. As at now, two billion people worldwide supplement their diets with insects like beetles, caterpillars, bees, wasps, ants, grasshoppers, locusts, crickets, cicadas, leaf and plant hoppers, sale insects, true bugs, termites and dragonflies (FAO, 2013). Insects contain 'good fats' rich in calcium, copper, iron, magnesium, manganese, phosphorus, selenium and zinc. Insects are also a source of fiber. Therefore, eating of insects is one of the health practices that need to be borrowed even by the contemporary society to boost their diet.

4.5.2.1.8 Mushrooms

Wild mushrooms were found to constitute important food supplements for local populations among the Bukusu even up to the present. Children are taught on collecting of mushrooms while girls as well as young women are taught on preparation of mushrooms for consumption. One of the emphasis that is given by the elderly to the children is to be able to differentiate between edible mushrooms and inedible ones some of which are usually poisonous. Mushrooms consumed among the Bukusu includes Mushroom species found growing on termite nests (*bumekela), bubwalama* and *bubwoba buwanga* (white mushroom). Children are also taught on storage of mushrooms for use during the cold dry season when they are not available. Consumption of mushrooms is important to health since mushrooms contain high level of proteins and most mushrooms have been found to have medicinal value.

4.5.2.1.9 Plants and Plant Products

Among the plants and plant parts that were found to be consumed among the traditional Bukusu community are cassava (*Kimioko*), sweet potatoes (*Kamapwoni*), bananas (*Kamatore*), pumpkin (*liondo*), Sugar cane (*Kumwiba*), Ginger (*kumusi*) and pepper (*pilipili*). Due to a large variety of these food products, there is provision of a wide range on nutrients that enhanced nutrition. This group of foods contains a wide range of foods that have high content of sugar hence providing energy to the body such as sugar cane, sweet potatoes, and cassava. The sweet potato (*Ipomoea batatas*) has large, starchy,

sweet-tasting, tuberous roots. The young leaves and shoots are sometimes eaten as greens. Others are rich in proteins such as yam and bananas while others are rich in vitamins such as ginger and pepper. It was established that children in Bukusu community were given knowledge on cultivation of such food materials that included the season of planting, tilling and harvesting. They were also educated on which parts of the land were suitable for growth of different plants.

4.5.2.2 Food Preservation and Storage

In Bukusu indigenous education both boys and girls were taught on methods of food preservation and storage that included both short term and long term storage. While Chikati (12.8.2013), Makokha (24.7.2013) and Webi (22.7.2013) explained that boys were trained in long-term storage of farm produce while girls were taught in short time storage of mostly perishable foods, the researcher observed that presently even women are involved in long-term storage of farm produce.

Long-term storage of food involved storage of farm products such as maize, finger millet, sorghum and cassava in a traditionally made store called *sisiaki*. Boys therefore learnt on construction of such stores in a way that could not subject the food stored under threat of decay. Food crops were normally dried properly by sun before they were stored in the *sisiaki*.

On the other hand, short-term storage of food was employed for perishable food products such as vegetables, meat, fish and termites. Girls were taught on use of drying method of preservation by either sun or fire which was used for preservation of certain vegetables such as *Sikhubi* (cowpeas), *Kimiro* (Sun hemp), *chisaka* (spider herb), and *litoto* (Amaranth). Foods like meat could be dried in the sun and/or fire then stored in the pot for as long as it was needed without rotting. Meat and fish was also preserved by cutting it into thin strips and drying by fire (*khusika*) while insects like grasshoppers and termites were dried by smoking. Some other green leaves were pounded and stored as powder (Khalaba, O.I, 22.7.2013).

Traditional methods of food preservation form one of the important health practices in Bukusu indigenous education since they were based on making the particular food item

less liable for bacterial attack and subsequent decomposition as well as a survival strategy to ensure availability of food throughout the year. This not only ensured minimization of illnesses as a result of food poisoning but ensured supply of food hence proper feeding throughout the year. Methods of preparation depended on the length for which the food is stored and also upon the type of food.

Food preservation and storage as taught through indigenous education among the Babukusu can therefore be seen as a survival strategy. Preservation is done in times of abundance so that in times of need, the preserved food can be used for feeding the family. At times, preservation is done as a short time measure, while other times, it is done as measure for improving flavor. For instance, storage of milk in a quad until it fermented was to improve the flavor of milk. Charcoal powder obtained from a tree called *lusangula* (Desert date) was added to fermented milk, to enhance flavor further and also increase preservation. Milk was left in the gourd for two to three days before being used.

4.5.2.3 Traditional Drinks and Their Significance to Health

Traditional drinks that were found among the Bukusu include porridge, tea, coffee and beer. While most of these drinks are non-intoxicating and have nutritional benefits, beer which is intoxicating is the most common traditional drink that is consumed among the traditional Bukusu community. Beer is prepared from finger millet, sorghum, bananas or maize. However, because of the prominence that maize currently receives in the area, it is increasingly becoming a major ingredient in beer preparation. Due to intoxicating effects beer plays a negative part to healthy living. There are two types of beer namely *endali*/*busaa* which is just fermented flour using yeast and this one has less defects to health. The other type is *chang'aa* (ethanol) that is prepared by distilling *busaa*. This has been found to be harmful to the body especially when in higher concentrations as it causes such diseases as liver cirrhosis. However, in Bukusu culture, children were taught to avoid alcohol until they could come of age (Khalaba, O.I, 22.7.2013). Excess consumption of alcohol was also discouraged through various cultural forums.

4.5.3 Indigenous Education and Traditional Herbal Medicine

One of the health practices of Bukusu community that is promoted and propagated through indigenous education is the healing system. Among the Babukusu, healing is

based on various ways such as use of traditional medicinal herbs, faith or spiritual healing, and change of lifestyles such as eating and working habits. Oral interviews and observations showed that traditional healing is an amalgamation of use of herbs, bone setting, midwifery and enhancement of lifestyles as well as esoteric practices such as faith or spiritual healing. The common aim of all these types of healing has been to treat various illnesses afflicting people as well as livestock.

Among the Bukusu, there are many folk beliefs about the causes of illnesses. Oral interviews showed that certain illnesses are believed to have a natural origin such as over eating, poor diet, excessive drinking, infections, and accidents. Some, illnesses are thought to be caused by spiritual and moral imbalances. Evil spirits caused by thoughts against the dead are also believed to be the origin of some diseases. Certain persons with extraordinary powers are thought to be able to cast spells which cause illness. These persons are *balosi* (witch sorcerers). Additionally, a person may become ill if someone casts "the evil eye" upon them. Persons suffering from afflictions caused by *bikumba* or "the evil eye" can be cured by a spiritual healer, or an herbalist.

Among all the different types of healing systems that have existed among the Bukusu, use of traditional herbs is the most popular form of healing that has persisted to the present. Disease control and management using traditional herbs is done either at home by family members for common illnesses and injuries or by a traditional herbal medicine expert (both men and women) called *omusilikhi*. These men are normally known and recognised by the community since the dissemination of this knowledge is normally within a family lineage but herbalists interviewed explained that until recently, the ministry of health has been registering traditional herbalists who have been holding seminars to coordinate their knowhow and enhance their ethics as there are quacks mushrooming and advertising their capabilities on huge signboards usually in market places.

As found from one of the herbalists, Mary Barasa, (O.I, 10.8.2013), among the complicated operation that was performed by traditional herbalists was a surgical incision in the rib region (*khukhwara bibiaro*) which was done to cure certain chest infections such as *kumuyaka* (pneumonia). This method of treatment is closely related to Chinese'

acupuncture method (Xue and O'Brien, 2003) since the incision in the ribs could stimulate the immune system fighting off the infections. This was only done once in a lifetime to a person. Among the people interviewed, those who had undergone the operation held that they have never experienced chest problems since the time of operations which is tens of years back. Natural implements such as sticks and stones were sometimes used to help penetrate and soften the muscle or to stimulate certain reflexes.

It was also established that herbalists used various types of herbs in treating the sick. As observed, the herbs are normally a mixture of a few or several plant materials such as leaves, barks, roots and fruits. Administering of an herb depends on the type of illness which will also determine the composition of the herbs. Medicine men are normally rich in herbal information knowing hundreds of herbs and what they can treat. Although herbalists keep their herbal knowledge as a secret and only pass it to people of their choice, there are various common herbs which are known to immunize as well as cure certain diseases.

The following Table 4 summarizes the herbs and the diseases they treat as compiled from the oral interviews.

Table 4

Some of the Medicinal Herbs in Traditional Bukusu Community

Local Name	English Name	Scientific Name	Disease Cured
Kumusiola	Nile Tulip tree	*Markhamia lutea*	Ear pain in humans and Eye problems in cattle
Kumukhuyu	Elgon olive	*Olea capensis*	Stomach-ache and Peptic ulcers
Endulandula	Sodom apple	*Solanum incanum*	Stomach-ache
Mwarobaini	Neem tree	*Azadirachta indica*	Fever, aches, pains, Malaria attack, Insect bites, Pest control.
Kumusangura	Desert date	*Rhus natalensis*	Skin infections, influenza, colds, abdominal pain, gonorrhea, and Worms.
Bimeselo	Dwarf Aspilia	*Aspilia pluriseta*	Stopping bleeding in wounds and Drippy nose in poultry
Kumukikhili	Moringa tree	*Cordia Africana*	Migraines
Kumulamalama	Wild bauhinia	*Piliostigma thonningii*	Dysentry
Kumuibeli	Peacock flower	*Albizia gummifera*	S.T.Is and Stomach-ache
Kumusembe	Abyssinia	*Entada abyssinica*	Stomach-ache
Mbekoraisi	Cassia	*Senna Siamea*	Stomach-ache

Source: Oral Interviews

The information in the table shows that herbs used for immunization include: herbs from *kumulamalama* (Wild bauhinia) tree which are used to immunize against dysentery (*Lukhenene*); herbs from *Lukhaye*, *wanjoya* and *lukenukenu* trees are used to immunize against whooping cough (*kufuba*).

Illnesses that were treated using herbs include stomach-ache that is treated with herbs of *mbekoraisi* (Cassia), *lantana* (*Lantana camara*) and Mwarobaini (Neem tree). In case of a minor cut, excessive bleeding is controlled by applying *Bimeselo* herbs on the cut. Other diseases like fungal skin diseases were also cured with *kumubenubenu* herbs. Malaria is treated with *nandabulwa* herbs. Measles (*liele*) is treated using soil from a termite hill and *liyuli* and *likonda* herbs. Dysentery is treated by *kumalamalama*, *kumusilamosi* and *kumubenubenu* herbs. Garlic and onions are believed to clean the

blood and lower blood pressure. Diarrhea is treated by guava shoots. Apart from the human diseases treated as established from oral interviews, Wanzala *et al*, (2012) has shown that livestock diseases such as the east coast fever (ECF), rinderpest, foot and mouth disease and hoof rot were also treated by use of herbs.

4.6 Relevance of Indigenous Education as Practiced by the Bukusu Community to the Current Health Promotion Efforts

Having established the various contributions that indigenous education made to health practices and to health in general, the final objective of the study was to establish the relevance of such knowledge as well as such contributions to the current health related efforts. In pursuit of this, the researcher employed the use of observation schedule and oral interviews to establish whether some of these traditional health practices are still observed and whether indigenous education still plays a role in health practices. In addition to data collected from oral interviews, the researcher used information from available literature concerning the current health problems and current health related efforts in order to determine whether indigenous education through its content and methodology as established among the Bukusu could be of any value to solving such health problems and boosting such health related efforts.

In oral interviews, one of the items was asking the informants to give their opinion on whether traditional health practices are still observed as in the past. Table 5 below provides frequency of respondents' response and their respective percentages.

Table 5

Respondents' Response on Whether Traditional Health Practices are Still Observed as in the Past

Respondents' Response	**Frequency**	**%**
YES	10	24
NO	24	57
TO SOME EXTENT	5	12
NOT SURE	3	7
TOTAL	42	100

Figures of the above table indicate that majority of the informants (57%) said that health practices are actually not observed as they were in the past. The reason that was cited by most of them was modernisation and people relying more on modern methods of healthcare.

The other item in the interview schedule required the informants to give their opinion on whether indigenous education is still relevant with regard to health practices. Table 6 below provides the frequency of the respondents' response and the corresponding percentages.

Table 6

Respondents' Response on Whether Indigenous Education is Still Relevant with Regard to Health Practices

Respondents' Response	**Frequency**	**%**
YES	34	81
NO	6	14
NO OPINION	2	5
TOTAL	42	100

The figures in the table indicate that majority of the respondents (81%) said that yes, indigenous education very relevant while only a few of those interviewed (14%) were of the opinion that it is not relevant.

The two tables above show a variation between the observance and relevance of indigenous education with regard to health practices where only 24% of respondents said health practices as propagated through indigenous education are still practiced against 81% who said health practices as propagated through indigenous education is still relevant. This difference could be attributed to modernisation and modernisation campaigns in which people are encouraged or compelled by circumstances to adopt modern methods and approaches of health.

Many of the people interviewed reiterated that modern health practices that include disease prevention, management and treatment are superior to the traditional methods in many aspects. However a good number still observed that regardless of this superiority fact, traditional health practices as promoted and propagated through indigenous education is still a needed aspect in promoting proper health. Most of the respondents advocated for incorporation of both methods of health practices to enhance health. It was also observed that many people still used traditional remedies in dealing with health related problems. Most people were seen administering treatment of common diseases such as malaria, typhoid and ringworms infection by use of traditional herbs. Details of oral interviews and observation, indicates that indigenous education as well as some of the traditional health practices are aspects that are necessary and therefore relevant in modern health related efforts.

Comparison of current health related efforts and health practices aspects in Bukusu indigenous education shows some coherence. For instance, today, there is progress in fighting of what were common diseases in developing countries such as malaria, polio and measles yet, there is still an increasing challenge of lifestyle diseases such as obesity, heart attack and high blood pressure. The WHO (2002) report shows that these diseases have been increasing in the recent past while their cases were minimal in the traditional era. As this study has shown, this could be as a result of proper lifestyles that propagated healthy individuals under the indigenous education system. Such lifestyles include feeding on healthy foods like vegetables, cereals, and fruits that have minimal defects to the body, proper physical activity to the body through work and play, avoidance of risky behaviors such as immorality and drug abuse through strict moral norms of the society as well proper treatment through herbal medication.

Taking one aspect of health practice, feeding on insects, which was promoted and propagated through Bukusu indigenous education, it is clear that this traditional practice could be of great benefit if implemented by the contemporary society. This is evidenced by the recent FAO report titled as; *Edible insects: Future prospects for food and feed security* (FAO, 2013) in which there was detailed importance of insect eating to health such as benefits of ‘good fats’ rich in calcium, copper, iron, magnesium, manganese,

phosphorus, selenium and zinc. The report further showed that presently, two billion people worldwide supplement their diets with insects like beetles, caterpillars, bees, wasps, ants, grasshoppers, locusts, crickets, cicadas, leaf and plant hoppers, sale insects, true bugs, termites and dragonflies (FAO, 2013). Therefore, this aspect of health through feeding on insects in Bukusu indigenous education is a practice that is required by the contemporary society hence relevant.

With reference to the aspect of promotion and propagation of herbal medication knowledge through indigenous education, there have been efforts by different entities such as KEFRI, NMK, and KEMRI in Kenya on indigenous knowledge concerning uses and conservation of useful indigenous herbs and plants. The entities have been focusing on traditional medicinal plants, commonly referred to as alternative medicine (Ronoh *et al*, 2011) with a view to enhancing use and effectiveness of such traditional medicine. This is evident that promotion and propagation of traditional knowledge on herbal medicine is an aspect that is still required by the contemporary society.

Based on the fore mentioned analysis and discussions of responses and observations from field work as well as comparison of the current health promotion strategies and health practices as promoted and propagated in indigenous education, it is clear that indigenous education as practiced by the Bukusu community is relevant to the contemporary society. This is due to a large number who still resort to use of knowledge and skills of indigenous education to solve their problems like health related problems. This is also due to the fact that most of the health promotion efforts such as good feeding habits, physical activity of the body and use of some of the herbal remedies are features which were and still are in Bukusu indigenous education.

Achieving desired healthcare to the people as envisioned in various forums such as the millennium development goals and Kenya's vision 2030 requires implementation of various health strategies to complement the failures of the other provided the strategies are not antagonistic. It is therefore imperative to note that incorporation and preservation of some of the traditional knowledge and skills propagated through indigenous education is relevant. The use of both traditional and modern approaches to health can aid in

accelerating the process of creating a healthy population. Today and in the future, cultures have the human rights to have their cultural values, beliefs, and needs respected, understood, and appropriately used within any caring or curing process.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This study sought to establish contributions of indigenous education to health practices among the Bukusu Community of Bungoma County of Kenya. It specifically looked at the health practices embedded in indigenous education, factors that determined the content of indigenous education particularly in health practices, ways through which health practices are propagated to individuals in indigenous education and how such ways contributes to health, how indigenous education contributes to health practices and the relevance of indigenous education as practiced by the Bukusu community of Bungoma County of Kenya to the current health promotion efforts. This chapter therefore provides a summary of this study, the conclusions drawn and the recommendations made thereof.

5.1 Summary

This study involved establishment of contributions of indigenous education to health practices among the Bukusu community. It involved interview of forty two individuals from the Bukusu community who are well versed with the Bukusu culture. The study also involved research from libraries and KNA about the Bukusu culture that forms the basis of Bukusu indigenous education. Among the people interviewed were the council of elders, religious and ritual experts, traditional circumcisers, traditional midwives, traditional herbalists and other significant elderly persons. The following are the key findings of the study:

i. Health related content provided in indigenous education among the Babukusu include training in physical education, sanitation habits, work training, nutrition habits and child rearing.

ii. Knowledge, Skills and Values that were found to be taught among the Bukusu have existed since time immemorial. It is education that was created by forefathers and has been being passed from generation to generation despite the fact that it has been undergoing some modifications from time to time due to changing times and situations.

iii. Bukusu indigenous education used both formal and informal ways of educating people. The formal ways includes education through initiation and apprenticeship. The informal methods included use of songs, proverbs and riddles, folktales, medium of work and inculcation of fear. All these methods carried a contributory factor to health practices.

iv. The Bukusu culture and practices that are transmitted through indigenous education contributed to health practices by promoting wellness, proper nutrition and effective disease control and management through herbal medication. Wellness was promoted through ensuring proper physical fitness through play and work while proper nutrition was promoted through dissemination of knowledge of effective cultivation and utilization of nutritious foods. Herbal medicine knowledge was not decentralized but most people had the knowledge of how to treat common illnesses.

v. Most people still use both traditional and modern knowledge and skills in solving immediate problems. Indigenous education as propagated by the traditional Bukusu community is relevant to the contemporary society.

5.2 Conclusions

Based on findings of this study and subsequent analysis, the following conclusions are made:

i. Indigenous education offers enormous contribution to health practices in the traditional Bukusu community.

ii. Education in Bukusu traditional community a response towards a given situation or event in the community. Education was therefore one of the ways of ensuring smooth continuity of the community through disseminating of ways of proper utilization of the environment and ways of overcoming the challenges in the very environment.

iii. The formal and informal methods that were used for educating people were effective at their time and they contributed towards instilling of health practices.

This ways contributed to observance of health practice through reminding like use of proverbs and riddles, use songs and use of inculcation of fear.

iv. Bukusu indigenous education through its content and methodology taught people on maintaining of wellness through physical activity and medium of work as well as through ensuring proper nutrition.

v. Today, most Bukusu people are still practicing traditional health practices no matter how advanced our health system. Indigenous education as practiced by the Bukusu community is therefore relevant to the contemporary society.

5.3 Recommendations

Since health problems are still present in large numbers in the present world, both in indigenous communities who are still observing traditional lifestyles and even in developed communities with modern lifestyles and modern health facilities, it is paramount to incorporate both the traditional methods of health practices and modern ones. Although some of the traditional methods of health are actually detrimental to health, most of the other methods are good and therefore based on the findings of this study, the researcher recommends as follows:

i. The modern society should be educated and encouraged by all the stakeholders in health sector to involve into physical activities such as manual work, as opposed to light office works all through which is an experience of most people.

ii. People can be taught on how to diagnose, manage and treat common diseases like malaria as was the case in indigenous education among the Bukusu since still most people cannot afford to seek medical treatment due to high levels of poverty.

iii. Public health campaigns and even policies to the extreme can be carried out to promote consumption of traditional foods such as vegetables, fruits and insects apart from the modern foods that are advertised on media frequently. Since some of these traditional foods are at the risk of extinction, more research on preservation of traditional foods can be done and farms of traditional foods set up in every region considering the variations of the communities.

iv. Since knowledge and skills of traditional herbal medicine and even traditional methods of healthcare is in the hands of few traditional experts, most of the knowledge is likely to get distinct. Therefore, efforts should be carried out by health agencies to recognize these experts and encourage them to train more others or devise better way of transmitting such knowledge to others. As suggested by Lee (2009), unlocking such knowledge from the monopoly of a few to the wider population through an "accelerated" social construction as a process such as through sustained public awareness campaigns, storytelling or role plays, should thus be encouraged because such indigenous knowledge also has a potential for boosting economic empowerment of the local people through the sale of intellectual property rights or social capital. This may be leveraged further to boost conservation of such habitats from which medicinal plants are sourced, such as forests.

v. Our current education system should incorporate health practices training as was the case with indigenous education since health is part and parcel of life. Learners can be taught on best ways of keeping fitness, proper nutrition and on managing some common illnesses in and out of school.

5.4 Areas of Further Research

This study proposes that further study should be done on the following areas:

i) Contributions of indigenous education on safety among the traditional Bukusu community.

ii) Relationships and differences in how indigenous education contributed to health practices among different communities.

iii) Value analysis of traditional foods and modern foods.

REFERENCES

Ajayi, J.F.A., Goma, L.K.H. & Johnson, G.A. (1996). *The African Experience with Higher Education*. London: James Currey.

Alembi, E. (2000). *Elijah Masinde: Rebel with a cause*. Nairobi, Kenya: Sasa Sema Publications Ltd.

AlIand, A. (1977). Medical Anthropology and the Study of Biological and Cultural Evolution. *Culture, Disease and Healing: Studies in Medical Anthropology* 41-47.D. Landy, ed.New York: MacMillan Publishing Co.

AlIand, A. (*1970). Adaptation in Cultural Evolution: An Approach to Medical Anthropology*. New York: Columbia University Press.

Astin J.A. (2006). Breast cancer patients' perspectives on and use of complementary and alternative medicine. *Breast Cancer Foundation, 4*, 157- 169.

Axtell, J. (1979). Ethnohistory: An Historian's Viewpoint. *Ethnohistory 26*(11), 3-4.

Babbie, E. (1996). *The practice of Social research*. Belmont, California: Wadworth Publishing Company.

Baker, T.L. (1994). *Doing Social Research* (2nd ed.). New York: McGraw Hill Inc.

Barasa, K.J.N. & Onkware K. (2010). The Influence of Islam on Bukusu Indigenous Beliefs and Practices Relating to Inheritance, Kenya. *International Journal of Sociology and Anthropology*, *2*(7), 155-161.

Bernard, H.R. (2000). *Social research methods*. Thousand Oaks, CA: Sage.

Berman, E.H. (1975). *African Reactions to Missionary Education*. New York: Teachers College Press.

Boateng, F. (1983). African Traditional Education: A Method in Disseminating Cultural Values. *Journal of Black Studies, 3,* 321-336.

Buckley, W. (1967). *Sociology and Modern Systems Theory.* London: Prentice Hall.

Busia, K.A. (1964). *Purposeful Education for Africa*. London: Mouton.

Cassidy, C. (1998). Chinese Medicine Use in the United States. Part 1: Utilization, Satisfaction, Medical Plurality. *Journal of Alternative and Complementary Medicine*, *4*(1), 17–27.

Castelo-Branco, C. (2006). Age at menopause in Latin America. *Menopause.13*, 706–712.

Cocks, M. & Dold, A. (2000). The Role of "African Chemists" in the Health Care System of the Eastern Cape province of South Africa. *Social Science & Medicine 51*, 1505-1515.

Commonwealth Knowledge Network (2003). *Workshop Communique on Providing Herbal Education at the Grass Root Level: Updating the Knowledge of Herbal Medicine Practitioners in Aiyedade Local Government Area of Osun State, 30th October – 1st November 2001* http://www.commonwealthknowledge.net/documents/Seyani/Aiyedaad-CKN%20Workshop%20Report.pdf (17 April 2003)

Cross, N. & Barker, R. (1991). A*t the Desert's Edge: Oral Histories from the Sahel.* PANOS/ SOS SAHEL

Crouch, M. & McKenzie, H. (2006). The Logic of Small Samples in Interview Based Qualitative Research. *Social Science Information*, *45*(4), 483-499.

Cui R. (2006). Relationships of Age at Menarche and Menopause, and Reproductive Year with Mortality from Cardiovascular Disease in Japanese Postmenopausal Women. *The JACC Study*, *16*, 177–184.

Dept of Health NHS R&D Programme (2006). *A study of the Use of Complementary and Alternative Therapies among People Undergoing Cancer Treatment: A Qualitative and Quantitative Study*. London: Dept of Health.

De Wolf, J.J. (1977). *Differentiation and Integration in Western Kenya: A study of Religious Innovations and Social Change among the Babukusu*. Paris, Mentone: The Hague.

Fafunwa, A.B. (1974*). A History of Education in Nigeria.* London: George Allen & Unwin.

Fafunwa, A.B. & Aisiku, J.U. (Eds.) (1982). *Education in Africa: A Comparative Survey*. London: George Allen & Unwin.

FAO (2013). *Food and Agricultural Organisation Report. Edible insects: Future prospects for food and feed security*. Rome: FAO

FAO (2004). Report of the Second International Workshop and Steering Committee Meeting, Globally-imp. Indigenous Agricultural Heritage Systems GIAHs. Project –June 7-9. Rome, Italy. Online from. ftp.fao.org/agll/ginhs/reportsc2.giahs-04/005.pdf.

FAO (1998). *The State of the World's Plant Genetic Resources for Food and Agriculture*. Rome: FAO

FAO (2005). Forest Resources Assesment: 1990 Global Synthesis. *FAO Forestry Paper 124*. Rome. FAO

Gall, M. & Borg, R. (2003). *Educational research: An introduction*. New York: Pearson Education.

Gay, L. & Airasian, P. (2003). *Educational Research: Competencies for Analysis and Applications*. New Jersey, Ohio: Macmillan Publishing Company.

Giddens, A. (1987). *Social Theory and Modern Sociolog*y. Stanford: Standard University Press.

Gordon, T. (1978). Menopause and Coronary Heart Disease. *The Framingham Study. Ann Intern Med, 89*, 157–161.

Gorman, C. (1992). The Power of Potions. *Time, April 20*, 52 – 53.

Gracey, M. (2009). *Unity of First People of Australia.* Australia: Perth.

Gratus, C. (2009). The use of Herbal Medicines by People with Cancer: A Qualitative Study. *Complement Altern Med*. *14*, 9-14.

Hino, A. & Camozzi, A. (1996). Adult Environmental Education: A Handbook on the Context and Methods. *Journal of Adult Education and Development, IIZ/DVV* (47), 21-43.

House of Lords Science and Technology Committee (2000). *Sixth Report (1999-2000).* London: The Stationery Office (TSO).

Itibari, M.Z. (2006). Critical Indigenous African Education Knowledge. *The Journal of Pan African Studies, Amen-Ra theological Seminary, Los Angeles, 1*(3), 32-47.

Jacobsen, B.K., Heuch, I. & Kvale, G. (2004). Age at Natural Menopause and Stroke Mortality: Cohort Study with 3561 Stroke Deaths During 37-year Follow-up. *Stroke, 35*, 1548-1551.

Kenya National Bureau of Statistics, KNBS. (2010). *2009 Population and Housing Census Results*. Nairobi, Kenya: Government Printers.

Kenyatta, J. (1965). *Facing Mount Kenya*. New York: Vintage Books.

K.I.E. (1987). *Chingano Chefue, Sitabu sie Khuranga.* Nairobi: K.L.B

Kokwaro, J.O. (1976). *Medicinal Plants of East Africa*. Nairobi: East Africa Literature Bureau.

Kongolo, T. (2001). Towards a More Balanced Coexistence of Traditional Knowledge and Pharmaceuticals Protection in Africa. *Journal of World Trade*, *35*(2): 349-361.

Kottak, C.P. (2002). *Cultural Anthropology*. Boston: McGraw Hill.

Lebakeng, T.J. (2010). Discourse on Indigenous Knowledge Systems, Sustainable Socio-economic Development and the Challenge of the Academy in Africa. *CODESRIA Bulletin*, 1 &2, 24-29.

Lebakeng, T.J. (2004). Towards a relevant Higher Education Epistemology. *Towards an African identity of higher education*. Pretoria: Vista University and Skotaville Media.

Lee, Y. (2009). Indigenous knowledge construction and experimental learning of Taiwanese aborigines. *Intern. Ed. Stud.* 2(2): 1–7.

Makila, F.E. (1978). *An Outline History of Babukusu of Western Kenya.* Nairobi, Kenya: Kenya Literature Bureau.

Makokha K.T. (1993). *Relationship between Morality and Religion: A Case of Bukusu of Western Kenya*. M.A. Thesis: Kenyatta University.

Mara, J.K. (2006). The Virtues and Challenges of Traditional African Education. *Journal of Pan African Studies, 1* (4), 15-24.

Mazrui, A.A. (1978). *Political Values and the Educated Class in Africa.* Berkeley, CA: University of California Press.

Mohamed, S. (1992). Pastoralists and Planners: Local Knowledge and Resource Management. *Grazing Reserve, Northern Nigeria*. *IIED* (32), 30-35.

Morse, J.M. (1994). Designing funded qualitative research. In K. D. Norman & S.L. Yvonna (Eds.), *Handbook of qualitative research* (2nd ed., pp.220-35). Thousand Oaks, CA: Sage.

Moumouni, A. (1968). *Education in Africa*. NY: Praeger.

Mulenkei, L. (1998). 'African Indigenous Women and Biodiversity Conservation' in A.V. Achterburg (ed), *Out of the Shadows: the first African Indigenous Women's Conference.*

Mungazi, D.A. (1996). *The Mind of Black Africa*. London: Praeger.

Namibia (2002). *National Report to the Conference of the Parties on the Implementation of the Convention on Biological Diversity in Namibia*. Windhoek: Ministry of Environment and Tourism.

Namulundah F. (2011). *The Bukusu of Kenya: Folktales, Culture and Social Identities*.USA: Carolina Academic Press

Nekesa, P. and Meso, B. (1995).*Traditional African vegetables in Kenya: production, marketing and utilization.* Nairobi, Kenya: Organic Matter Management Network.

Ocitti, J.P. (1973). *African Indigenous Education as Practiced by the Acholi of Uganda*. Nairobi: East African Literature Bureau.

Odinga, O. (1967). *Not Yet Uhuru.* Nairobi: Heinemann.

Ohiokpehai, O. and Ramosweu, P. (1999). The Role of Agricultural Processing and Nutrition in Improving Food Security at Household Level. In Proceedings of Post Harvest Conference Held October 6-8, 1998, Sebele, Botswana.

Osei, G.K. (1970). *The African Philosophy of Life*. London: The African Publication Society.

Osogo, J. (1966*). A history of the Abaluhya*. London: Oxford University Press.

Parkash, R. (2007). *Historical Research in Education*. New Delhi: Common Wealth Publishers

Plaetse, B.V., Hlatiwayo, G., Eygen L.V., Meessen, B. and Criel, B. (2012). Cost and revenue of health care in a rural Zimbabwe district. *Health Pol. & Plann. 20*(4): 243–251.

Ritzer, G. (1992). *Contemporary Sociological Theory* (3rd ed.). London: McGraw-Hill incl.

Ronoh, T.K. (2000). *A History of Colonial Education among the Kipsigis of Kenya, C. 1895- 1963.* M.A. Thesis: Egerton University.

Ronoh, T.K., Ogola, F.O., Makori, G., and Miumukha, C.K. (2011). Influence of Ogiek's Indigenous Apprenticeship Education of Herbal Medicine and Cosmological related Belief Systems on Sustainable Environmental Conservation of the Mau Forest, Kenya. *World Indigenous Nations Higher Education Consortium Journal*, 57-75.

Scanlon, D.G. (1964). *Traditional Education in Africa*. New York: Colombia University.

Sifuna, D.N. (1990). *Development of Education in Africa: The Kenyan Experience*. Nairobi: Initiatives Publishers Ltd.

Sifuna, D.N. and Otiende, J.E. (1994). *An introductory History of Education* (Revised Edition). Nairobi: Nairobi University Press.

Simmons, W. S. (1988). Culture Theory in Contemporary Ethnohistory. *Ethnohistory 35* (1), 10.

Singer, M. (1989). The Limitations of Medical Ecology: The Concepts of Adaptation in the Context of Social Stratification and Social Transformation. *Medical Anthropology 10*, 223-234.

Sternfeld, B. (2005). Menopause, Physical Activity, and Body Composition/ Fat Distribution in Midlife Women. *Med Sci Sports Exerc*, *37*, 1195–1202.

Stickgold, R. (2013). Early to Bed: How Sleep Benefits Children. *Trends in Cognitive Sciences*, *17*(6), 261-262.

Tedla, E. (1995). *Sankofa: African Thought and Education*. New York: Peter Lang.

Toweet, T. (1979). *Oral Traditional History of the Kipsigis*. Nairobi: Kenya Literature Bureau.

UNESCO (2000). Education for All Global Monitoring Report. Paris: UNESCO.

UNESCO (1998). Promotion of Ethnobotany and the Sustainable Use of Plant Resources in Africa. *Terminal Report ,FIT/504-RAF*-(48), 60, Paris: UNESCO.

UNESCO (1996). Culture and Health. *Orientation Texts – World Decade for Cultural Development 1988 – 1997*, Document CLT/DEC/PRO, 129, Paris: UNESCO

UNDP-CSOPP (2000). *Guidelines for support to indigenous peoples II definitions.*

Unwuachi, P.C. (1972). *African identity and Black liberation*. Buffalo, NY: Black Academy Press.

Vickers, K.A., Jolly K.B. & Greenfield S.M. (2006). Herbal Medicine: Women's Views, Knowledge and Interactions with Doctors: A Qualitative Study. *Biomedical Complementary(BMC) and Alternative Medicines*, *6*, 40.

Wakoli, A. N. (1975). *Chiisimo Che Babukusu*. Nairobi: EAPH.

Walker, S. (1998). Health Interventions: A Focus for Applied Medical Anthropology Theory. *NEXUS 13*, 74-88

Wanzala W., Takken W., Mukabana W.R., Pala A.O., Hassanali A. (2012). Ethno knowledge of Bukusu community on livestock tick prevention and control in Bungoma district, western Kenya. *Journal of Ethnopharmacology, 140*(2), 298-324.

Were, G. S. (1967*). A History of the Abaluhya of Western Kenya, 1500-1930*. Nairobi: East African Publishing House.

Werneke, U. (2004). Potential Health Risks of Complementary Alternative Medicines in Cancer Patients. *British Journal of Cancer*, *90*, 408-413.

World Health Organisation (2012). *World Health Statistics Report 2012*. Geneva: WHO.

World Health Organisation (2002). *The World Health Organisation Report 2002: Reducing Risks, Promoting Healthy Life*. Geneva: WHO.

Wiley, A. (1992). Adaptation and the Biocultural Paradigm in Medical Anthropology: A Critical Review. *Medical Anthropology Quarterly, 6* (3), 216-236.

Willett, W. C. & Leibel, R. L. (2002). Dietary Fat Is Not a Major Determinant of Body Fat. *American Journal of Medicine, 113* (9B), 47–59.

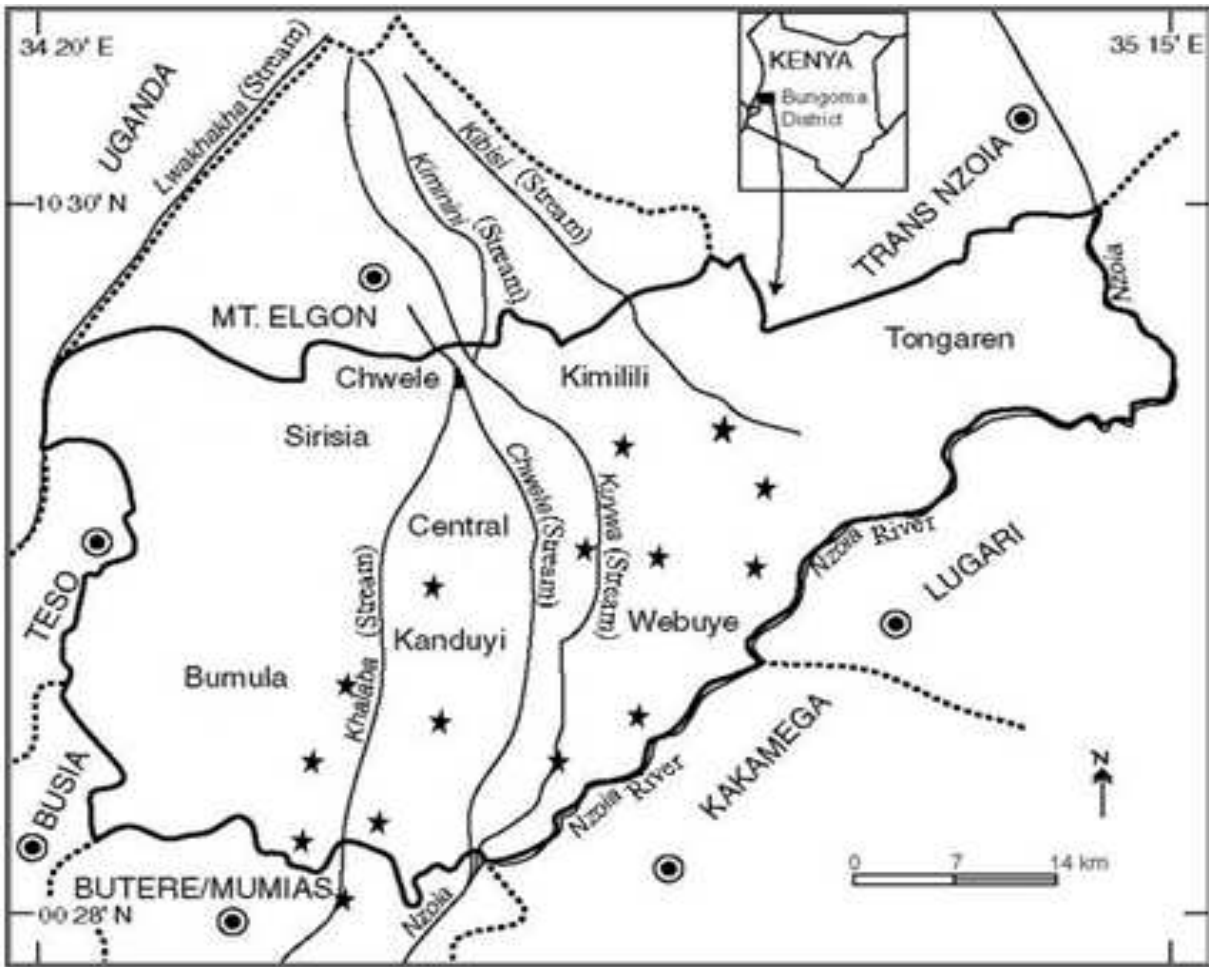
WIPO (2001). Intellectual Property Needs and Expectations of Traditional Knowledge Holders. *WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999).* Geneva, April 2001.

Xue C.C. & O'Brien, K.A. (2003). Modalities of Chinese Medicine. *A Comprehensive Guide to Chinese Medicine*. World Scientific Publishing Co.

Zimbabwe (1998). *"Interim" Report On Zimbabwe's Biodiversity Strategy and Action Plan (BSAP) Project: May - December, 1997*

APPENDIX A: MAP OF KENYA SHOWING THE AREA OF STUDY

The following is the map of Kenya showing the area of study



APPENDIX B: LIST OF INFORMANTS

NAME	AGE	PLACE OF INTERVIEW	DATE
Traditional herbalists			
Alfred Wachilonga	65	Bumula	13.8.2013
John Chikati	67	Kimilili	12.8.2013
Mary Barasa	62	Bahayi	10.8.2013
Peter Wabala	73	Kamukuywa	21.7.2013
Pius Wekesa	68	Kamasielo	16.7.2013
Violet Nabangi	78	Bituyu	20.7.2013
Wasike Wanyama	60	Nalondo	15.7.2013
Traditional circumcisers			
Antony Malaba	71	Naitiri	24.7.2013
Dennis Murongoro	66	Bituyu	27.7.2013
James Khalaba	66	Bokoli	22.7.2013
Kennedy Wanyonyi	60	Kamukuywa	29.7.2013
Patrick Wekesa	61	Chwele	27.7.2013
Peter Masibo	61	Kimilili	23.7.2013
Wanyonyi Wanasii	69	Kimilili	24.7.2013
Zaire Wanyonyi	82	Kibingei	26.7.2013
Religious experts			
James Mafumbo	68	Lutonyi	29.7.2013
Khisa Sitoo	76	Bituyu	28.7.2013
Simon Wambiya	68	Kamukuywa	02.8.2013
Paul Maraka	70	Kimilili	30.7.2013
Wanyonyi Sikolia	60	Bituyu	03.8.2013
Wilbrodah Wabala	69	Kapkateny	29.7.2013
Ritual experts			
Mahuyo Wanjala	64	Kibingei	28.7.2013
Michael Sisungo	65	Sirakaru	15.7.2013
Fred Wamukunji	65	Muchi	26.7.2013
Simiyu Wabala	73	Matungu	16.7.2013

Council of elders

David Amutallah	70	Matili	24.7.2013
Gabriel Makokha	70	Sitabicha	24.7.2013
Francis Siruchu	73	Naitiri	23.7.2013
James Wanyonyi	80	Kibingei	23.7.2013
John Webi	82	Lutonyi	22.7.2013
Wamalwa Wakwabubi	66	Lutacho	21.7.2013

Traditional midwives

Getrudah Wanyonyi	66	Kwiroro	19.7.2013
Joan Khanjila	65	Sitabicha	19.7.2013
Mactildah Wekunda	69	Milo	20.7.2013
Rose Wamalwa	76	Namutokholo	20.7.2013
Selina Wanyonyi	67	Kibingei	19.7.2013

Signicant others

Dinah Wanjala	64	Lwanda	18.7.2013
Ibrahim Lumbasi	81	Misikhu	17.7.2013
Ibrahim Wanjala	79	Kaptola	17.7.2013
James Yaola	65	Kapkateny	18.7.2013
Mourice Kweyu	75	Teremi	16.7.2013
Willys Wachilonga	72	Kibisi	15.7.2013

APPENDIX C: ARCHIVAL SOURCES

KNA, DC/EN 3/2/5: Political records ethnology. Notes on book circumcision, District Commissioners office, Bungoma, 1985

KNA, DC/EN 3/2/4: Letter by Office of Economic Advisor, British Government to District Commissioner, Elgon Nyanza: Dini ya Msambwa, 1985

KNA, DC/EN 1/4 Elgon Nyanza District Annual Report, 1959.

KNA, DC/EN 1/3 Elgon Nyanza District Annual Report, 1958.

KNA, DC/EN 1/2 Elgon Nyanza District Annual Report, 1957.

KNA, DC/EN 1/1Elgon Nyanza district Annual Report, 1956.

APPENDIX D: INTERVIEW SCHEDULE FOR GENERAL CULTURAL CONSULTANTS

Information to the Informant

The purpose of this study is to gather information that will establish the contributions of indigenous education to health practices among the Bukusu community of Kenya. Your assistance in providing information and sacrifice in terms of time will be useful and highly appreciated.

Interview summery sheet

Name of informant ----------

(Optional based on willingness of the informant)

Age ----------

Age Group----------

Place of Interview----------

Date(s) of Interview----------

Reference No. ----------

Time(s) ----------

A. Content in Indigenous Education with regard to Health Practices

1a) What kind of Education is given to the young ones in Indigenous Education among the Bukusu Community?

b) Is this Education geared towards enhancing specific aspects of life? Please explain and give examples.

c) Are there any aspects in indigenous education as practiced by the Bukusu that promotes health and well being of an individual? Please explain.

B. Factors that determine Content of the Indigenous Education

2a) Who were the creators of this knowledge (particularly health practice knowledge) that was passed on to others?

c) Does everyone learn everything that is provided or someone's age, clan, gender or any other attribute determine the kind of education he or she received? Please explain and give examples.

d) Was there anything that prompted a given knowledge or skill to be created and passed on? Please explain.

e) What other factors define the content of the education system that the learners go through?

C. Pedagogy of Indigenous Education

3a) What are the ways through which Indigenous Education was passed on to learners, especially the young ones?

b) Could you please explain how each of the ways above is conducted?

c) Do you think the kind of knowledge, skill or value to be learned determines the method used to learn? Please explain and give examples if any.

c) Which of the above ways of learning you have mentioned do you think is effective? Why do you think so?

4a) Are there any ways through which learners are evaluated on whether they had acquired the desired knowledge, skill or value? Please explain.

b) Have there been any kinds of recognition, incentives or rewards given to learners who excel in the kind of education provided? Please explain and give examples.

c) Are there any form of punishments or encouragements that are given to learners who do not excel in kind of education provided? Please explain and give examples.

d) Do you think the methods used help to improve learning? Please explain.

D. Indigenous Education and Health practices

i) Indigenous Education and Wellness

5a) Do people learn how to diagnose illnesses? Please explain and give examples.

b) Have there been common illnesses that are managed by individuals without seeking the help of a healer? If yes, how were these skills learned?

6a) What are the ways through which people learn how to prevent outbreak of diseases? Please explain.

b) How were the sick, especially those with transmittable diseases treated? Please explain and give examples.

7a) Are there any particular activities in the daily life that directly or indirectly contribute to the wellbeing of individuals? What are they and why do you think they promoted the well being of people.

b) Do learners contribute in any way to the well being of their colleagues? Please explain.

ii) Nutrition in Indigenous Education

5a) Is there any knowledge, skills and values that contributes proper food and diet to individuals?

b) Do you think such knowledge has been important to the wellbeing of individuals? Why do you think so?

c) Are there any feeding patterns amongst the traditional people? Explain?

d) Has there been anything in the day to day life that is directly or indirectly related to food and feeding? Explain.

iii) Traditional Herbal Medicine in Indigenous Education

6a) I understand that use of traditional herbal medicine is one of the methods used for treatment, how is this knowledge and skills of herbal medicine passed to others?

b) Is anyone allowed to acquire this herbal medicine knowledge?

c) Do you think people believe in this traditional herbal medicine as a remedy for diseases? What makes you think so?

d) Treatment is a very noble practice, is there any way the society ensures that the providers of these services do the right thing?

7a) Give me examples of situations in which herbal medicine is administered.

b) Do we have any values or belief systems that contribute to continuity of use of herbal medicine? Please explain and give examples.

E. Indigenous Education and Current Health Efforts.

8a) Do you think some of these health practices are still observed as they were? What is the effect of this?

b) Do you think the indigenous education with respect to enhancing health practices is still observed? Please explain.

9a) If you were to compare traditional Health practices and the current modern lifestyle, what will you comment?

b) Do you think traditional health practices can still be practiced and have any value amidst the current modernisation? Why do you think so?

APPENDIX E: INTERVIEW SCHEDULE FOR TRADITIONAL HEALTH PRACTITIONERS

Information to the Informant

The purpose of this study is to gather information that will establish the contribution of your knowledge, skills and values to the well being of the individuals through health practices. Your assistance in providing information and your sacrifice in terms of time will be useful and highly appreciated.

Interview summery sheet

Name of informant. ---------- Place of Interview----------

(Optional based on willingness of the informant)

Age Group----------

Traditional Health Occupation---------- Date(s) of Interview----------

Duration of the Practice---------- Reference No. ----------

Age ---------- Time(s) ----------

A. Content in Indigenous Education with regard to Health Practices

a) What kind of Education is given to the young ones in Indigenous Education among the Bukusu Community?
b) Where did you get the education of this Traditional health services that you provide?
c) Are there any skills or knowledge that you acquired through Indigenous education that is important in your current health services? Please explain.
d) Has this Education been geared towards enhancing specific aspects of life? Please explain and give examples.
e) Are there any aspects in indigenous education as practiced by the Bukusu that promotes health and well being of an individual? Please explain.

B. Factors that determine Content of the Indigenous Education

2a) Where do you think these knowledge and skills that are provided through Indigenous education originate from?

b) Who were the creators of this knowledge (particularly health practice knowledge) that is passed on to others?

c) Was there anything that prompted a given knowledge or skill to be created and passed on? Please explain.

d) What made you to learn this skill you have? Was everyone free and able to learn your skill?

e) Do you sometimes change or develop your knowledge and skills system or it is as you acquired it? Why is it so?

C. Pedagogy of Indigenous Education

3a) How long have you been in this traditional health practice?

b) How did you acquire the knowledge and skills you have?

c) How long did it take you to learn?

d) Have you trained any person in the knowledge, skills and values you have?

D. Indigenous Education and Health Practices

i) Indigenous Education and Wellness

4a) Do people learn how to diagnose illnesses in Bukusu Indigenous education? Please explain and give examples.

b) Are there common illnesses that can be managed by individuals without seeking the help of a healer? If yes, how were these skills learned?

5a) What are the ways through which people learn how to prevent outbreak of diseases? Please explain.

b) How are the sick, especially those with transmittable diseases treated? Please explain and give examples.

6a) In your traditional health practice, how do you ensure you control infection and transmission of diseases? Please explain.

b) Tell me about how you will treat the sick clients with transmittable diseases.

7) Are there any particular activities in the daily life that directly or indirectly contributed to the wellbeing of individuals? What are they and why do you think they promoted the well being of people.

b) Do learners contribute in any way to the well being of their colleagues? Please explain.

c) Is there any way you ensure that your clients have good physical and mental health as well as facilitate growth?

ii) Nutrition in Indigenous Education

8a) Do you think food and diet affects your clients?

b) Are there any specific foods and diet patterns that you prescribe to your clients?

c) Did you acquire any knowledge about food and diet? If so, how did you acquire it?

iii) Traditional Herbal Medicine in Indigenous Education

9a) How do Indigenous education promote traditional herbal medicine?

b) Is any one entitled to learning traditional herbal medicine practice?

c) Do you think herbal medicine is still effective in dealing with current health matters?

d) Do you think people still believe in it traditional herbal medicine?

e) Do you use traditional herbal medicine in your traditional health practice? If yes, how often do you administer it?

f) How effective is the traditional herbal medication that you administer?

g) In your own view, do you think we can do without traditional herbal medicine?

h) Do you have any values or belief systems that govern the use and ensure continuity of herbal medicine?

E. Indigenous Education and Current Health efforts

10a) Do you think some of these health practices are still observed as they were? What is the effect of this?

b) In your traditional health services, do you think you practice them fully as people in pre-colonial Kenya used to do? Please explain.

c) Do you think the indigenous education with respect to enhancing health practices is still observed? Please explain.

11a) If you were to compare your traditional Health services and the current parallel modern health services, what will you comment?

b) Do you think traditional health practices can still be practiced and have any value amidst the current modernisation? Why do you think so?

APPENDIX F: OBSERVATION SCHEDULE FOR TRADITIONAL HEALTH PRACTICES

The aims of the observation schedule were;

1. To identify the traditional health practices that are still practiced among the Bukusu.
2. To examine the operations of traditional health practitioners.

Table 7

Observation Schedule Table

Events	**Health practice to be observed**	**How the health practice is performed**
Burial Ceremonies	How is the hygiene of the handlers of the corpse kept?	Are the tools used traditional or modern?
Initiation ceremonies	Is there education to the initiate? How is hygiene observed in initiation process? How are the initiates treated?	How is the education/instruction conducted? Are the tools used traditional or modern? How is the nature of medication?
Herbalists operations	How are their general operations?	What is the nature of tools and materials used? What is the number of customers in a day? Are herbs used traditional or modern?
Circumcisers' operations	Are there rules and regulations? How is their general conduct during the initiation process?	Are the tools used traditional or modern? Do they use traditional herbs for treatment?

APPENDIX G: NATIONAL COUNCIL OF SCIENCE AND TECHNOLOGY REASEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/14/013/1220**

Date: **8th July 2013**

David Kavinje Chikati
Egerton University
P.O.Box 536-20115
Egerton.

RE: RESEARCH AUTHORIZATION

Following your application dated **3rd July, 2013** for authority to carry out research on "***Contribution of indigenous education to health practices: A case of Bukusu Community of Bungoma County, Kenya.***" I am pleased to inform you that you have been authorized to undertake research in **Bungoma County** for a period ending **31st December, 2013.**

You are advised to report to **the County Commissioner and County Director of Education, Bungoma County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The County Commissioner
The County Director of Education
Bungoma County.

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development".