

**ASSESSMENT OF FACTORS THAT INFLUENCE PATIENTS
UTILIZATION OF COMPLEMENTARY ALTERNATIVE MEDICINE AT
MATHARI NATIONAL & REFERRAL HOSPITAL, NAIROBI**

ISABELLA MIRIERI

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DECLARATION

I ISABELLA MIRIERI, declare that this research proposal is my own original work and has not been presented for a degree at any other University.

Isabella Mirieri, BScN (UEAB)

Signed..... Date.....

CERTIFICATE OF APPROVAL

This dissertation was submitted with our approval as supervisors:

Signed..... Date.....

Dr James Mwaura, PhD
Senior Lecturer, University of Nairobi
School of Nursing Sciences

Signed..... Date.....

Miriam C.A. Wagoro, RN, PhD
Clinical Mental Health & International Research Ethics Speciality and
Lecturer, School of Nursing Science
University of Nairobi.

DEDICATION

I dedicate the work to the patient who experience mental disorders and their families, mental health professionals and to my husband Peter O Kereri, sons Boaz, Daniel, and Job.

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ACRONYMS/ABBREVIATIONS

AACMA	Australian Acupuncture and Chinese Medicine Association
AAT	Animal Assisted Therapy
ADTA	American Dance Therapy Association
AIDS	Acquired Immune Deficiency Syndrome
AMREF	African medical Research and Education Foundation
CAM	Complementary and Alternative Medicine
JAMA	Journal of the America Medical Association
KMSA	Kenya Medical Supplies Agency
MDD	Major Depressive Disorder
NCCAM	National Center of Complementary and Alternative Medicine
NGO	Non-Governmental Organizations
NIH	National Institute of Health
OAM	Office of Alternative Medicine
SPSS	Statistical Package for the Social Sciences
TCM	Traditional Complementary Medicine
TM-CAM	Traditional Medicine and Complementary and alternative Medicine
UNESCO	United Nations Educational Scientific and Cultural Organization
WHO	World Health Organization

OPERATIONAL DEFINITION OF TERMS

Alternative medicine: in this study alternative medicine include herbs, exercise, diet, prayer, massage, chiropractic that are used outside the main stream medicine (conventional, allopathic, orthodox)

Complementary and Alternative Medicine (CAM): The use of various traditional methods in maintaining health other than conventional medicine and are used accordance to the culture, belief and custom of the individual.

Culture: In this context culture was identified as the way of life to a group of people who live in the same geographical ground. Characterized by the whole complex of distinctive spiritual, material, intellectual, emotional features and value systems traditions and beliefs in a society or social group.

Mental health: Mental health is the positive state of mental wellbeing. Mental health is associated with a positive thinking behaviour, discipline and psychosocial wellbeing.

People with mental disorders: are clients whose cognitive functions are impaired in making judgement, speech, an acceptable behaviour in the society.

Traditional Medicine (TM); Refers to knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different culture, used in the maintenance of health. Indicators of traditional medicine include; increased uptake, value of TM products used, increase in awareness/knowledge about TM, new research on TM products and customers, recognition and regulation about TM, advertisement TM.

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ABSTRACT

Background: Complementary alternative medicine refers to a wide range of practices which are grounded within cultural beliefs, experiences, religion and spirituality. The use and practice of Complementary alternative medicine has evolved over the years. Evidence especially from low-income developing countries indicate that there is a growing preference and use of CAM among patients with mental illness. There is limited information on utilization of CAM in mental health.

Purpose: The aim of this study was to assess the factors that influence patients with mental disorder in the utilization of complementary alternative medicine at Mathari Hospital Nairobi, Kenya.

Methodology: The study implored a descriptive cross sectional research design with mixed method (quantitative & qualitative). Systematic random sampling was used to select patient participants and purposeful sampling for the nurse managers. Data and measurement was done by use of a questionnaire for patients and a key in-depth interview for the nurse managers for a period of four weeks. Inclusion criteria for patients was adult 18-65years, a score of 24/30 on Mini Mental Status Examination. Quantitative data was edited, cleaned and entered into computer and analyzed using statistical Package of Social Sciences (SPSS) version 21. Qualitative data audio-taped, analyzed the information into relevant themes.

Results: We interviewed 187 patients and 5 mental health nurse managers. Participants (patients) were mostly male, aged between 18-48 years, Christians and half of them were married who at most attained some form of education. Out of 187 patients only 69.9(37.4%) utilized CAM. The common types of CAM utilized include; herbs 27(14.4%), exercise 15(8.0%), prayer 11(5.9%). Majority of the population utilized CAM due to their culture and belief although some respondents believed CAM was not effective. Regression analysis indicated that awareness of CAM was statistically significant with $p=0.001$ less than α of 0.05 at 95% confidence level. The observation from key informant interview was that nurses were aware of utilization of CAM through training in basic nursing school, personal experience and influence from external peers. However, CAM was being practiced at home, village and private hospital.

Conclusion: The study findings has revealed that awareness and understanding of CAM promotes utilization of complementary alternative medicine among consumers and practitioners.

Recommendation: A further studies are needed to determine factors that influence patient's utilization of complementary alternative medicine in mental health.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Complementary Alternative Medicine (CAM) comprises of knowledge, skills and practices based on the theories, beliefs and culture. The knowledge is passed from one generation to another for maintenance of health (WHO, 2001, 2005, 2012, 2014). Complementary alternative medicine include; biological, mind and body, alternative medicine, energy therapies and manipulative body based therapies.

According to Barnes & Powell-Griner (2004) the magnitude of CAM is evidenced by it's continued uptake of CAM both globally at 80% and 85% in Africa. Majority of the population continue to buy personal products all over including over the internet hence there is a global access to CAM products. This idea has provided an alternative means of promoting self-health as well as disease prevention which aims to reduce the cost of healthcare (Antwi-baffour, Bello, Adjei, Mahmood, & Ayeh-kumi, 2014). There is an upward trend of both chronic illness and health care cost in the health care system around the world which has necessitated the use of complementary alternative medicine (Barnes, Bloom, & Interview, 2008; WHO, 2014).

Researchers recommended the use of CAM in treatment of various illnesses including: substance abuse and alcoholism, attention deficit hyperactivity Brown & Patel (2005), Autism Spectrum (Wendy, 2014), insomnia (Bertisch, Wells, Smith, & Mccarthy, 2012) stress and anxiety (Sarris et al., 2012), depression (Medicine, 2010; Maher et al., 2015; America, 2016), schizophrenia (Thomas, 2016). Utilization of CAM is based on varied reasons as reported by studies; nutrition and lifestyle (Guidance, 2006), wellness (Dale et al., 2014), Some patients avoid use of conventional medicines because of the belief that chemicals have adverse implications on their body systems, but not because they are dissatisfied with conventional medicine (Astin, 1998).

Several challenges associated with the location and number of mental health institutions as observed by (Evans, 2004; Ali & Agyapong, 2016), inadequate psychiatrists and mental health nurses) (Lambert et al., 2011; Ndetei, Mbwayo, Mutiso, Khasakhala, 2013). Has contributed to the utilization of CAM, breaching the treatment gap and reducing the burden for mental disorders especially depression

which is seen as the second cause of disability by 2020 (Ministers, 2001; WHO, 2004; Votruba & Thornicroft, 2016; Mackenzie & Kesner, 2016;). A more worrying trend is that three quarters of the total population with mental disorders are mainly from low income countries as depicted by World Health Organization (WHO, 2014).

The practice on utilization of complementary alternative medicine as reported by many studies was either concomitant or complement conventional medicine especially comorbid with other conditions and prolonged illness. For example Bertisch et al., (2012) indicated that people use both relaxation and complementary alternative medicine in treatment of insomnia. Githinji (2014) observed that there was concomitant use of herbs with conventional medicine which causes lethal effects to body systems.

World health Organization (WHO) encourages member state countries to implement the policy on traditional medicine, promote and regulate the practice of traditional medicine practitioners. The organization also encourages a link between CAM practitioners, customers, healthcare professional and a system of referral of patients/clients with mental disorders from traditional practitioners to conventional health facilities and vice versa. However, this has not had a tremendous move because of diversified rules and regulation on CAM. Some countries have established rules and regulation of CAM products, practitioners like European countries (Amster A. Michael, Cogert Greg, Lie A. Desiree, 2001; Sita, 2011).

1.2 Problem Statement

Complementary alternative medicine is widely recognized and accepted by most communities for treatment of various diseases for the majority of the population, especially in developing countries (Stradford et al., 2014; Ali & Agyapong, 2016). It is estimated that more than 85% in developing countries and 80% globally utilize CAM (WHO, 2007, 2012). The medicine is reportedly affordable, accessible and available at the community level and requires less technique. Also there is limited information on the utilization of CAM among patients with mental disorders.

According to the WHO, (2014), strategies have been developed to promote utilization of CAM products, services and CAM practitioners. This includes; building knowledge base for active management of CAM, setting policies, strengthening quality

assurance, regulation of CAM products, therapies, CAM practitioners and promoting universal health coverage by integrating CAM service delivery and self-health care. However, these strategies have been partially implemented in Kenya and other countries (Ndetei, M. David, Khasakhala, incolin I; Kingori, Joyce; Oginga, Alan; Raja, 2007; Sita, 2010; Ndetei, Mbwaiyo, Mutiso, Khasakhala, 2013; Kigen, Ronoh, Kipkore, & Rotich, 2013).

The growing number of patients utilizing CAM is proposed to; availability of information on the internet, marketing forces, active involvement of patients with medical decision making, believe in the effectiveness of CAM. However, In spite of CAM being used, it has been viewed with a lot of questions by conventional health practitioners and the practice faces challenges. They include; inadequate information on CAM, recognition and registration of CAM products, therapies and CAM practitioners and quality assurance (WHO, 2007; WHO, 2014). It is for this reason that the need to assess the factors that influence the utilization of CAM among patients with mental disorders in Kenya to provide information on the utilization of CAM with clear and documented policies that will aid in showcasing the whole issue of CAM.

1.3 Justification

Utilization of CAM is alluded to its availability, accessibility and affordability. Complementary alternative medicine continue to promote, prevent, diagnose, treat and rehabilitate majority of the population with mental illness both local and globally (Gureje Oye. Nortje Gareth, Makanjuola Victor, Oladeji Bibilola, 2015; America, 2016). Inadequate health care professional and infrastructure are to provide quality care to patients with mental disorders (WHO, 2001; Stuttaford et al., 2014). An interview with senior hospital nurse administrator at Mathari Hospital, indicated that the nurses were not aware about CAM to enable them practice CAM and that CAM was not under their scope to practice and administration. Patients who use CAM do not adhere to conventional medicine and sometimes request discharge from the hospital to go home and continue utilizing CAM. With the majority of the people depending on CAM for their healthcare needs, this study comes in at the right time.

Considering that patient with mental disorders are poor, often discriminated and the illness associated with multifactorial causes it is suggested use of variety methods of

CAM to promote, prevent, diagnose and cure the mental diseases. The study findings provided important information for improving hospital, healthcare professional, caregiver and CAM practitioners for this group of population. Published study findings will create awareness and need for institutions to improve public opinion on the quality of care received to improve quality of life of patients. Finally the study findings will contribute to the body of knowledge on the use of CAM.

1.4 Broad Objective of the Study

The purpose of the study was to assess the factors that influence patient's utilization of CAM at Mathari Hospital.

1.5 Significance of the Study

This study revealed that awareness was statistically significant in the utilization of CAM by patients with mental disorders. The low level of information on CAM has prevented health care professional from sharing the information with patient to prevent concomitant use of CAM with conventional medicine which has lethal impacts such as drug reaction, liver and kidney failure. The study findings was used by Mathari Hospital and other healthcare institutions to generate policies that promoted the use of CAM on not only patients with mental illness but all patients. This information aided care givers and patients to make informed choices on utilization of CAM as an ideal alternative to prevention and cure of disease. The research was also significant to scholars and researchers in other higher learning institutions inside and outside Kenya who may have a basis for further research in this area.

1.6 Research Questions

The study was based on the following research questions:

- i. What is the relationship between the awareness of the CAM and utilization of CAM by patients in Mathari National Teaching and Referral Hospital?
- ii. What is the relationship between culture and the utilization of CAM by patients at Mathari National and Referral Hospital?
- iii. What is relationship between the Cost of CAM and utilization of CAM by Patients at the Mathari National and Referral Hospital?
- iv. What is the relationship between duration of illness and patient utilization of CAM in Mathari National Teaching and Referral Hospital?

1.7 Hypothesis

In order to answer these research questions, four research hypotheses (null hypothesis) were developed and tested in the study. These are:

1. Awareness of CAM has an effect on its use
2. Culture has an effect on the use of CAM
3. Cost of CAM has an effect on its use
4. Duration of illness has an effect on the use of CAM

1.8 Objectives

1. To establish the relationship between awareness of the existence of complementary alternative medicine (CAM) and utilization of CAM among patient with mental disorder at Mathari National Referral Hospital.
2. To determine the effect of culture on the patients' utilization of complementary alternative medicine (CAM) in Mathari Hospital.
3. To establish the effect of affordability of conventional medicine on the utilization of complementary alternative medicine by patients at Mathari Hospital.
4. To establish the effect of duration of mental illness of patients on utilization of complementary alternative medicine at Mathari hospital.

1.9 Assumption

In this study the researcher conducted a study in hospital based with patients having the same environment conducive for patients to participate in the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter was to provide a summary of the literature review that was conducted towards the study. It provides information on the previous research about utilization of complementary alternative medicine. The information is intended to provide information to the reader with insight on why it is necessary to conduct the current study.

2.2 Concept and Practice of Complementary Alternative Medicine

Complementary alternative medicine refers to various traditional methods in maintaining health other than conventional medicine and are used accordance to the culture, belief and custom of the individual. They include biological, mind and body, manipulative and body based methods, energy therapies and alternative medical system.

Many authors who hold a stand point that CAM is found to be safe in treatment of mental disorders (Shacham et al., 2008; Stradford, Lambert et al., 2011; Vickar, Berger, 2012; Ndetei, Mbwanyo, Mutiso, Khasakhala, 2013; Maher et al., 2015). It was observed by Freeman et al., (2010) that CAM were effective in treatment of mood depressive disorder. According to America, (2016), client with serious mental disorder and not responding well to standard treatments or unable to withstand the side effect may be considered to utilize CAM. While others feel that seeking care from CAM practitioners is not satisfying as compared to care from conventional practitioner (Schoonover et al., 2014).

The benefits of using CAM include the following: Curing of diseases which was the outstanding one as reported by (Eisenberg et al., 2014; Shim, 2016), People with mental disorders utilize CAM because of their personal desire or belief (Rickhi et al., 2003). To build immunity for patients with chronic disease such as AIDs (Karali, Saglam, Karali, & Kilic, 2011).

It has also been clearly indicated in the literature that most patients do not share the information about the use of CAM with their healthcare workers because they fear intimidation, rejection and mistreatment this is similar to a study in United States

(Astin, 1998; Barnes et al., 2008). However, In spite of CAM being used, it has been viewed with a lot of questions by conventional health practitioners and the practice faces challenges. They include; inadequate information on CAM, recognition and registration of CAM products, therapies and CAM practitioners. Examination of quality assurance (WHO, 2007; WHO, 2014).

2.3 Factors that Influence Utilization of Complementary Alternative Medicine

2.3.1 Awareness on Complementary Alternative Medicine

Awareness is the state of knowing, understanding, perceiving and having a feeling about a situation. Be aware of self, your body reaction to CAM, awareness of social context how to respond to needs/wants of people and lastly know how to interact with people (carefully planning based on the needs). In this case people know all that entails CAM to include; how and when to use CAM, storage, contraindications, benefits, side effects, regulation and policies governing CAM (WHO, 2007, 2014). World Health Organization (2004) constructed consumer information about CAM to enable them use CAM appropriately.

According to Astin (1998), the predictors of CAM include higher education. Health professionals are also encouraged to be knowledgeable on CAM through trainings, continuous medical education and workshop to equip themselves with skills, knowledge and attitude to enable them advice patients and embark on research. This was witnessed in California where a third of family physician who were aware and believed that CAM works, were able to administer one of the 16 types of CAM (Amster A. Michael, Cogert Greg, Lie A. Desiree, 2001; Gaylord, Susan; Norton, Sally Curtis, 2004; Alliance, 2010; Fujiwara, Imanishi, Watanabe, Ozasa, & Sakurada, 2011).

There is a lot of diversity and variation of CAM because it is different from one country/community to another and that is why every individual should take the responsibility to know the CAM available in their native land (WHO, 2014). This will enable one to make an informed choice because every person has the right to information (Stuttaford et al., 2014).

CAM knowledge was broadcasted from one generation to another verbally. For example a person is recruited to work with CAM practitioners for a period of six

months to one year till he/she gains knowledge, skill and experience before allowed to practice on his/her own (Lambert et al., 2011). Majority of CAM practitioners had no formal education (primary, secondary, tertiary) before 21 century. In the early 21st century, there was establishment of education system up to university level for those who would want to practice CAM and this is common in established economies like European countries, Asia, China (Schoonover et al., 2014). In Kenya, a person who want to practice CAM are also trained to University level although is not a common practice.

The WHO, (2005, 2014) has the objective of increasing awareness among CAM practitioners, users and conventional practitioners. They can search the internet to learn more on the CAM therapies available.

Healthcare professional (physician, nurses, pharmacist) have the responsibility to have adequate knowledge about both traditional and non-traditional modes of care to counsel patients on CAM according to the Association of American Medical Colleges (Amster et al., 2001; James & Bah, 2014; Lindquist, 2014). CAM included in university curricular for health professionals and students ensure onward propagation of that knowledge (Academies, 2005). However, some students prefer not to learn about CAM (Alliance, 2010; Banerjee et al., 2011). Nijs, (2013) and Esper, (2014) recommended CAM into nursing education and practice to enhance it's utilization.

A study evaluated the perception, experience and recommendation of medical professional of which two thirds were registered nurses. Respondent cited that they will recommend CAM to patients if they were not responding to treatment, dissatisfied with conventional care (Nijs, 2013). Three themes erupted during a study among nurses that CAM could be useful for decreasing or even eliminating narcotic use, another theme was that they lacked resources and guidance from institution where they worked regarding CAM therapies to patients, nurses would like more education and reliable resources about CAM therapies (Esper, 2014). Illiterate persons were found to use CAM in Ghana and it was attributed to be due low cost regardless of the possible risks involved in the use of CAM (Kuunibe Naasegnibe & Domanban, 2012).

Amster (2001), examined California family physicians and found out that a greater percentage of physicians had knowledge and attitude on CAM that enabled them to integrate CAM with conventional medicine and to recommend and administer CAM to their patients. This is also similar with European Union countries which train doctors on CAM, they have Continuous Medical Education (CME) which is a requirement that they must attend and lastly they have professional bodies which regulate their practice (Amster et al., 2001; Australian Acupuncture & Association, 2007; Alliance, 2010). Healthcare professional should embark on research to identify the CAM that works in terms of dosage schedules and route of administration of supplements and herbs (Gaylord, Susan; Norton, Sally Curtis, 2004). Lastly insufficient knowledge on the use of CAM by customers, CAM practitioners and healthcare worker deter utilization of CAM (Jonas, 2001).

2.3.2 Culture and Utilization of Complementary Alternative Medicine

Culture is the way of life for a group of people living in geographical area with the same infrastructure. In addition to that, overview of leininger's theory of culture care diversity and univesality (2008), described culture as a set of values, beliefs and traditions that are held by a specific group of people and passed on from one generation to another. Use of traditional medicine depends on the traditional practices of that area in the maintenance of their health.

Every community has a system of health in line with its cultural values and beliefs. They have traditional healers, diviners and spirits and they are often consulted first before seeking health care in the conventional medicine. This has been practiced since ancient times before the coming of Christian missionaries. The view of causes of wellness and illness differ from one culture to another. At the same time in some communities, the culture of CAM use has been fully accepted and integrated into the mainstream health like Chinese, Korea, and Japanese who have institutionalized CAM to complement biomedicine (Sita, 2011; Shim, 2016).

According to Astin (1998), people do not seek CAM because they are dissatisfied with conventional medicine, but instead it is due to their own values, culture, belief and philosophical orientation toward health and life (Hoeflich, 2010). CAM is termed as mixed bag because of integration of respect and collaboration between different

views of health and healing, resulting in mutual transformation. Biomedical practitioners focused on the diagnosis and treatment of diseases (Gale, 2014).

Immigration of individual within the same country for example rural to urban migration and vice versa promotes a mix of culture and inter exchange of cultures. International migration has led to exchange of cultures between different nations and that is how some CAM came to being outside a certain country of origin. For example chines medicine is now widespread to other countries to include Kenya.

2.3.3 Cost and Utilization of Complementary Alternative Medicine

According to prevention of mental disorders Journal, mental disorders cause a great economic challenge because of its comorbidity and disability (Ministers, 2001; WHO, 2004; Ali & Agyapong, 2016; Mackenzie, Ball, & Caddick, 2016;). It starts when an individual is young approaching school, affects youthful stage when one makes decision on career development, occupation, and finally it interferences with family relationship. In the US, annual total costs related to mental disorders is 147 billion US dollars, more than cost attributed to other diseases. Estimates of direct cost in low income countries is lower due low availability and coverage of mental health care services, while at the same time bearing indirect costs due to increasing duration of untreated disorders and their associated disability. Other costs include lost employment, reduced productivity, the impact of families and care givers, the level of crime and the public safety and the negative impact of premature mortality associated to suicide, stigma and discrimination, lost opportunity cost (individuals and families separation or divorce) (WHO, 2004). Therefore, the use of proven CAM can cut down some of the costs listed above and prevent treatment gap.

CAM are methods of health care which do not require a lot of technique thus the cost is reduced compared to conventional medicine. Those who offer these services have interpersonal relationships that promote the selling of CAM products and it is just passed by a word of mouth from one individual to the other. CAM has been advertised through 'SMS' and this spreads very first and that is why sometimes conventional medicine practitioners need to take detailed history to identify the use of CAM and initiate research on those practices that can support treatment of psychiatry (Sita, 2011). Measurement of an outcomes include cost effectiveness (CEA) which is defined as the benefits one acquire from an intervention, Cost-Consequences (CCA)

which is used when analysing an outcome of a report utilizing clinical units to include relieve of symptoms, and analysis of cost utility (COA). Some studies measure outcome in terms of quality or disability (Kiima & Jenkins, 2010; Park et al., 2013).

There is an assumption that CAM is cheap than conventional medicine. This is true or false depending on the type of CAM, place of acquisition of CAM products. However, in essence CAM costs are flexible since payment cannot deter somebody from treatment as compared to conventional treatment (Lambert et al., 2011; Ndetei, Mbwayero, Mutiso, Khasakhala, 2013; Park et al., 2013; Githinji, 2014).

According to a national survey conducted in United States of America in 1990 showed an increase in out-pocket expenditure relating to complementary alternative therapies which were conservatively estimated at \$27.0 billion, which is comparable with projected 1997 out of pocket expenditure for all US physician services (Eisenberg et al., 2014). Notable view was that Kuunibe and Domanban, (2012) implicated cost as a significant determinant of utilization of CAM.

2.3.4 Duration of Illness and Utilization of Complementary Alternative Medicine

Duration of illness refers to a period or length of time ones stays ill/sick. This may be short or prolonged. People who suffer from long time sickness tend to have comorbidity with other diseases that necessitates the use of a wider forms of treatment. In this sense they widely consult both conventional practitioners and CAM practitioners (Jonas, 2001; Jeong, Lee, Lim, & Yun, 2016). Briefer duration means the condition is acute that requires an intervention to relieve the problem (free from symptoms of the diseases).

At a given point we can say that people who have prolonged illness are also likely to suffer from chronic illness such as psychosis, depression, hypertension, cardiovascular disease, Human immune deficiency Virus and Acquired Immune suppression disease (HIV/AIDs). Chronic illness has led to increased health care cost in the whole world (Barnes et al., 2008; WHO, 2014). A study has revealed that use of CAM is majorly due to chronic disease such as cancer (Hyodo Ichinosuke, Amano Noriko, Eguchi Kenji, Narabayashi Masani, Imanishi Jiro, Hirai Midori, 2017), hypertension and diabetes (Saydah et al., 2006). A study conducted in Ghana

illustrated that frequency of sickness has a positive effect on the use of CAM (Kuunibe Naasegnibe & Domanban, 2012).

While age and duration showed statistically significant between the patient who used CAM and those who used rehabilitation therapies in Korea with children with neuropsychiatry (Jeong et al., 2016).utilization of CAM is preferred by older people as compared by younger age (Ramsey, Spencer, Topolski, Belza, & Patrick, 2001)

2.4 Theoretical Framework

2.4.1 Madelein Leininger: Transcultural Nursing

This theory was developed in 1991. The theory states that the aim of Nursing is to provide care in harmony with cultural values, beliefs and practices. She goes further to state that care is the essence of nursing and the controlling complex and unifying features. She says that there can be no cure without caring but there may be caring with curing. Healthcare workers should work towards recognition of care and the values, health beliefs and lifestyle of different cultures which will form the basis for providing culture specific care (Leininger, 2008).

This particular theory was appropriate for helping guide this research because the researcher sought to understand the factors that influence patients with mental disorders utilizing CAM and probably this could be associated with the following factors; culture, economic, education, technology, kinship and social, political and legal and religion their familiarity in the existence of CAM deeply rooted in their culture and it has been propagated from one generation to another from ancient times before the introduction of western medicine.

The key concepts of the Leininger theory helped the researcher understand and account for the variables that affect patient's utilization of CAM. According to Leininger health care worker need to acquire knowledge of the patients' heritage through cultural assessment using the following skills; being attentive, active listening to include traditional folk practices, identification of patterns and narratives, synthesis of themes and patterns and establishment of culturally appropriate care plan with the client, family and the community in order to inquire the use of CAM. The information gained from the patient about his/her cultural beliefs can be used to plan for his /her

care to meet their needs or inform the institutions that deal with CAM like government to set policies and regulatory bodies, funds to undertake research on CAM (Sagar, 2012).

Majority of people depend on CAM as the source of health care and because it is according to their cultural beliefs and spiritual view. The health professionals need to take detailed information on use of CAM in order to elicit information to guide in the care of the patient as well as adequate information on CAM use in mental disorders in order to provide counsel on health benefits and risks adapted to the specific local context (WHO, 2012).

2.4.2 Conceptual Framework

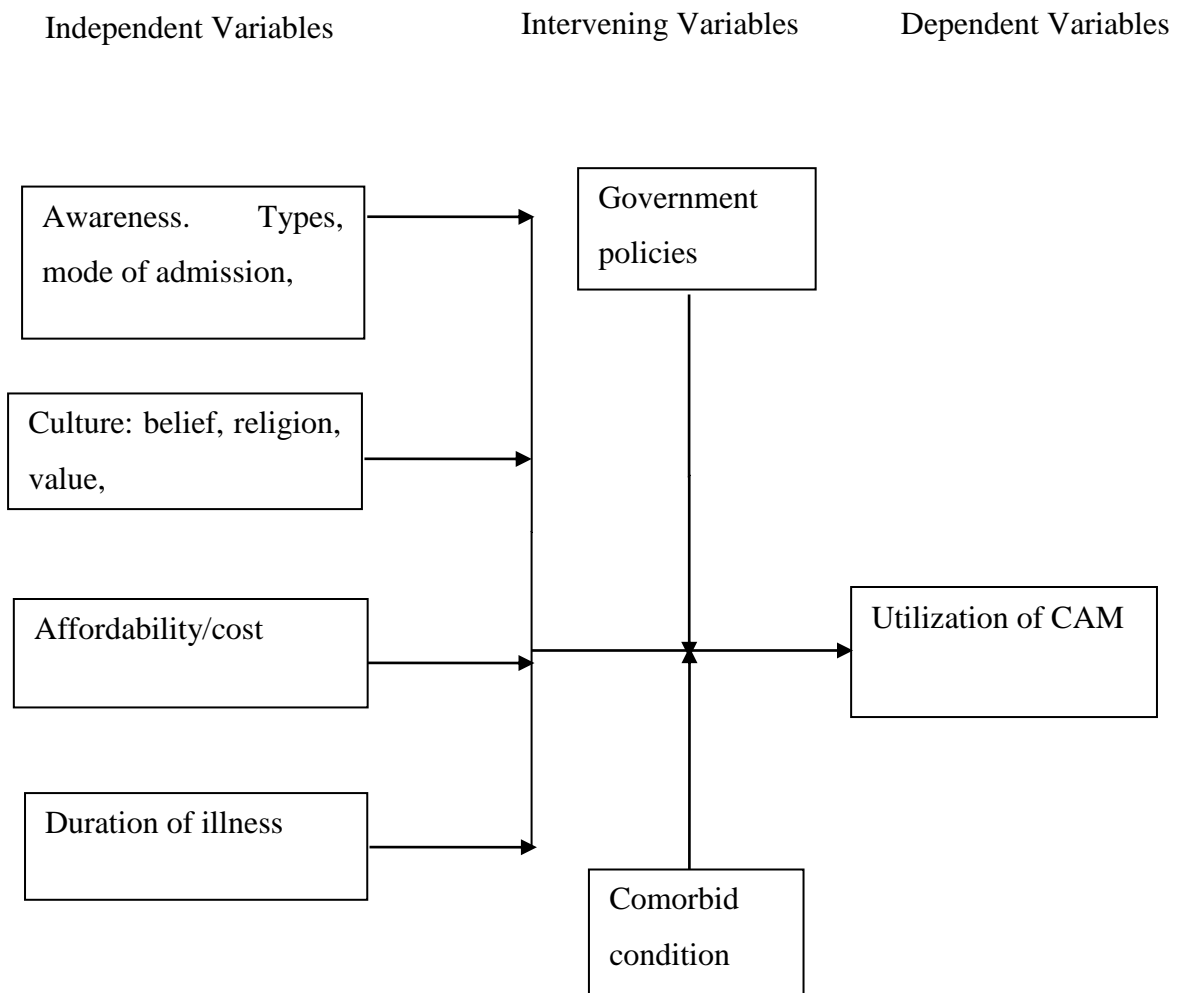


Figure 2.1: Conceptual Framework

CHAPTER THREE: STUDY METHODOLOGY

3.1 Introduction

This chapter presents research design and methodology of the study and describes in detail the design, the research variables and provides a broad perspective of the description and selection of the target population. The sampling procedures, the research instruments, data collection techniques, and data analysis procedures used in this study are explained in depth in this chapter. The methodology procedures were applied to attain acceptable, validity and reliability of the research study.

3.2 Study Area

The study area was Mathari Hospital situated at outskirts of Nairobi County, Starehe constituency. According to Magu, (1984), the hospital was established in 1910 as a smallpox centre later converted into Nairobi Lunatic Asylum. The hospital admitted people with mental illness from African troops during the First World War and Europe being transferred to their countries.

The hospital has remained to offer mental health and psychiatry services to the nation of Kenya as the main referral hospital that reviews patients with mental disorder including unresponsive to drugs. On the other hand, since it was the only National Mental Referral Hospital and a training institution for mental health and psychiatric services, it was appropriate that this research takes place there. This was particularly identified because the study involves patients with mental disorders who at a given time might have utilized CAM which may cause drug interaction and many of them do not share the information with health care staff on the usage of CAM.

3.3 Research Design

A descriptive cross-sectional study design was utilized at Mathari National Hospital to assess the factors that influence patients' utilization of CAM. This was a study on patients with mental disorders admitted in the hospital and key informant interview with the nurse managers working in the civil side (inpatient ward for the patient with mental disorders). The description survey method ensured complete description of the situation, reduced bias to minimal in the collection of data and findings of phenomena (Kothari, 2008).

3.4 Study Population

A target population is a group of individuals taken from study population who share common characteristics, such as age, sex and desired information regarding target population. According to Mugenda & Mugenda (2009), a target population is a group of individuals, events or objects with common observable characteristics. Study targeted patients with mental disorders and nurse manager.

3.5 Sampling

3.5.1 Sample Size Determination

Fisher's method was used to determine the sample size for the patients (Sun, Phillips, & Haven, 2005) Civil side consist of female wards (2f, 4f, 5f, 6f,) male wards (1m, 4m, 5m, 6m, 8m, 9m) The entire population was estimated to be 400 patients with mental disorders from central registry.

$$n = \frac{Z^2 P(1 - P)}{I^2}$$

Where:

n = Sample size [where population > 10,000]

Z = Normal deviation at the desired confidence interval. In this case it was taken at 95%, **Z** value at 95% is 1.96.

P = Proportion of the population with the desired characteristic.

Q = Proportion of the population without the desired characteristic.

I² = Degree of precision; was taken to be 5%.

Since the proportion of the population with the characteristic is not known, then 50% was used

$$n = 1.96 * 1.96 [0.5] [1-0.5]$$

$$[0.05][0.05] = 384$$

Since the target population in Mathari National Teaching and Referral Hospital is <10,000, the sample adjustment was done using the following formula.

$$nf = \frac{n}{1 + n/N}$$

Where: **nf** = the desired sample size for population <10,000

n = total population

N = the calculated sample size.

$Nf = 384 / (1 + 384 / 400)$

nf = 196 the targeted sample size was therefore 196 patients.

3.5.2 Sample Frame and Sampling Procedure

A sample frame of patients in the hospital was obtained from central registry using in patient numbers. The wards were stratified. The proportion of patient in each strata were worked out by dividing the number of patients in each stratum by total number of patients in the population in the hospital at the time of the study and multiplying results by 196 which was the estimated sample size. In each of these strata systematic random sampling was used to select the required number of patient until a total of 196 was reached. Systematic random sampling from each stratum was calculated by dividing the total number of patient in the respective stratum (**N**) by the desired sample size of the stratum (**n**) to give the **K**. Every k^{th} patient on the list and eligible was included in the sample.

Table 3.1: Proportion of Patients as Selected from Respective Strata

Ward	Total population number of patient in the ward	Number of patient in the ward divide by the sample size times hundred	Sample size in each ward to participate in research
2F	12	$12/196*100$ 6.12	6
4F	5	$5/196*100$ 2,5	3
5F	40	$42/196*100$ 21.42	20
6F	55	$60/196 *100$ 30.61	28
1M	28	$26/196*100$ 3.26	14
4M	20	$20/196$ 10.2	10
5M	50	$62/196*100$ 25.51	26
6M	59	$69/196 *100$ 35.20	30
8M	55	$56/196 *100$ 28.57	28
9M	61	$73/196 *100 = 37.2$	31
Total	400		196

3.5.3 Recruitment Process

The researcher sampled each ward separately. In ward 6f, the researcher wrote twenty eight (28) papers yes and thirty seven (37) papers written No. Those who pick “Yes” from a container where they were mixed were recruited. The same was done in ward of 6m, 8m, 5m, 4m, 1m, and 5f, 2f, 4f, 5f. Those who picked “Yes” were recruited. The researcher had to seek consent from the participants after explaining the study title, benefits, risks, discomforts, and the procedure of data collection (Appelbaum, 2006; Charles Lidz, 2006; CM, 2015).

3.5.4 Eligibility

3.5.4.1 Inclusion criteria

Patients who were stable admitted in the ward for the month of July 2017 during data collection, aged between 18-65years. Patients with a Mini Mental Status Examination (MNSE) of more than 24 scores and who consented to participate in the study that assessed the cognitive function (Wagoro, 2006)

3.5.4.2 Exclusion criteria

Patients not admitted in the ward during the month of July 2017 when data was collected to prevent bias. Those who were less than 18 years and above 65 years at the same period were not to be studied as well as those who refused to consent and those with MMSE below a score of 24. Patient whose MMSE score was less than 24 meant they could not comprehend information such as confidentiality, risks and benefit involved in the research. Ten patient who participated in pretest were also excluded

3.6 Data Collection Procedures

3.6.1 Research Instruments

Standard administered structured questionnaires for the patients and a key informant interview guide for mental health nurse managers. The study questionnaire was divided into two parts. The first part was used to obtain demographic characteristic which had seven questions. The second part had 17 questions aimed to collect information on factors such as awareness, culture, cost and duration of illness. The questionnaires were written in English and Kiswahili with both open and close ended questions. The key informant had three questions which elicited information on knowledge, specialization and recommendation on utilization of CAM.

3.6.2 Data Collection

Permission was sought from the hospital through the assistant chief Nursing officer in charge of the hospital and made the nurse in charge of the ward aware and to expect the researcher. At the ward level the researcher explained the purpose and duration of the study. The data was collected for a period of four weeks. All completed questionnaires were scrutinized for completeness and reliability of information obtained. Cleaned data was coded and stored immediately to minimize disturbances and enhance objectivity. For nurse managers were approached directly by the principle researchers. Those who gave consent, were interviewed using the interview guide. Data from key informant was audiotaped, listened to the tapes, transcribed. Later it was listened again and organised into themes which were constructed into narratives.

3.6.3 Study Variables

3.6.3.1 Independent variables

Independent variables in the study include awareness of CAM, duration of illness, culture and cost of CAM that influence the use of CAM by patient with mental disorders. These are some of the factors identified in the literature.

3.6.3.2 Dependent variables

Utilization of CAM is the main variable tested and it depends on the various types of CAM used by patients with mental disorders that include use of the four domains, alternative medicine (naturopathy, homeopathy), biologically based (nutrients, plants and animal), mind and body intervention (meditation, prayer), manipulative and body based therapies (chiropractic, exercise), energy therapies (acupuncture). The research question on the type of complementary medicine utilised was asked.

3.6.3.3 Intervening variables

These are variables that don't influence utilization of CAM directly. They include mental illness with other comorbid disease like Diabetes, Hypertension, Stroke HIV/AIDS. The government can make policy on CAM and provide funds for training and research.

3.6.3.4 Outcome variables

The dependent variable was the type of CAM used based on five domains; biological, energy based, body manipulative therapy, whole therapy. Improved Patients health could be seen as benefits acquired after use of complementary alternative medicine to include improvement of physical, psychological, emotional wellbeing, cure of diseases, sleep and relaxation, boost immunity and eventually relieve of symptoms which were asked from respondent.

3.6.4 Selection and Training of Research Assistants

Recruitment and training of research assistants one assistant research working in the hospital was recruited and trained with minimum Bachelor of Science in nursing with experience of at least three years in Mathari National Hospital. He was trained for two days on questionnaire administration; data collection techniques as well as recording. He performed a role play prior to pre-testing to familiarize himself with the

questionnaire and on how to ask questions in a way that the respondent could understand.

3.6.5 Pretesting the Study Instrument

3.6.5.1 Pretest

Pretesting of the questionnaire was done in ward 8 on ten patients who were admitted in the ward and one mental health manager as a key informant in the department. The tool was presented to patients who were admitted in the ward by the assistant researchers before the actual study was conducted. The questionnaire was administered to 20% of the study's sample size. The ten patient and one nurse manager who participated in pilot study did not participate in the real study. This helped in making modifications to the questionnaire and key informant interview guide. This gave the assistant researchers an opportunity to practice how to collect the data before the actual survey. Issues raised during the pretesting were corrected. It also aided in measuring the validity and reliability of the questionnaire and thus ensured that the data collection was done in a standardized way

3.6.5.2 The validity of research instruments

Validity is accuracy and meaningfulness of inference based on research results. Pilot-testing of the study was used in making the instrument valid, vague questions, unclear instructions, comments and suggestions captured from respondents helped the researcher improve efficiency of instruments. Responses from participants were analyzed to give a generalized position able to stand the validity test. The study was simplified by using simple English, open and ended questions to ensure questionnaire captured all intended respondents. The questions were simplified by the study to make all the respondents to comprehend all the questions. The study used survey method which lessened bias of the questions hence the study was assured of collecting valid data from the respondents interviewed.

3.6.5.3 Research instrument reliability

Reliability was determined by the extent to which the instrument gave the same results on repeated trials. Although there was consistency in the results of a quality instrument at different times, unreliability was always present to a certain extent, the measure of reliability of the study was pretested using selecting 20% of the respondents (10) from ward 8. Cronbach alpha coefficient was computed using SPSS

version 21. The Cronbach alpha coefficient value above 0.6 showed the measurement procedure was reliable (Tokel et al, 2012).

3.6.5.4 Data Quality Control Assurance

The assistant researcher makes sure the questionnaires were filled correctly by the respondents to enhance accuracy and validity. Questionnaires were also checked by the principle researcher for omission and possible erroneous entries, to ensure that each question was answered clearly and recorded correctly.

3.7 Data Management and Analysis

3.7.1 Data Management

To ensure confidentiality and avoid data loss, all questionnaires were stored in computer hard drives and backups in flash discs and personal email accounts. Completed questionnaires were kept in lockable cabinets throughout the study and accessed only by authorized person's. A double entry of the same data was done for accuracy purposes after collection. The data was also stored under Passwords. Raw data was edited to detect any errors and omissions. Data coding was done using numerals and answers. Coding for key informants was also done. During data classification the coded data was arranged according to characteristics and then it was entered using Micro Soft Access then exported to SPSS version 21 for analysis. Coding and verification of the data was done for easy manipulation, analysis and presentation.

3.7.2 Data Analysis

Computer aided programs (SPSS version 21) and Excel (Microsoft 2008) were used to analyse the quantitative data. Basic descriptive analysis of demographic and result presented using measures of central tendency with appropriate measures of continuous variables and measures of association. The data variables were summarized using descriptive statistics and a further cross-tabulation of variables individually between a dependent and an independent variable. In other words, the percentage of participants utilizing CAM were compared to those who were not utilizing CAM in terms of income, awareness, duration of illness and culture. Awareness, specialization and recommendation of CAM was determined through Key informant interview of nurse managers.

A regression analysis was undertaken in order to ascertain the association between the utilization of CAM and the independent variables of awareness of CAM, culture, duration of psychiatry illness and affordability/cost of complementary alternative medicine. Regression analysis is a better statistical tool to use because it has the capability of analysing whether there exists a relationship between two or more variables. The first step in conducting regression is to test the homogeneity of the variances of the variables. This was achieved by running an F-test which also helped in determining whether the sample was from a normal distribution to make it possible to use regression in the analysis. This is because multivariate normality is an assumption in regression analysis.

The analysis was set to a 95% confidence level meaning that the calculated p-value was compared against $\alpha = 0.05$ for the test of significance.

For the qualitative interviews, all recorded data was transcribed and then subsequently translated (in case of Kiswahili interviews). All transcriptions were read carefully and thoroughly and then thematic analysis was done manually in order to regenerate meaning and structure to the data collected. Different themes were identified from transcripts and similar phrases and words that commonly occurred in the transcripts were categorized under the heading of one theme.

3.8 Ethical Considerations

Before commencing the study, a written approval was sought from KNH/UON ethics and research committee appendix 11 and Mathari appendix 5. Since patients with mental disorders affect the person's cognitive function, it was important to ensure those functions were assessed first before patients would participate in the study.

The participants (patients) were assessed by use of Mini-Mental State Examination (MMSE) tool (appendix 7) to determine their competence. This is a tool used to assess mental state to ascertain that they are capable of understanding and comprehending information pertaining to research (confidentiality, benefit and risks) that was carried out. The tool has been used by other researchers as mental condition impairs cognitive functions (Wagoro et al.2006; Staden et al. 2003). The tool has scores of 30 in total and a score of greater than 24 is considered to be capable of understanding information pertaining to research and can fully participate in the research. As subjects in the study they are required to sign a consent form after the

procedure has been explained according to ethical considerations. It was also a requirement under the code of ethics that all participants in the study sign a consent form before they are involved in clinical research.

Those who score above 24 were given a written informed consent form to sign at the time of data collection in the presence of a witness. Informed consent form was documented. The study participants were informed of the possible benefits of the study and that the study was entirely voluntary. The purpose and objectives of the study were clearly explained to them and participants were informed that they can withdraw from the study any time they want. Special codes instead of names were used to represent the respondents.

Confidentiality: Matters related to confidentiality were explained to the respondents so that they could be free to share personal information that they wished and the researcher ensure that such information was entirely meant for this research and sharing of such information with other researchers could only be possible through authorization from the respondent. Privacy and dignity were ensured. Only the authorized personnel were allowed to access the information collected such as Ethics Review Committee (ERCs) and Data Safety Management Board.

Every respondent had a right to fair treatment by, randomly selecting the respondent as indicated in table 3.1 above using systematic random sampling. Only patients with mental disorders aged between 18-65 in civil side both male and female with cognitive function were assessed using MMSE above score 24 participated in the study. The research involved use of a questionnaire with minimal risks and the respondents were free to respond to question which they were able to respond to and leave those they were unable.

3.9 Study Limitations

There are limitations of the current study: first the sample size was drawn from one hospital although being a National hospital did not have equal representation of the general population in Kenya, it only covered 8 ethnic groups in Kenya therefore the results are not generalizable. Use of cross-sectional descriptive study was inadequate to assess the outcome of CAM since it required more time and resources to measure

the outcome. Some patients did not participate because of impairment of cognitive functions.

3.10 Dissemination Plan

The result was disseminated to the KNH, UoN library for reference, Mathari National Mental Hospital unit, Mental health Nurses Chapter Conference and Publication.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents data analysis and findings of the study. The chapter starts with the introduction where the demographic characteristics of the respondents is described. Then the following sections were presented according to the objectives of the research by tabulating and contrasting the different variables under study. The last sections of this chapter presents the statistical analysis of the research variables and then a summary of the key findings are discussed.

The research was based on the analysis of the factors that influence patients' utilization of complementary alternative medicine at Mathari Hospital in Nairobi County. Out of 196 questionnaires administered 187 were returned realising a response rate of 95.4 %.

4.2 Demographic Characteristics of the Study Participants

4.2.1 Age Distribution of Participants

A total of 187 patients were interviewed. The population between 18 and 48 years accounted for 86.6% of the respondents. The age group of 28-37years had the highest number of respondents, 63 (33.7%) while the age group of 58-67 years had the least number of respondents 8 (4.3%) according to figure 4.1.

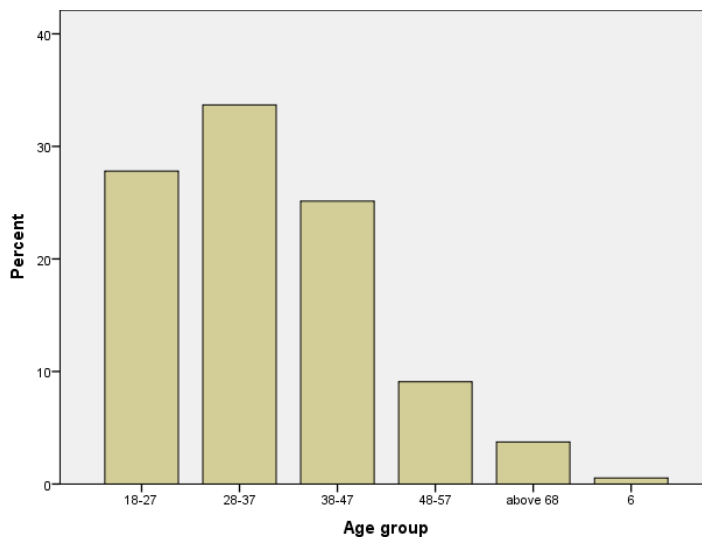


Figure 4.1: Age of Participants with Mental Disorders

4.2.2 Gender Distribution of Participants

Figure 4.2 represents the gender of the 187 patients interviewed and most of them were male 112 (60 %) and 75 (40%) were females.

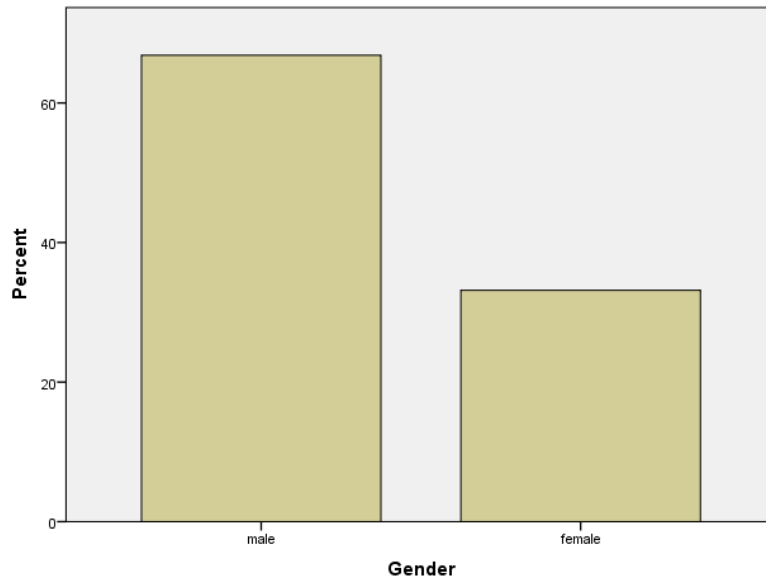


Figure 4.2: Gender Distribution of Participants

4.2.3 Religion of the Respondents

The figure 4.3 shows the religious beliefs of the respondents. Christians constitute a larger portion 181 (96.8%) of the population interviewed in relation to the Muslims who constituted 6 (3.2%).

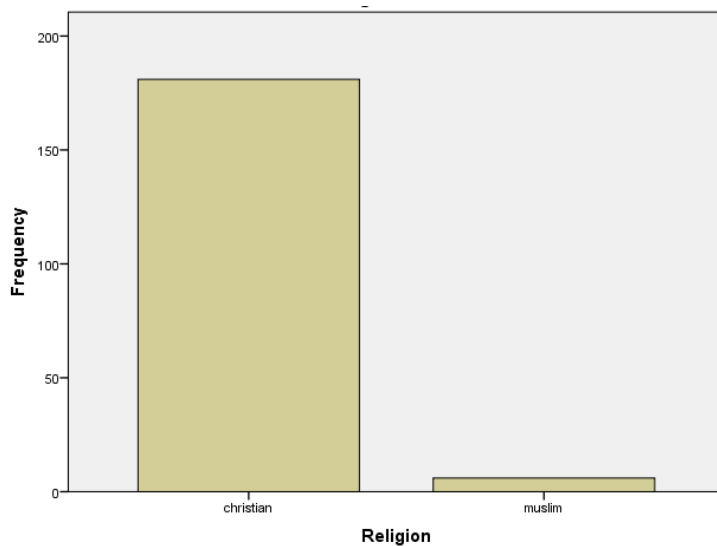


Figure 4.3: Religion of Respondents

4.2.4 Marital Status of the Respondents with Mental Disorders

Figure 4.4 presents marital status of the respondents where more than half of the respondents, 96 (51.3%) were married while 76 (40.1%) were single. 8 respondents or 4.3% of the respondents were either divorced or widowed respectively.

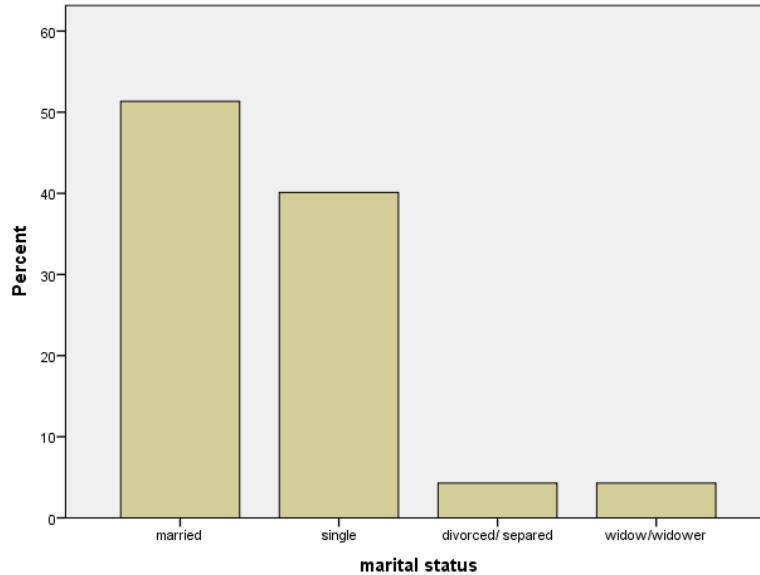


Figure 4.4: Marital Status of Participants

4.2.5 Education Level of the Respondents

Table 4.5 shows that, of the respondents 98.4% have formal education (primary 74 (39.5%), secondary 62 (33.2%) and tertiary 48 (25.7%) and 1.6% informal education.

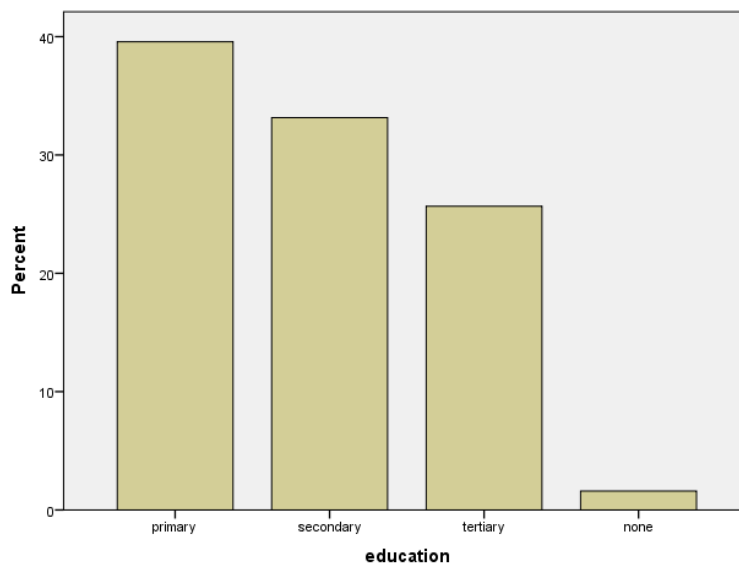


Figure 4.5: Education Level of the Respondents

4.2.6 Income of Participant of the Respondents with Mental Disorders

The figure 4.6 illustrates the source of income of participants. Most of the participants earn 1000-10000 per month as others earn more than 10 000.

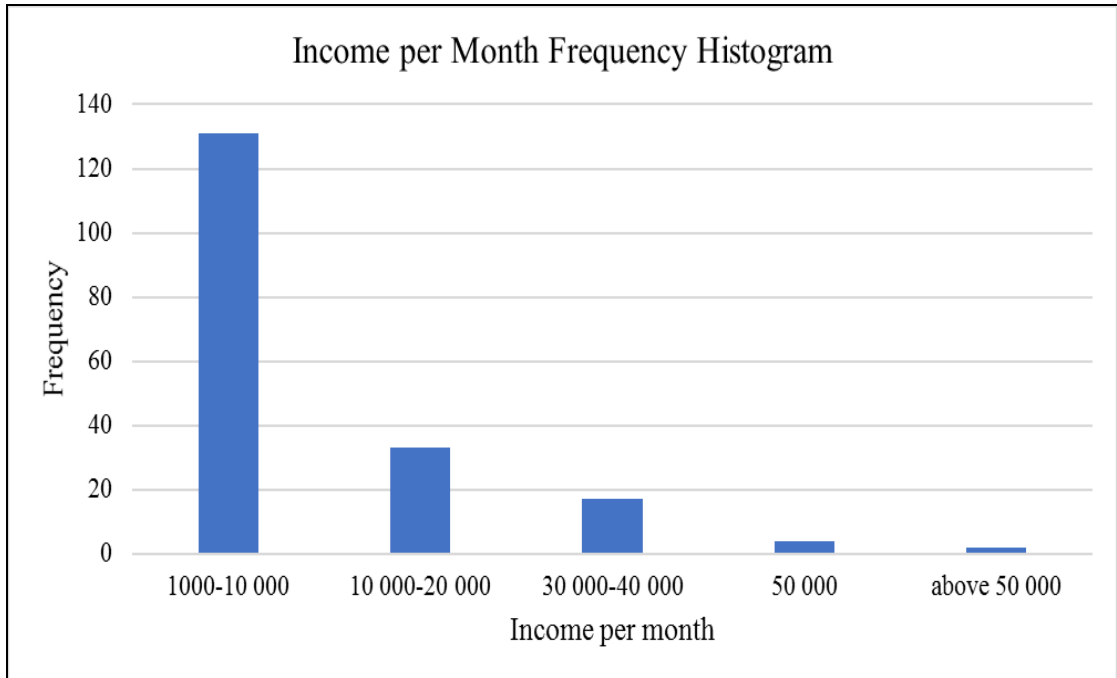


Figure 4.6: Distribution of Monthly Income of the Respondents

4.3 Awareness and Utilization of CAM

In this objective the researcher wanted to illicit information from patient and nurses on awareness of CAM and their types, benefits, reasons that hinder utilization of CAM and lastly if participants discuss the use of cam with health care provider.

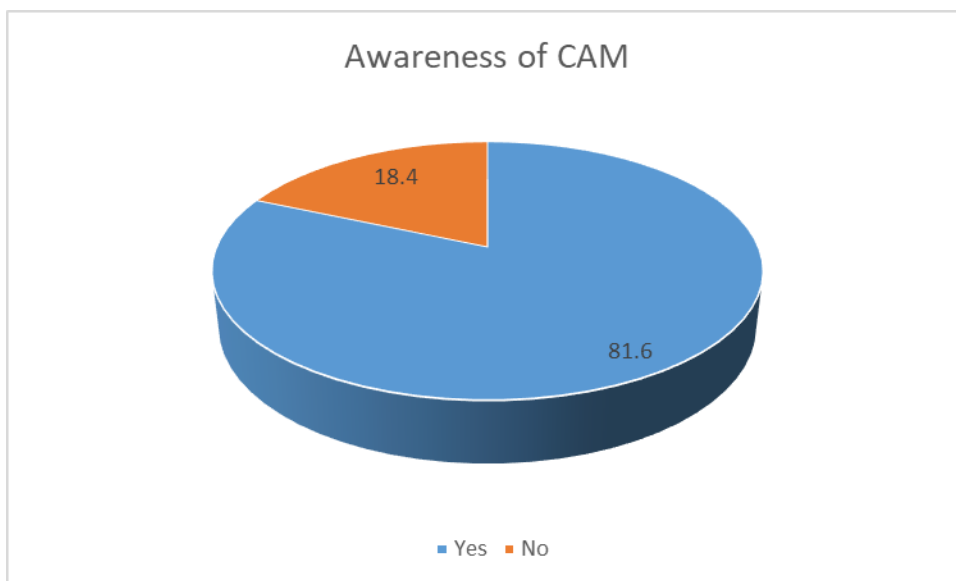


Figure 4.7: Awareness of CAM among Participants

In order to know who among the respondents (patients) were aware of the existence of CAM, the respondents were asked if they were aware or not aware by a closed ended question of a “Yes” and “No”. 81.6% of the respondents reported that they were aware of CAM whereas 18.4% did not as shown in Figure 4.7.

Some were taught during basic nursing and experienced it is use either at home or in private hospital as indicated by excerpts below

KI1 “.... During my training I got basic information as regards to CAM but I have not seen it being practiced in public hospital but only to find it at home and private hospital. Therefore I have no specialization to enable me recommend CAM to patients and I am not licensed to practice CAM.....”

KI2 “I cannot remember being taught in collage on CAM however I am aware that CAM practitioner do exist in our communities and CAM was not recommended by health care professionals.”

Out of those respondents who were aware of CAM, 69 (41.1%) of them utilized CAM while 99 (58.9%) did not. On the other hand, of those who reported that they were not aware about CAM, 1 (5.3%) of them utilized CAM while 18 (94.7%) did not as shown in Table 4.1.

Table 4.1: A Comparison between Awareness and Utilization of CAM

Factor		Uses CAM		Does not use CAM	
		N	%	N	%
Awareness of CAM	Yes	69	41.1	99	58.9
	No	1	5.3	18	94.7

There were varied reasons as to why some respondents were not using CAM as illustrated by subsequent questions that were asked in the study. The reasons given by the respondents include: 33 (27.9%) of the respondents stated that CAM was not effective, 19 (16.1%) reported CAM was not recommended by healthcare workers, 19 (16.1%) did not use CAM for fear of drug interaction, 17 (14.4%) commented that CAM was not according to their culture, 15 (12.7%) cited beliefs and customs, while 3 (2.5%) indicated that they don’t use CAM because of religion and substitution/adjunct.

Figure 4.8 describes the reasons of not utilizing CAM in treatment of mental illness

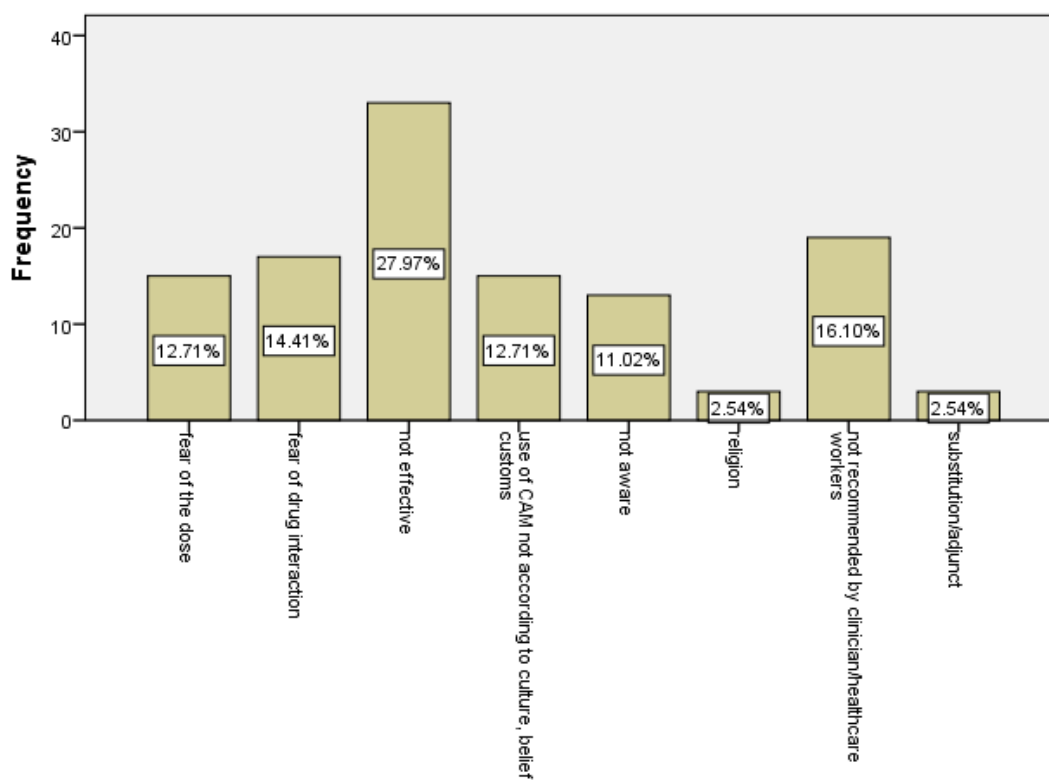


Figure 4.8: Reasons for Not Utilizing CAM among Participants

Among the types of CAM utilized, more than two quarters 27 (14.4%) utilized herbal medicine as compared to other types of CAM such as exercise 15 (8.0 %), prayers 11(5.9%), massage 7 (3.7%), as seen in Table 4.2.

Table 4.2: Types of CAM Utilized by Respondents

Type of CAM	Frequency (n)	Percent (%)
Chiropractic	10	5.0
Homeopathy	9	4.5
Acupuncture	7	3.7
Prayers	11	5.9
Meditation	3	1.6
Exercise	15	8.0
Laxative	4	2.0
Massage	7	3.7
Yoga	1	5
Herbal medicine	27	14.4
Nutrient	4	5.7
Animal therapy	1	5
Used for other conditions	1	1.4

The study depicted that about 18 (9.6%) of participants do share information on the utilization of CAM with healthcare workers while 46 (71.9%) do not share the information on utilization of CAM with health care workers (see Table 4.3).

Table 4.3: Discussion of CAM Use with Healthcare Provider

	Frequency (n)	Percent (%)
Yes	18	28.1
No	46	71.9

Most of the patient 54 (94.7%) acquire CAM through visiting CAM practitioners than 3 (5.3%) who acquire through the shops/drug store.

Table 4.4: Means of Acquiring CAM Products

	Frequency (n)	Percent (%)
Shops/drugstore	3	5.3
Visiting Practitioners	54	94.7

Government was found to have the more responsibility of supporting CAM 27 (40.3%) than other structures like community, church and others according to table 4.5.

Table 4.5: Structures that Support CAM

	Frequency (n)	Percent (%)
Church	6	9.0
Community	20	29.9
Government	27	40.3
Specify others	10	14.9
All of them	4	6.0

4.4 Culture and Utilization of CAM

For the purposes of this study, the culture variable was defined as a set of values, beliefs and traditions that are held by a specific group of people and passed on from one generation to another. The question that was used to measure culture was based on a four-point likert scale in terms of the frequency to which cultural beliefs support the use of CAM.

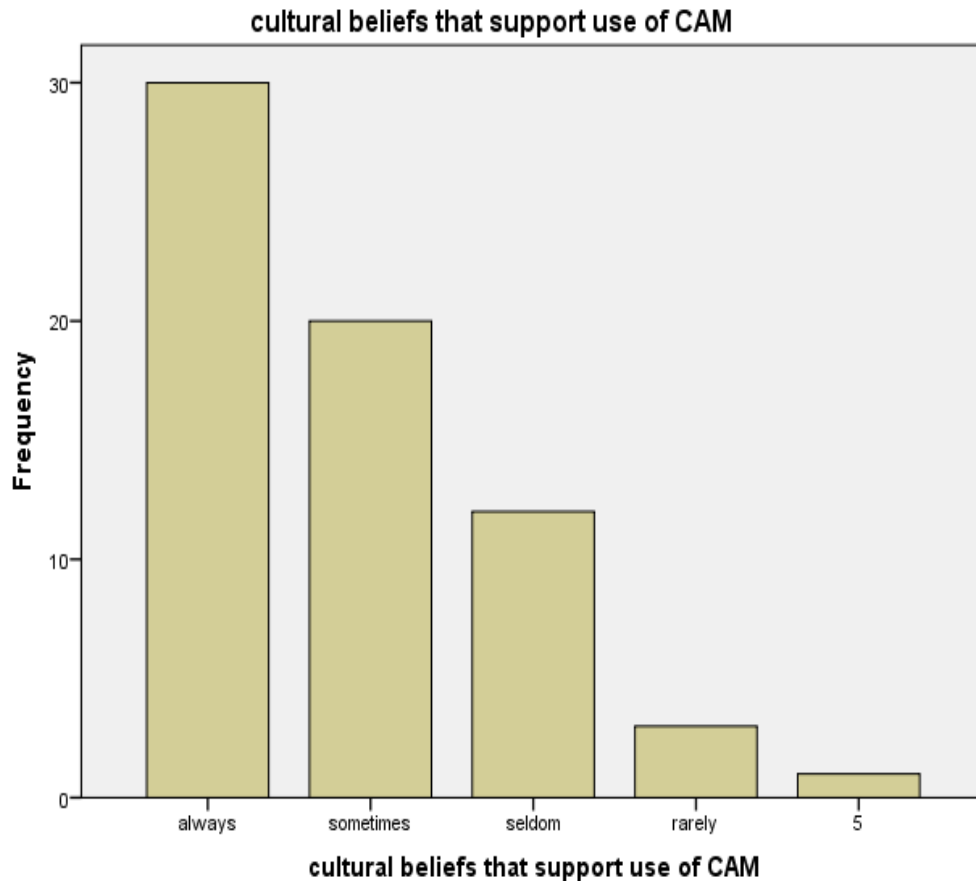


Figure 4.9: Cultural Beliefs that Support Use of CAM

Majority of the respondents had cultural beliefs that always support utilization of CAM as compared to some respondent who reported that sometimes their cultural beliefs do support utilization of CAM as indicated in figure 4.9.

Results from the table 4.6 indicated that 66(100.0%) of the respondents answered this question regarding whether cultural beliefs support the use of CAM. 24(35.3%) of those that believe that culture supports use of CAM actually use CAM while 42(64.7%) did not.

Table 4.6: Effect of Culture on the Utilization of CAM

	Uses CAM		Does not use CAM	
	N	%	N	%
Cultural beliefs that support use of CAM	24	35.3%	42	64.7%

4.5 Cost and Utilization of Complementary Alternative Medicine

Descriptive statistics of the income range of the respondents. A majority of the respondents 131(70.1%) earned an income between Kshs. 1000 – 10 000 Ksh. While the least earned income above 50,000 Ksh. Table 4.7

Table 4.7: Income per Month for the Participants

Income	Frequency (n)	Percent (%)
1000-10 000	131	70.1
10 000-20 000	33	17.6
30 000-40 000	17	9.1
50 000	4	2.1
above 50 000	2	1.1

4.5.1 Source of Income

A majority of those who participated in the study are self-employed (48.1%), while those who are employed are 39%. Those who are engaged in contractual jobs account for 10% of the respondents. Retired and student population account for the least number of respondents at 0.5% and 1.6% respectively.

Table 4.8: Source of Income for the Participants

	Frequency (n)	Percent (%)
Employed	73	39.0
Self Employed	90	48.1
Contracts	20	10.7
Retired	1	.5
Student	3	1.6

The effect of affordability and cost of complementary alternative medicine on the use of CAM has been cross-tabulated in Table 4.8. The data reveals that 38.9% of those that earn between Kshs. 1 000 – 10 000, 33.3% of those that earn between Kshs. 10 000 - 20 000, 35.3% of those that earn between Kshs. 30 000 - 40 000, 50% of those that earn between Kshs. 40 000 - 50 000, and 0% of those that earn above Kshs. 50 000 use CAM. Compared to the source of income, the data further reveals that the employed population reported the highest number of those that use CAM at 52.1%,

followed by those involved in contractual jobs at 40.0%. 26.7% of the self-employed use CAM while 0% of the retired and students use CAM.

Table 4.9: Effects of Income per Month and Source of Income on Utilization of Complementary Medicine

Factor		Uses CAM		Does not use CAM	
		N	%	N	%
Income per month	1000-10 000	51	38.9	80	61.1
	10 000-20 000	11	33.3	22	66.7
	30 000-40 000	6	35.3	11	64.7
	50 000	2	50.0	2	50.0
	Above 50 000	0	.0	2	100.0
Source of income	Employed	38	52.1	35	47.9
	Self employed	24	26.7	66	73.3
	Contracts	8	40.0	12	60.0
	Retired	0	.0	1	100.0
	Student	0	.0	3	100.0
	No	1	5.3	18	94.7

Most of the participants used to raise funds to pay for their CAM services and products through salary and personal business respectively 27 (40.3%) while support from family was 13 (19.4%) as shown in table 4.10.

Table 4.10: How to Raise Funds to Pay for CAM Products

	Frequency (n)	Percent (%)
Salary	27	40.3
Personal business	27	40.3
Family support	13	19.4

The data further shows that those who are employed are able to pay out of pocket for their CAM services and products because most of the respondents reported to have the medical insurance cover but it is not a guarantee that it will cover CAM services and products. According to this question when participants asked about whether they had a medical covered: 49 (65.3%) of respondents had no medical cover while 26 (34.9%) had a medical cover.

Table 4.11: Do You have Medical Cover

	Frequency (n)	Percent (%)
Yes	26	34.7
No	49	65.3

4.6 Duration of Illness and Utilization of CAM

Figure 4.10 shows the descriptive statistics of the reported duration of illness by the participants of this study. Those who have been sick between 0 - 5 years formed the majority at 45.5%, 6 - 10 years were 35.3%, 11 - 15 years were 14.4% while 16 - 20 years were 4.8%.

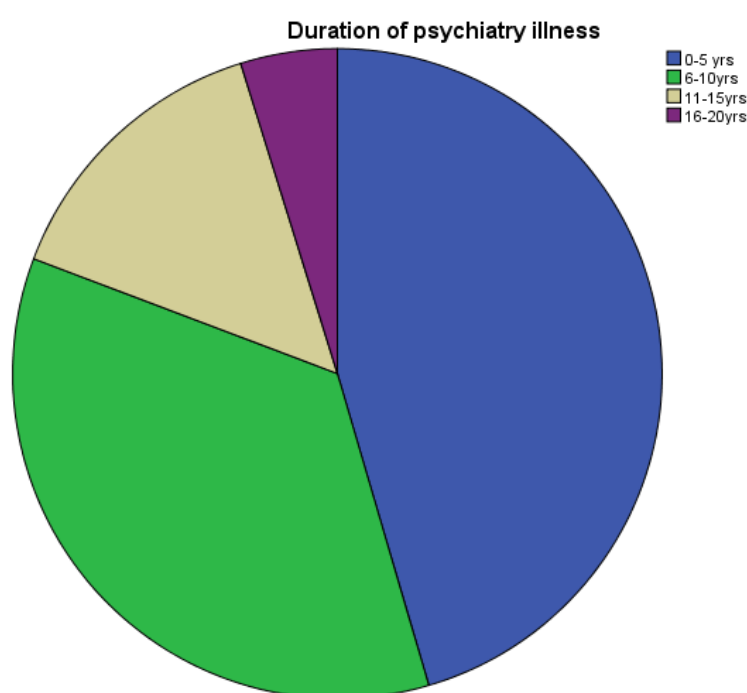


Figure 4.10: Duration of Illness

The effect of duration of illness on the use of CAM has been cross-tabulated in Table 4.7. It can be shown from the table that those who have been sick for between 11 – 15 years formed the majority of those that use CAM while those who have been sick between 0 – 5 years are the least at 28.2%.

Table 4.12: Effect of Duration of Illness on the Use of CAM

Factor	Uses CAM		Does not use CAM	
	N	%	N	%
0-5 yrs	24	28.2	61	71.8
6-10yrs	26	39.4	40	60.6
11-15yrs	15	55.6	12	44.4
16-20yrs	5	55.6	4	44.4
above 20yrs	0	.0	0	.0
No	1	5.3	18	94.7

4.7 Analysis for Factors Associated With Use of CAM

A regression analysis was conducted to determine the effect of the four variables (Duration of psychiatry illness, awareness of CAM, cultural beliefs that support use of CAM, income per month) under study on the use of CAM by patients at Mathari National Hospital. The model first tested the equality of their variance (Table 4.8) in order to ascertain the validity of the test statistic to be used. The test of equality shows that equality of variance is statistically significant meaning that the assumption of equal variance is true and therefore use of regression or a two sample t-test is valid.

Table 4.13: Analysis of Variance of the Independent Variables

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.015	4	.254	5.645	.001 ^b
	Residual	2.742	61	.045		
	Total	3.758	65			

a. Dependent Variable: Using CAM

b. Predictors: (Constant), Duration of psychiatry illness, awareness of CAM, cultural beliefs that support use of CAM, income per month

A multiple linear regression analysis was run on a statistical software – SPSS with a 95% confidence level. The results are shown in Table 4.14.

Table 4.14: Regression Analysis of Factors Associated with Use of CAM

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.890	.241		11.993	.000
	Awareness of CAM	-.970	.215	-.497	-4.508	.000
	Cultural beliefs that support use of CAM	.001	.028	.005	.043	.966
	Income per month	-.041	.038	-.126	-1.065	.291
	Duration of psychiatry illness	.045	.030	.177	1.509	.136

a. Dependent Variable: Using CAM

From the analysis, cultural beliefs that support use of CAM, income per month and duration of illness were not statistically significant because p-value of 0.966, 0.291, 0.136 respectively was larger than the α of 0.05 at the 95% confidence level. On the other hand, awareness of CAM was statistically significant because the p-value was less than 0.001 which is less than α of 0.05 at 95% confidence level.

The regression analysis in Table 4.14 shows that there is enough evidence to conclude that awareness has an effect on the utilization of CAM. However, there is not enough evidence to conclude that cultural beliefs that support use of CAM, income per month and duration of illness have an effect on the utilization of CAM.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings, discussion, conclusions and recommendations of this study. The findings are discussed under sections based on the objectives of the study. The conclusions presented in the chapter are drawn from the data analysis and recommendations for future areas of research are identified.

5.2 Summary of the Findings

The purpose of the study was to assess the factors that influence patient's utilization of complementary alternative medicine at Mathari Hospital. In order to achieve this, four research hypotheses were investigated and tested in the study.

5.2.1 Awareness and Utilization of CAM

This study has shown that eighty one percent of patient were aware about CAM but only thirty seven percent utilized CAM. Nurse participants stated that they were aware of CAM through basic training and experience at home and from private hospital. This was observed (Walker et al., 2017) that nurses gained CAM knowledge through personal experience and influence from peers. Moreover, the analysis of the data show that there is enough evidence to support the hypothesis that awareness of CAM had an effect on its use. Our study indicated that a great percentage that was aware utilized CAM therapies

Similar studies have been conducted in different countries for example, a study conducted by Linder et al, (2007), which argued that knowledge is a barrier to utilization of CAM among older people versus the study conducted in India's Rural Gujarat area by Schoonover et al. (2012), where CAM is the first line treatment and awareness has been stated to have positive effect on the utilization of CAM.

This is highlighted by World Health Organization whose objective is to build awareness to consumers, practitioners, health professional in the consumption of complementary alternative medicine (WHO, 2014). In line with a study conducted in Sydney and Bologna on CAM use in menopause where women of bologna who had knowledge on CAM utilized more of CAM. A nationwide survey on CAM use in

cancer patients in Japan reported that more than half (57.3%) of CAM users had insufficient knowledge about CAM and that they were using CAM without informing their physician (Hyodo Ichinosuke, Amano Noriko, Eguchi Kenji, Narabayashi Masani, Imanishi Jiro, Hirai Midori, 2017).

Our study has shown that majority of the respondents had not utilized CAM because of the following stated reasons; first CAM not effective, not recommended by health care professionals and lastly drug interaction in the body. This was opposite of why others utilized CAM according to Hoeflich (2010) for physical, psychological and spiritual concerns.

When people are aware of types of CAM and their uses then they can make an attempt of utilizing the therapies as shown in our study. Majority of patients utilize herbs more than any other types of CAM, followed by exercise, prayers, and massage. This also depends on the accessibility, availability and cost. This corresponds to a study conducted in United States of America by Astin, (1998), which reported that persons use herbs to complement conventional medicine. Another study in Kenya by Githinji (2014), showed that majority of the population believed that herbal medicine was natural and safe for use. The National Institute of Health indicated an increase of people using CAM (herbs) to complement conventional medicine (Sita, 2011)..

This findings are similar to (Esper, 2014), where nurses felt that they lacked resources and guidance from the institution where they worked regarding recommending and referring CAM therapies to patients. With the current innovation in technology in communication clients get information from internet about CAM services and products enriching them in knowledge. Health professional should keep updated on CAM.

Majority of the health care workers were taught in colleges partially but not in details and while they cannot recall what they were taught, they have no idea of CAM hence they cannot recommend, prescribe and administer CAM to patients. Moreover, CAM is not included in their scope of practice. This means recognition and registration of CAM practitioners is very much required in Kenya. The Government in collaboration with other sector to set laws that support utilization of CAM among consumers, CAM practitioners and conventional practitioner to link up.

This was contrary to a hospital survey conducted in America by Salit et al, (2011) which necessitated the integration of CAM with conventional medicine in the hospitals. Another study by Amster A, (2001) at California reported that the physicians were knowledgeable on CAM, prescribed and administered remedies to their patients. James & Bah, (2014)) findings from their survey illustrated that undergraduate pharmacy students were aware and had used at least one of the domains of CAM and they reported that they were effective and not harmful. These will also apply to nurses who need knowledge to assess, administer, provide information and refer clients (Lindquist, 2014). According to Esper study themes that emerged were nurses were aware and supported incorporation of CAM into patient pain management.

5.2.2 Culture and Utilization of CAM

Although there is no statistical significance of culture influencing utilization of CAM as analysed in the study as $p=0.966$. Most of the study respondents reported that use of complementary alternative medicine is in line to the belief and culture of individuals as majority of the respondent stated that the main reason why they are utilizing CAM was according to their own belief, culture and inner self and also to gain control of their own treatment plus faith. This was also founded by (Eisenberg et al., 2014). This is similar to a study conducted by Astin, (1998) that elaborated the use of CAM was associated with holistic orientation to health.

From the study it was clearly indicated that most patients do not share the information about the use of CAM with their health care workers because they fear intimidation, rejection and mistreatment this is similar to this study in United States (Astin, 1998; Barnes et al., 2008).

5.2.3 Cost and Utilization of CAM

The findings of the study reveal that there is no enough evidence to show that affordability and cost of complementary alternative medicine has an effect on the utilization of CAM. This is regardless of the fact that the respondents reported that the acquisition of CAM was affordable as patients spent less than a thousand Shillings to get a dose of CAM depending on where an individual seeks these services.

Prior research conducted by Ndetei et al. (2013), on traditional healers and their provision of mental health service in a cosmopolitan Informal Settlement in Nairobi supports this line of thought in which respondents reported that traditional healers were affordable depending on where they seek their services. Some reported that traditional healers are not necessary expensive than health facility instead as some were flexible even in the mode of payment. This is also similar to a study conducted by Lambart J et al. (2011), where respondents reported that they could pay in instalments to acquire CAM medicine. Contrary to this, a study conducted in Ghana revealed that cost was a significant determinant of CAM use (Kuunibe Naasegnibe & Domanban, 2012)

In Kenya people pay out of pocket for CAM, because currently there is no insurance company that reimburse for CAM as compared to the payment for conventional services that include outpatient and inpatient services. This was clearly illustrated from the study that most of the respondents don't have medical cover and the medical cover in Kenya don't cover CAM. This case was the same with a study in United States (Astin, 1998), where most people spend out of hand for the utilization of CAM. The study also corresponded to a survey done in United states on trends on alternative medicine indicated that cost of consulting CAM practitioners had gone high at \$ 21.2 billion in 1997 to \$34.4 billion paid cash on hand (Eisenberg et al., 2014). Most of the respondents don't raise funds to access CAM through funds drives and a large population does not have a medical cover, meaning that they will depend more on their income or family support. According to this study, those who were employed (formal employment) were the most population that could utilize CAM. This could be one they have constant supply of finances to buy CAM products, access to wider coverage of health maintenance through advertisement, internet and friends in the place of work. This is similar to the study in Kenya where private clinics offer CAM both Chinese medicine and alternative western practice (Australian Acupuncture & Association, 2007)

The sole responsibility of registration and regulation of CAM products, therapies, and CAM practitioners lies with the government and the community as depicted from the study findings. This agrees with other studies supported by NCCAM (WHO, 2007; Votruba & Thornicroft, 2016). To ensure quality, safety and effectiveness of CAM,

the government has to provide funds for research to prove the CAM which are applicable to mental health in improving their condition and improve the wellness of patients with mental disorders.

5.2.4 Duration of Illness and Utilization of CAM

The study findings illustrates that adult who had been ill for a long period more than ten years and advanced in age were utilizing CAM. These is alluded to one having multiple illnesses and on many therapies. They are desperate and can make use of any means to get well. This is dangerous and risky and thus psychosocial counselling is necessary for both patients and the care giver which includes social support programme, care and treatment. Contrary to this study, across sectional survey on children with neuropsychiatric condition in Korea indicated that duration of illness showed statistically significant difference between those who received CAM and those who received rehabilitation therapies $p=0.001$ (Jeong et al., 2016)

According to World Health Organization (2014), people who have been sick for a period of more than eleven years and above have a higher likelihood of utilizing CAM as compared to those who have been sick for a briefer duration. This could be associated to the fact that many people with long duration of illness could be suffering from chronic diseases such as mental disorder, cancer, which increase the percentage of people utilizing CAM as depicted in study conducted by (Shneerson, 2013). Also, poor state of health and the presence of disturbing symptoms are the main reasons for the utilization of CAM (Eisenberg et al., 2014). In mental health/psychiatry, a relapse reduces the quality of life, resistance to medication and in such a case CAM is recommended (America, 2016; Rickhi et al., 2003; WHO, 2004). A number of other studies have as well investigated the use of CAM in chronic disease hypertension, depression (Barnes et al., 2004; Saydah et al., 2006; Mollaoğlu & Aciyurt, 2013)

5.3 Conclusions

- The research data reveals that there is enough evidence to show that awareness has an effect on the use of CAM. Creation of awareness to the public, health care professional and CAM practitioner to identify the available CAM in kenya to include types, mechanism of action, side effects to prevent concomitant use of CAM especially herbs that cause interaction with antipsychotic, antidepressants. This was supported by one of the key informants (KI3), the media can be

regulated on the kind of information that is broadcasted to the public while at the same time encouraged to create awareness of CAM.

- Our study illustrated that utilization of CAM was in accordance to one's culture, value and beliefs although it was not found statistically significant.
- In as much as there is no association between cost/affordability and the use/utilization of CAM, patients bear all the cost to access CAM. They spend out of pocket, no insurance cover for CAM in Kenya.
- Duration of illness tested negative in the utilization of CAM as highlighted in the study. Participants who were sick for a long period (11-15years) formed the majority of those who utilized CAM and these was due to suffering from chronic illness.

5.4 Recommendations

5.4.1 Recommendations to Stakeholders

- The government through the ministry of health, to create awareness to people on utilization of CAM products and services, include types of CAM, uses, risks involved and regulation of CAM. Equip healthcare professionals with knowledge, skills and experience through curriculum development in medical schools, training of healthcare workers on CAM, workshops and continuous medical education
- Promotion of cultures that are committed to the care and preservation of the environment forest that is a source of herbs that are used both as CAM and the conventional practitioners.
- The government to create policies that will enable people with mental disorders to acquire education and jobs, as a source of income.
- Healthcare professional to take comprehensive history to identify persons with chronic illness who could be using CAM and advice them in order to prevent concomitant use of herbs hence adverse effects. Integrate CAM into the existing primary healthcare system to individualize care for those who prefer using CAM should be given the option.

5.4.2 Research Recommendation

- Another study to explore why people who are aware of CAM yet they are not utilizing CAM
- There is need to replicate the research using large numbers. Follow up studies are also needed.

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APPENDICES

Appendix 1: Participant Information and Consent Form

Title of Study: Assessment of factors that influence patients' utilization of Complementary Alternative Medicine at Mathari National Teaching and Referral Hospital

Principal Investigator: Isabella Mirieri, Master of Science in Nursing Student.

Institutional affiliation: University of Nairobi.

The purpose of the research was to assess factors that influence patient's utilization of complementary alternative medicine at Mathari National Teaching and Referral Hospital. Approximately 187 participants in this study, those who gave consent voluntarily, were chosen to take part in filling the research questionnaire for the patients. If you agree to participate in this study, the following things will happen: First given the research questionnaire and which had two sections socio-demographic and the other assess awareness, culture, affordability/cost and duration of illness influence patients' utilization of complementary and alternative medicine. The form were filled and it took approximately 20 minutes, after which the research assistant collected the questionnaire.

One potential risk of being in the study is loss of privacy. All the information provided treated strictly confidential. A code number to identify participant was used in a password-protected computer database and was kept to all of the paper records in a locked file cabinet. Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them and have the right to refuse the interview. Trying to give details regarding your feelings on the use of complementary and alternative medicine may be stressful and embarrassing. We ensured that this was done in private room. Furthermore, all study staff and interviewers are professionals with special training in interviews

You may not receive direct benefit. But, the information you have provided will help us to understand and assist patients, family members and healthcare workers who use complementary and alternative medicine. This information is a contribution to science and to assist patients and families in the use of complementary alternative

medicine safely without reacting with conventional medicine, policy makers to ensure safety, efficacy, and regulation of CAM practitioners. Your participation is free, you are, not required to pay anything. Your participation is free, does not require to spend money, thus there will be no refund.

For more information about your rights as a research participant you may contact the Chairperson, Kenyatta National Hospital/University of Nairobi Research and Ethics Committee, Prof. A.N Guantai at Tel No.2726300 ext. 44355/44102. Appendix 2: Consent Form

I have read this consent form. I have had the chance to discuss this research study with a study counsellor. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw any time without injustice or loss of any benefits. I freely agree to participate in this research study.

I understand that all efforts will be made to keep information regarding my personal identity confidential.

By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study: Yes No

I agree to fill the questionnaire Yes No

I agree to be interviewed Yes No

Participant signature/Thumb stamp _____ Date _____

Participant printed name: _____

Witness Name _____ Sign _____ Date _____

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has freely given his/her consent.

Researcher's Name: _____ **Date:** _____

Signature _____

Role in the study: _____

For more information contact----- at _____ from ----- to-----

Witness Printed Name

Name-----Contact information _____

Signature /Thumb stamp: _____ **Date;** _____

Appendix 2: Fomu Ya Maelezo Kuhusu Idhini

ANDIKO: Baada ya kiwewe kwa mgonjwa aliyelazwa katika kitengo cha wagonjwa wa akili.

Mchunguzi mkuu: Isabella Mirieril, Mscn, mwaka wa pili

Taasisi: Chuo Kikuu cha Nairobi

Unaulizwa uhusike katika uchunguzi ninaoufanya ninapotafuta shahada ya juu ya uuguzi kitengo cha wagonjwa wa akili.

Tungependa kuchunguza kuhusu utumiaji wa dawa za ziada kwa wagonjwa wa akili waliyelazwa. Kutakuwa na jumla ya wahusika mia moja na tisaini na sita, katika uchunguzi huu ambao watakuwa wamepeana idhini, kwa hiari, ya kuhusika. Utapewa orodha ya maswali ya utafiti huu ili uweze kujaza. Ukitoa idhini. Utapewa orodha ya maswali ya utafiti ambayo yatakuwa na sehemu mbili. Mambo ya kijamii, kitamaduni, kuhusu utumiaji wa dawa za ziada kwa wagonjwa wanao uugua akili na mtazamo wa wanafamilia. Maswali haya yatachukua karibu dakika ishirini. Jisni ya pili itakuwa ya mahojiano na mtaalamu, ambayo yatachukua karibu dakika ishirini na tano. Maswali yatalenga utumiaji wa dawa za ziada kwa wagonjwa wa akili sababu na changamoto zinazowapata.

Ujumbe utakaotoa utahifadhiwa kwa talakilishi lenye namba ya siri. Baadhi ya maswali katika mahojiano yatakuwa ya kisiri na yale ambayo utashindwa kutoa taarifa kuyahusu, utayaacha. Ujumbe kuhusu utumiaji wa dawa za ziada kwa mgonjwa wa akili. Ili kuhifadhi hisia zako, utahojiwa na mtaalamu. Hakuna faida ya moja kwa moja ukihusika kwa utafiti huu, hata hivyo, ujumbe utakaotoa utatuwezesha kushughulikia wagonjwa na wanafamilia, wafanyakazi wa hospitali jinsi ya kutumia dawa za ziada bila madala yeyote.

Hautahitajika kulipa chochote wakati wa uchunguzi huu ha hivyo hakuna fidia.

Ikiwa una maswali, maoni, mapendekezo au ufafanuzi wowote, unaweza kuwasiliana na katibu mkuu wa kitengo cha maadili cha Hospitali ya Kenyatta/ Chuo Kikuu cha Nairobi, Profesa A. G. Guantai, kwa nambari za simu zifuatazo. 2726300, eneo 44355/44102

Numesoma na kuelewa maelezo yote katika fomu hii kuhusu utafiti unaofanywa na ninakubali kwa hiari kushiriki. Kwa kutia sahihi hii, sijakata haki zangu kisheria katika utafiti.

Nimetoa idhini kwa hiari Ndio La

Nimekubali kujibu maswali Ndio La

Nimekubali Kuhojiwa Ndio La

Sahihi au Kidole gumba _____ Tarehe _____

Jina la mshiriki _____

Taarifa ya mtafiti

Mimi, niliyetia sahihi, nimetoa maelezo muhimu kikamilifu kuhusu uchunguzi huu kwa muhusika na ninaamini yakwamba ametoa idhini kwa hiari.

Mchunguzi Mkuu _____ Tatehe _____

Sahihi _____

Jukumu katika uchunguzi: _____ (Mchunguzi mkuu au masidizi)

Jina la shahidi _____ Tarehe _____

Sahihi _____

Kwa ujumbe wa ziada, wasiliana nami kwa nambari 0729982262

Appendix 3: Study Instrument for the Participant (Patient)

Questionnaire number Facility..... Ward

PI/designee initials

INSTRUCTIONS

Please do not write your name anywhere in the questionnaire.

Put a tick (✓) in box next to the right response

Where no responses/choices are provided please write the response in the spaces provided.

SECTION 1: SOCIO-DEMOGRAPHIC DATA

1. Gender. MALE FEMALE

2. How old are you?

a) 18-27 b) 28-37 c) 38-47 d) 48-57 e) 58-67

3. Ethnicity _____

4. Religion

A). Christian b). Muslim c).atheist others

5. Educational level.

a) Primary b) Secondary c) Tertiary d) None

Others specify _____

6. Marital status

Married Single Divorced

Others specify _____

7. Durational of illness

- a) 0-5 b) 6-10 c) 11-15 d) 16-20

SECTION.2: Awareness-culture-affordability/cost and duration of illness factors that influence patient's utilization of complementary alternative medicine Mathari National Teaching and Referral Hospital

8. Awareness of the use of complementary alternative medicine in maintenance of health

- a) Yes b) No

9. If No what are the reasons of not utilizing complementary alternative medicine

10. What type of complementary and traditional medicine have you received?

- a) chiropractic, b) homeopathy, c) acupuncture
d) prayers e) meditation f) exercise
g) laxative h) Massage i) Yoga
j) herbal medicine k) Nutrient l) animal assisted therapy

11. How have you been using your CAM and conventional treatment as your treatment progresses?

- a) Use the two to help each other
b) Use the CAM instead of the conventional medicine
c) Use conventional medicine instead of CAM
d) Others specify

12. What are the reasons for deciding to utilize CAM?

- a) You were disappointed that conventional medicine is not healing
b) you think CAM is important keeping with your belief, culture and your inner self
c) You want to control your treatment and your faith
d) You are trying anything that works
e) Conventional treatment lacks human touch

13. What benefits do you hope to get?

a) Relieve of symptoms of conventional treatment

b) Improve wellbeing {psychological/emotional hope improvement of physical }

c) Cure of your disease

e) Sleep and relaxation

f) Boost your immunity

h). Others specify

14. How do you acquire the products

a) Shops

b) Visiting the practitioners

Others specify

15. Do you discuss the use of complementary and alternative medicine with your health care worker?

a) Yes

b) No

16. If no what are some of the reasons that hinder you from discussing with health care worker

17. What are some of your cultural belief that support use of complementary medicine in your community?

a) Always b) Sometimes c) seldom d) Rarely

18. How do you acquire the products?

a.) shops

b.) visiting the practitioners

Others specify.

19. How do you raise funds for paying your complementary and alternative medicine?

- a) Salary
- b) Personal Business
- c) Family contributions
- d) Harambees
- e) Others (Please specify) _____

20. For family contributions/Harambees in question eleven(11) above how often do you organize for the fund raising?

- a) Weekly
- b) monthly
- c) Quarter yearly
- d) Yearly
- Other _____

21. Does your patient have a medical cover?

- a) Yes
- b) No

22. If yes does your insurance cover pay the services for complementary and alternative medicine products, practitioners' fee?

- a) Yes
- b) No
- Others specify.....

23. How much per dose do you pay?

- a) 0-1000
- b) 1000-5000
- c) 5000-10000
- others specify

24. In your own opinion what are the structures that support and regulate complementary and alternative medicine

- a) Church
- b) Community
- c) Government
- d) Specify others

Appendix 4: Study Instrument; Sehemu ya Kiswahili

Sehemu 1: Data za idadi ya watu

1. Jinsia Kiume Kike

2. Je una miaka ngapi?
a)18=27 b)28-37 c)38-47 d)48-57 e)58 na kupita

3. Kabila -----

4. Dini
a) Mkristo b) Muislam c)Mukanamungu/yubo Na nyingine

5. Kiwango cha elimu
a) Msingi b) Sekondari c) Elimu ya juu d) Hakuna

Nyinginezo_____

- 6.Hali ya ndoa
a) Ndoa b) Moja c)Talaka d) Nyinginezo

- 7.Takriban kiasi gani ndio mapato yako ya kila mwezi?
a) Ksh1,000-10,000 b) Ksh10,000-20,000 c) Ksh30,000-40,000 d)
Ksh50,000-60,000

Nyinginezo(Tafadhali weka bayana) _____

- 8.Muda mgani umekuwa na ugonjwa huu?
a)0-5 b) 6-10 c) 11-15 d)16-20 nyinginezo-----

Sehemu ya pili; Sababu ambazo huathiri matumizi ya dawa za ziada mbadala

9. unafahamu ujumbe juu ya dawa za ziada

Ndio

La

10. kama ni la unawesa kusema sababu

11. umewai kutumia dawa za ziada ipi

- a) Chiropractic b) Homeopathy c) acupuncture
- d) Maombi e) kutafakari f) mazoezi g) laxative
- h) massage i) yoga j) dawa za mitishamba
- k) madini l) Mnyama kusaidiwa tiba

12. Sentensi zifuatazo inaeleza jinsi umekuwa ukitumia CAM na matibabu ya kawaida

- a) Kuanza matibabu ya kawaida tu wakati kusimamishwa CAM?
- b) Kuanza CAM baada tu ya wewe kumaliza matibabu ya kawaida?
- c) Ni kutumia CAM kwa wakati mmoja kwa kutumia matibabu ya kawaida?

13. Ni sababu gani ya kuamua kutumia CAM. Unaweza kuchagua zaidi moja

- a) Ulikuwa tamaa kwamba dawa za kawaida si uonyaji.
- b) Unafikiri CAM ni muhimu kuweka na imani yako na utamaduni na wewe ndani kwa ujumla
- c) Unataka kudhibiti matibabu yako na Imani
- d) Wewe ni kujaribu kitu chochote kinafanya kazi
- e) Matibabu ya kawaida ina

14. Jinsi gani unapata bidhaa

- a) Maduka
- b) Kumwona daktari

15. Faida gani unamatumaini ya kupata

- a) Kupungusa dalili za matibabu ya kawaida
- b) Ustawi muhimu na kisaikolojia/matumaini hisia

- c) Tiba ya ugonjwa wako
- d) Usingizi na utulivu
- e) Uboreshaji wa maslahi ya kimwili
- f) Kuongeza kinga yako
- g) Nyinginezo

16. Ni nani aliyeanzisha wewe kwa dawa za ziada na mbadala?

- a) Binafsi
- b) Huduma ya mtoaji
- c) Mganga wa jadi
- d) Vyombo vya habari
- e) Nyingine kujata -----

17. Unajadiliana kuhusu matumizi ya dawa za zaida na za mbadala na mfanyakazi wa huduma za afya

- a) ndio
- b) la

18. Kama ni la eleza sababu zinazokuzuia wewe kutotaka kujadili na mfanyakazi wa hudumu za afya -----

19. Ni nini baadhi ya Imani yako kiutamaduni kuunga mkono matumizi ya dawa za ziada ndani ya jamii yenu

- a)kila wakati
- b)wakati mwingine
- c)nadra
- d)nadra

20. Unapata wapi fedha za kulipia dawa za ziada na za mbadala?

- a)mshahara
- b)biashara za kibinafsi
- c)mchango wa familia
- d)harambees

Nyingine (Tafadhali weka bayana)_____

21. Kama ni mchango wa familia au harambees kwa swali(22)hapo juu, marangapi kupanga kwa mfuko wa kuongeza

- a)Kila wiki
- b)Kila mwezi
- c)Kila robo mwakani
- d)Kila mwaka
- e)nyingine

Nyingine(Tafadhali weka bayana) _____

22. Je mgonjwa wako ni mwanachama wa mfuko wa bima ya hospitali?

- a) Ndio
- b)La

23. Je mgonjwa wako anabima?

a) Ndio

b)La

24. Ni muundo gani zinazosaidia na kudhibiti dawa za ziada na mbadala

a) Kanisa

b) Jamii

c) Serikali

d) Nyingine kutaja -----

Appendix 5: Clearance to Undertake Research in Mathari Hospital

MATHARI HOSPITAL

CLEARANCE TO UNDERTAKE RESEARCH IN MATHARI HOSPITAL

TO: Ward in Charges - Civil side Dates 11/07/2017

This is to inform you that (name/no. of students)

ISABELLA MIRIERA

From (Name of training institution)

UNIVERSITY OF NAIROBI (U.O.N)

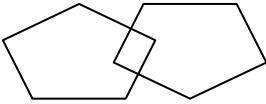
Has/have been cleared by the office of the Medical Superintendent to undertake research at Mathari hospital from 11/7/2017 to 11/8/2017.

Please accord them/him/her the necessary support.



Appendix 6: Mini-Mental State Examination (MMSE)

Patient's Name: _____ Date: _____

Maximum Score	Patient's Score	Questions
5		"What is the year? Season? Date? Day of the week? Month?"
5		"Where are we now: State? County? Town/city? Hospital? Floor?"
3		The examiner names three unrelated objects clearly and slowly, then asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible. Number of trials: _____
5		"I would like you to count backward from 100 by sevens." (93, 86, 79, 72, 65, ...) Stop after five answers. Alternative: "Spell WORLD backwards." (D-L-R-O-W)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.
1		"Repeat the phrase: 'No ifs, ands, or buts.'"
3		"Take the paper in your right hand, fold it in half, and put it on the floor." (The examiner gives the patient a piece of blank paper.)
1		"Please read this and do what it says." (Written instruction is "Close your eyes.")
1		"Make up and write a sentence about anything." (This sentence must contain a noun and a verb.)
1		"Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.) 
30		TOTAL

(Adapted from Rovner & Folstein, 1987)

Interpretation of the MMSE

Score	Interpretation
24-30	No cognitive impairment
18-23	Mild cognitive impairment
0-17	Severe cognitive impairment

Appendix 7: Key Informant Interview Consent Form for Nurse Managers

Hello! My name is Isabella Mirieri. I am a postgraduate student pursuing Master of Science in Nursing (Mental health/Psychiatric Nursing) at the School of Nursing Sciences, of the University of Nairobi.

I am carrying out a study on “factors that influence patient utilization of complementary and alternative medicine at Mathari Hospital”. I am inviting you to participate in this study. The findings from this study are expected to provide baseline information on what influences the utilization of CAM and this may help in designing strategies and policies to promote the effective utilization of CAM in treating mental/psychiatry condition and reduce mobility disability and death.

If you decide to participate, I will have an interview session with you which will take about 15-20 minutes. You will be asked questions about your experience concerning the utilization of Cam in mental/psychiatry.

The interview session will be audio-recorded. At the end of this session, the audio-recorded information will be replayed to you for confirmation. Thereafter the information will be transcribed by researcher for analysis.

The information provided not to be linked to you. Your name does not appear in any way during the interview process. Whatever said during this discussion will be kept confidential.

If you accept to be part of this study, please sign your name.

I, _____, want to be in this research study. (Signature) _____ (Date) _____ f
your

vey. JAMA 280(18):1569–1575.

Appendix 8: Consent Form for Audio-Recording

Title of Study: Factors that influence patient utilization of Complementary and Alternative Medicine at Mathari National Teaching and Referral Hospital

Principal Investigator: Isabella Mirieri, Master of science in Nursing Student.

This study involves the audio or video recording of your interview with the researcher. Neither your name nor any other identifying information will be associated with the audio or audio recording or the transcript. Only the research team will be able to listen (view) to the recordings.

The tapes will be transcribed by the researcher and erased once the transcriptions are checked for accuracy. Transcripts of your interview may be reproduced in whole or in part for use in presentations or written products that result from this study. Neither your name nor any other identifying information (such as your voice or picture) will be used in presentations or in written products resulting from the study.

By signing this form, I am allowing the researcher to audio or video tape me as part of this research. I also understand that this consent for recording is effective until the following date: _____. On or before that date, the tapes will be destroyed.

Participant's Signature:

_____ Date: _____

Institutional affiliation: University of Nairobi.

Appendix 9: In depth Individual Interview Guide Nurse Managers

I am going to ask you a few questions regarding the use of complementary and alternative medicine in mental health/psychiatrics. I expect this session to be as interactive as possible. Be as truthful as you can. In the process of discussions tape recording of the proceedings may take place. In all issues respect, confidentiality, dignity and responsible behaviour will be observed. All issues discussed will be only for the purposes of this research and will not be mentioned in any other forum. In case you don't understand any of the questions kindly seek clarification. Let us now discuss each of the following questions.

In depth individual interview for Mental health/Psychiatrist Nurse)

1. Kindly explain how you acquire knowledge on complementary and alternative medicine (traditional
- 2 Please tell us whether you specialise in complementary and alternative medicine
3. Kindly feel free to give us your recommendation on complementary and alternative medicine.

Appendix 10: Letter to the University of Nairobi



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355



KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/161

10th May 2017

Isabella Mirieri
Reg. No.H56/82845/2015
School of Nursing Sciences
College of Health Sciences
University of Nairobi

Dear Isabella

REVISED RESEARCH PROPOSAL – EVALUATION OF UTILIZATION OF COMPLEMENTARY AND ALTERNATIVE MEDICINE BY PATIENTS ADMITTED IN MATHARI NATIONAL TEACHING AND REFERRAL HOSPITAL (P91/02/2017)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above revised proposal. The approval period is from 10th May 2017 – 9th May 2018.

This approval is subject to compliance with the following requirements:

- Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH-UoN ERC before implementation.
- Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

Protect to discover

Appendix 11: Study Time Line for the Study

Months activity	Feb 2017- Mar 2017	April 2017- May 2017	Jun-Aug 2017	Sept 2017- Dec 2017	Jan 2018- May 2018
Proposal Development					
Approval from ethical committee					
Data collection and analysis					
Report writing					
Presenting Report					

Appendix 12: Budget

ACTIVITY	ACTIVITY DESCRIPTION	ITEM	UNIT OF MEASUREMENT	UNIT COST	TOTAL IN KSH.
LITERATURE REVIEW	Search for literature in libraries	Transport	15 days	300@	4,500
		Subsistence			
	Internet services	Browsing for 2hours daily	40 days	200@	8000
	Stationary	A4 notebooks	2	100@	200
		Biro pens	10	15@	150
		Pencils	5	20	100
		Rubber	2	25@	50
		Proposal printing	6 drafts	400@	1600
Photocopying		200pages	2@	400	
Questionnaire Translation	2	3000	11326		
APPROVALS		KNH ERC	1	1000@	1000
		Ministry of Science and technology	1	1000@	1000
SUBTOTAL					23,000
RESEARCH	Pre-testing	Transport and Subsistence	2 days	600@	1200
		Printing and typing questionnaires	20 copies	10	200
		In-depth interview	25 session	1000	1000
	Questionnaires	Photocopying	200 copies	2@	400
	Data collection	Transport and subsistence	30 days	500@	1500
Research		8 sessions	500@	4000	

		Assistant Questionnaire	30 days	1000@	30,000
	Data processing and Analysis	Statistician			35,000
Subtotal					89,300
Reports	Draft report	Printing and photocopying	5 copies	400	2000
	Final report	Printing and binding	8 copies	500	4000
		Miscellaneous			
Subtotal					24,000
Grand total					138,300

Justification of the Budget

Proposal writing 45,000 transport, internet, Stationed printing /photocopy source self
Data collection 50,000 printing/photocopy, research Assistant, transport source self
Report Writing 40,000 printing/photocopy, static Ian, transport, miscellaneous source self