RISK FACTORS ASSOCIATED WITH NUTRITIONAL STATUS AMONG THE OLDER PERSONS IN SELECTED HOMES FOR THE AGED IN NAIROBI AND KIAMBU KENYA.

BY

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AUGUST, 2005
DECLARATION

“This thesis is my original work and has not been presented for a degree in any other University or any other award”.

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“We confirm that the work reported in this thesis was carried out by the candidate under our supervision”.

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DEDICATION

To my late father, whose parental guidance has enabled me reach this far.

To the glory of God, for his sufficient grace throughout my life.
ACKNOWLEDGEMENT

I would like to express my sincere appreciation to all whose contribution made the completion of this thesis possible.

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Special thanks go to my brother Andrew and my husband Major Ngare for their financial and moral support that helped me embark on and complete the study.

Finally I wish to thank Corporal Msungu for typing assistance.

To all I say, “Thank you”.
ABSTRACT
Nutrition plays an important role in aging and health. Little is documented on the risks of relocation from home to an institution in relation to the nutritional status of the older persons in Kenya and other developing countries. The purpose of the study was to investigate risk factors associated with nutritional status of the older persons in the homes. The objectives of the study were to; establish the risk factors associated with nutritional status of the older persons in these homes and identify the relationship between risks that have an effect on nutritional status. A conceptual framework derived from Help age International publications guided the study. A descriptive survey design using a multi instrument approach was used. All the 69 (sixty nine) older persons aged between 63 (sixty three) and 107 (a hundred and seven) from the two homes whereby 50 (fifty) came from Nyumbani situated in Nairobi while 19 (nineteen) came from Thogoto in Kiambu were used to provide the required data. Data were collected using an interview schedule for the older persons; self-administered questionnaire for the nurse and social worker in the two homes and an observation checklist. Food frequency table and anthropometric measurements were used to provide information on growth and development in size and composition. Data were analyzed using both qualitative and quantitative means whereby SPSS Version 8 computer analysis package was used and statistics such as means, percentages, standard deviation, Pearson’s correlation and cross tabulations were used to organize, describe and summarize the data. Risks found to be associated with poor nutritional status included; health problems, economic problems, lack of social contacts, food intake obstacles, food frequency, and amount of care given, lack of exercises, and advanced age. There were equal numbers of the older persons who were severely, moderately and mildly malnourished were 2 (3.2%). Those with normal nutritional status were 46 (73.0%) while overweight or grade 1 obesity were 8 (12.7%). Nyumbani was found to have a mean nutritional status of 22.4 while Thogoto had 19.5. Females had an average of 22.4 while males had 21.1 nutritional status. The study found that health conditions formed major risks to the older person’s nutritional status. Economic ability influenced the foods eaten in the home. Lack of social contacts brought about emotional/psychological stress, which then influenced food intake and utilization. Refusal to eat so as to control incontinence acted as a nutritional risk. Other risks that had an influence on nutritional status includes; the food frequency, amount of care given, lack of exercises that would have boosted the nutrient absorption and food intake. Advanced age also acted as nutritional risk as increase in age nutritional status declined ($r=-0.54$, $P=0.007$). The study recommends that a similar study comparing the risks that are present in different living condition those living alone, with relatives, in the streets and those in the homes. Also the NGOs that concentrate on children and mothers should include the older persons in their service provision, as they are equally vulnerable.
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CHAPTER ONE

1.0 INTRODUCTION

The twentieth century has seen profound changes in the world’s demographic profile with a transition from high birth and death rates to low fertility and mortality. The result of this is a marked increase in both the absolute number and relative proportion of older people in developed and developing countries (Help Age International, 2000). In developed countries, increases in life expectancy have largely been accompanied by socio-economic development but the emerging scenario is very different in developing countries with the older persons facing a longer life of economic deprivation and hardship (Shulz, 1999). The majority of older persons in developing countries enter old age after a lifetime of poverty, a diet that is inadequate in both quantity and quality and a lifetime of disease and poor access to health care (Kaseke, 1999; Mpathekombi, 2000).

Aging is a process experienced by all living creatures as they approach their predestined lifespan. It is intrinsic, deleterious, universal, progressive and irreversible. It begins when growth and development cease and it is a uniquely individual experience that is affected by many factors over which individuals have little control (Chernoff, 1991). Society and tradition have provided an arbitrary age of 65 years as demarcation between middle age and old age that has no basis
in the study of human process (Chernoff, 1991). In African societies older persons are defined as those who are unable to contribute actively to the labor and obligations of adulthood (United Nations, 1991). The United Nations defines older persons as those aged 60 years and above. However, in Africa, formal retirement age ranges between 55 years and 65 years. Approximately ten percent of the working age population is employed in the formal sector. The definition of old age by African communities also differs to that in developed countries. In many African settings the United Nations definition is inappropriate or irrelevant. In rural situations where birth registration is poor or even unknown, physical features are commonly used to estimate a person’s age. The color of a person’s hair, failing eyesight and disease such as arthritis are some features used to define an older person. More complex definitions embrace a host of social and cultural issues and may include for example the person’s seniority status within his/her community and the number of grand children, which he/she has (United Nations, 1991).

The problem of the definition of old age may seem fairly obvious and unimportant but this is not so. Definition affects older person’s access to services, policy and resource allocations (United Nations, 1991). The study used the UN definition because the older persons found in the homes were in the category that UN has recognized as older persons. Their ages ranged between sixty three and a hundred and twelve years. The study’s main aim was to identify risks found in the homes that would have a negative effect on nutritional status.
1.1 BACKGROUND INFORMATION

In its recent publication the United Nations (1991) demonstrated that the number of older persons throughout the world is increasing very rapidly. The increase is more evident in the developing world where the rates of population growth are high and the gains that have been made in the area of health and nutrition are showing positive results. Projections are that by 2050, the population of older persons will for the first time in the history of mankind be more than that of children under the age of 14 years (United Nations, 1991, US Bureau of Census, 1999). Africa alone is projected to register a phenomenal increase from the current estimate of slightly over 38 million to 212 million in 2050 (US Bureau of Census, 1999). The population of older persons aged 64 years and above in Kenya is estimated to be 1,148,000 according to the 1999 population census (Central Bureau of Statistics, 1999). This number is approximately four percent (4%) of the total population. This figure is expected to rise to 3.5 million in the year 2025 (World Health Organization/Help Age International, 2000).

Food, which is a human basic need, affects people’s quality of life and their ability to contribute socially and economically to the family and community (Ochola, 2000). It is a fact that very little is known about the specific nutritional risk of the older people in Africa. Malnutrition is one of the factors that contribute to poor health of the older persons hindering active participation in different activities as
well as forming a major nutritional risk (Help Age Ghana, 1999). Unlike other demographic groups, the nutritional risks of the older persons in Kenya are not clearly understood and documented. The nutritional status of the older persons has not been viewed as critical as that of mothers and children less than five years of age. Although older persons have been acknowledged as vulnerable, various responses in the country have not yet met their nutritional needs. The older persons are prone to poor dietary food intake precipitated by gum problems and loss of teeth. Socio-economic deprivation brought about by poverty, social isolation lifestyles and stressful life events for example recent bereavement (Horwarth, 1989) make the elderly susceptible to poor nutritional status.

One acknowledging fact that is now becoming evident is that the nutritional problems of the older persons are wanting. A few localized studies on small samples have addressed the nutritional and food security issues of the older persons (Kigutha, Van and Hautvasr, 1988; Ethangatta, Gee and Hawrsh, 1996; and Waswa, 1988). The older persons are a more diverse population than any other age groups. Each individual has widely varying capabilities and levels of functioning (Shils, Olsan and Shike, 1994). On the whole older persons are more likely than younger adults to be in marginal nutritional health and thus be at high risk for nutritional deficiency in times of stress or health care problems. Physical, social and emotional problems may interfere with appetite or may affect the ability to purchase, prepare and consume an adequate diet. These factors include,
whether or not a person lives alone, how many daily meals are eaten, who does the shopping and cooking, physical impediments that make shopping, cooking and eating impossible as well as problems in chewing and denture use. Inadequate income to purchase appropriate foods, use of alcohol and medication, and a decline in organ function normally accompanies the aging process, especially in the older, older persons, those who are more than 80 years old. Many of these changes in normal function might reasonably be expected to influence nutrient needs of the individual (Shils, Olsan and Shike, 1994).

The economic and political situation in many African countries is straining the traditional family care structure (Daily Nation Newspapers, 1996). Wars, conflicts, diseases, change in power structures and economic hardships are making it difficult for some families to provide care and support to older persons. This has resulted to establishment of homes for the aged (Kaseke, 1999).

The development of institutions of the older persons started in the West, well before 1601 (Corinne, Linda and Eleanor, 1992). Problems of homelessness, destitution, abandonment and isolation made older people’s homes necessary. In Africa, the concept is growing with disintegration of family, which traditionally provided old age care, and the destitution of the aged resulting from the loss of informal care by the family (Odhiambo, 1993). This is attributed to rapid change that has characterized the African society (Odhiambo, 1993). The major factors
that lead the aged to residential care include economic, social and medical constraints (Kate, 1999). The most important major role that the institutions play is to provide the basic needs of food, shelter, clothing, medical and personal care for those incapacitated.

The development of older person’s homes in Kenya has been attributed to destitution (Help Age Kenya, 2001). Although a few older persons still receive care from their families not all have family circles in which they can get this care (Eldemire-and Change, 1999). The effects of the Second World War contributed much to the development of homes for the older persons. People who participated in the war either came back too late to marry or found their families disintegrated. Most of them got employed by the missionaries who upon getting retired had nowhere to return to and continued staying in various missions until they could not work anymore. They continued being taken care of by the various missions that they worked for. When the number of those who had nowhere to go became large the missionaries found it necessary to start homes where they could also incorporate their retired priests and nuns to be taken care of by employed caregivers. Such is the history of Nyumbani ya wazee and Thogoto home for the aged. Nyumbani ya wazee is run by the Catholic nuns while Thogoto is under the Women Guilds of Presbyterian Church of East Africa.
Various risk factors are associated with institutionalization that has negative impact on the older person’s nutritional status. Financial strains in these homes, lack of social contacts with those close to the elderly, emotional problems as a result of discrimination by caregivers, little knowledge about nutritional needs of the older persons by caregivers and lack of support in performing activities that one is unable to do, for example moving about for those immobilized and helping in feeding.

1.2 HISTORY OF THE HOMES UNDER STUDY

From pamphlets available at the home, Nyumbani ya Wazee is a Catholic Church institution run by nuns from little sisters of the poor. It is situated at Kasarani opposite Moi International Sports Center. The congregation of the little sisters of the poor started it in 1985 on a donated land from queen of apostles’ seminary. It caters for different people from different backgrounds. Some were brought there since they were destitute and had no families to take care of them especially those who participated in the Second World War and some who had been jailed for long such that after release they could not fit into the society by having families of their own. They either found their immediate families dead or came back too late to be incorporated into the families. They were either employed by Catholic Missions or stayed alone and were taken care of by Catholic Missions near them. Upon aging and retirement these older persons had nowhere to go so the various missions
brought them into the home. Others have families but for various reasons brought them into the home. The families pay the institution for the upkeep of their parents. The others are the retired priests and nuns who are too old to continue with their missionary work. Nyumbani ya Wazee currently has a total of fifty-eight elderly persons.

Pamphlets available at the Thogoto home for the older persons on the other hand stated that the home was started in 1967 by the Thogoto Woman’s Guild, which comprises of eight parishes. The idea was to bring together old and homeless men and women left without shelter after the emergency crisis of 1952 to 1962. Today it caters for lonely, poor and sometimes sick older persons who have nobody to take care of them at their respective homes. The Woman’s Guild requested the church to give them the old buildings, which were not in use and additional four acres. Later with the help of the Lion’s Club Nairobi Central, they put up a stone building block, which acts as dormitories for up to thirty people. Each parish provides money, food and clothing for three months and the home costs the Guild KShs 100,000.00 per month. They usually have twenty people due to high costs and lack of any project that would generate income. By the time of carrying out the study the home had nineteen older persons.
1.3 STATEMENT OF THE PROBLEM

Gerontological research has increased dramatically over the past three decades and yet some of the basic facts about the nutritional status of the elderly in the homes in most countries, especially in developing countries, are still not known. There can be no escaping from the fact that ageing will become one of the most important issues needing to be addressed in developing countries in the next few decades (Goiton, 1988). The idea of institutionalization of the aged or homes for old people is an alien one in Africa (Kangongo and Onyango, 1984). The practice is considered as inconsistent with traditional beliefs and practices that formed part of the African culture, whereby the aged were cared for by their children and members of the extended family (Adjetey-Sorsey, 2000). A number of older persons can no longer get care from or within their families, relatives or immediate natural environs. They face some of the most challenging problems especially in Africa. Some of these challenges include personal health, disabilities due to long-term childhood diseases and poverty (Judith, Tony and Deborah, 1999). Others are faced with effects of HIV/AIDS, lack of social welfare and economic hardships. Also challenges such as civil wars, lack of adequate shelter and lack of enough nutritious food (Nhongo, 2000). All these challenges make them leave their natural habitats and move to older persons homes for institutional care.
A number of studies have found out that relocation from home to an institution can result in physical, physiological, psychological, social deterioration and even death (Cox, 1976). The study seeks to find out how these factors act as nutritional risks for the older persons. This is because there is limited documented information on how the effects of relocation impacts on the nutritional status of the older persons in Kenya. The study will also seek to compare individual home to the nutritional status of the aged.

1.4 PURPOSE OF THE STUDY

The major purpose of the study was to investigate risk factors that have an effect on the nutritional status among the older persons living in the homes.

1.5 OBJECTIVES

The specific objectives of this study were: to;

1. Identify risk factors associated with the nutritional status of the older persons at Nyumbani and Thogoto homes.
2. Determine the nutritional status of the older persons in both homes.
3. Establish the relationship between risk factors that have an effect on nutritional status.
1.6 SIGNIFICANCE OF THE STUDY

With the increasing number of the older persons, it is important that the caregivers understood the importance of good nutrition towards better health and nutritional status. This will help the older person’s age in a healthy way and prolong their lifespan. The study will be of value to the older persons themselves, as they will understand how their bodies react to various situations and conditions so they will be in control. The NGO’s will benefit from the study, as they are involved in humanitarian services so that they will include the older person’s special needs in their service provisions. The study will be of benefit to the government through the NGOs in that it will be able to come up with plans and policies that are specific to the older persons. The current registrations are not specific to the older persons.

1.7 LIMITATIONS OF THE STUDY

The study’s major limitation was that the findings will be generalized to other older persons living in similar environments and to others living in different environments but with caution.
1.8 CONCEPTUAL FRAMEWORK

Figure 1.1 describes the relationship between various risk factors that likely affect and lead to poor nutritional status among the elderly.

Figure 1.1 Relationship between risks affecting nutritional status of the older persons. Adapted from (Help Age Kenya, 2001).
Physical Disability

This is taken to mean the inability to do the day-to-day activities independently. For example, poor eyesight, poor mobility, that affects feeding and ability to do things for self. Physical disability affects the ability to socialize and do any economic activities. Physical disability is also closely associated with psychological and emotional depression due to lack of independence. Physical disability also has an effect on functional ability, which results in lack of strength even to undertake the simplest activities. Physical disabilities decreases food intake in that one is not able to feed himself or herself optimally.

Functional Ability

This is associated with lack of strength and poor coordination with poor strength, which brings about inability to work so any income generating activity, can not be undertaken. It also affects physical ability of an older person. This results to reduced socio-economic ability leads to reduced purchasing power and this also results to reduced food intake. Also inability to feed causes reduced food intake.

Socio-Economic

Since in most of the homes the elderly suffers from both physical disabilities and functional disabilities, this means that they can not engage themselves in any meaningful income generating activities. They therefore depend on the goodwill of the sponsors of the home and if the sponsors are not capable then their food is reduced in order for what is available to take them for several days which will not be the case if they are able to engage in income generating activities.
**Food Intake Obstacles**

Some of the factors that act as food consumption obstacles include poor health for example lack of teeth. Physical inabilities for example being unable to feed independently because of sicknesses affects food intake. Also due to social and economic problems of the homes act as a nutritional risk if the home cannot be able to purchase enough food for its older persons. This directly affects food intake leading to poor nutritional status.

**Psychological Effects**

Loss of family ties brings about emotional stress to the elderly, especially if this is what led to their institutionalized. Due to these stresses they refuses to feed either due to loss of appetite or because they want to accelerate their death to reduce their misery. Poor health among the older persons also causes them emotional stress as well as being physically unable to function leading to reduced food intake then poor nutritional status.

**Health, meal environment and distribution**

Old age is closely associated with poor health. Health affects food intake, digestion and utilization. Food may be present but due to poor health the body may not maximize its nutrients. Also due to the medication involved in any sickness food eaten may not be utilized by the body as a result of food drug interaction. New environment brings about new changes in terms of food, ways of doing things, which leads to emotional stress and reduced appetite. This affects the nutritional status of an individual.
Loss of family ties

Being away from where one has loved ones to a different place with no relatives or people associated with can result to emotional confusion. At the same time it can reduce food intake either because of the change in types of food, method of cooking and the amount. All these factors are further discussed in the following chapter on their effect on nutritional status.

1.9 DEFINITION OF TERMS

1. Older persons are people aged sixty years and above.

2. Risk factor is any situation that reduces access to basic needs leading to poor nutrition and health.

3. Nutritional status is health status of an individual or population groups as influenced by intake and utilization of nutrients.
CHAPTER TWO

2.0 REVIEW OF LITERATURE

Minimal work of the risks associated with nutritional status among the older persons in institutions has been documented in Africa and other developing countries. This is because older persons are seen as low priority by most humanitarian agencies and very few organizations develop programs that consider their specific needs (Help Age Kenya, 2001). The lack of relevant literature in the developing countries means that the bulk of literature reviewed in the study is from the Western or developed countries.

Literature is reviewed under the following topics. Definition of older persons, functional ability, social life or family ties, psychological/emotional stress, socio-economic difficulties, health, disabilities, food intake obstacles and nutritional status. These topics are each linked to nutritional status.

A risk factor is a situation, which reduces access to the basic needs and leads to poor nutrition and health (Jim and Steward, 2002). Although the concept of institutionalizing older people started in the west well before 1601, it was not until the 1960’s that it started in Kenya. Problems of homelessness, destitution,
abandonment, isolation and ill health made older people’s homes necessary as a last resort (Odhiambo, 1993).

Institutional care for older persons just like family and community care has problems. The lack of interaction of older people with the outside community makes institutions more like prisons. Older people’s homes do not often encourage liberty, and they depersonalize the older persons causing them to lose autonomy (Help Age International, 2002). The homes are also seen as dumping places to avoid taking care of the older persons by families. The homes do not encourage growth and development among older persons limiting the amount of contribution they make to their communities (Help Age International, 2002).

2.1 DEFINITION OF AN OLDER PERSON

Older persons are those who are near the end of life long process of aging. They are those who are close to death simply because of years and physical conditions. Biomedically, aging is defined as the deteriorative changes that occur in the post-reproductive period when the human organism has completed the task of perpetuation of the species (Alford and Borgle, 1982) cited in Kuria, 1995). Chronologically, age is the number of years a person has lived since birth. Functionally and socially an older person is defined as someone who has grand children, a person who has grey hair or in the case of women, one who can no
longer have children (United Nations, 1991). United Nations, (1991) reveals that aging consists of three sets of processes, which are biological, psychological and social. These three processes are all systematically interactive with one another over the life course. Health and nutrition agencies tend not to include or even consider older people for interventions. There are a number of reasons for this, which include lack of knowledge of their specific nutritional needs; failure to consult with the elderly on their perception of nutritional vulnerability; a tendency to regard older people as an unproductive group; lack of criteria to define relative risk within this group and an assumption that the community would take care of older people (Ochola, 2000). The study therefore seeks to determine risk factors that are specific to the old persons living in homes since different living conditions have different risk factors.

2.2 FUNCTIONAL ABILITY

Functional ability means the ability to perform basic activities of daily life without support, which is basic to overall independence and quality of life (Manandhar, 1995). Muscle strength decreases with aging (Yvonne and Victoria, 1997). Functional inability, muscle strength decrease and aging affect the older person’s ability to perform basic tasks such as bathing and feeding. This in turn affects food intake. Mobility impairment can affect nutritional status by impending participation of socialization of eating patterns while we know social life is
characteristic of homes for the aged. Manual ability or ability to use one’s hands proficiently is of importance since lack of the ability to use ones hands leads to inability to or difficulty in holding utensils which can act as an embarrassment. Inability to use ones hands in itself leads to reduced food intake thus affecting nutritional status. The case of institutionalized elderly is lacking considering that eating is done communally (Manandhar, 1995).

Nutritional deficiencies in the older persons also result in poor cognitive and physical functioning (Rosenberg and Miller, 1992). Poor cognitive and physical functioning consequently leads to poor nutritional status as an older person can forget to feed and be unable to feed without support, which sometimes can be unavailable. There exists a gap in that all this information is general to all the elderly but specific information on functional disabilities of the older persons living in the homes is lacking which is what the study sought to find out.

2.3 PHYSIOLOGICAL DISABILITIES

Sensory impairment is one of the physiological factors, which diminishes with age at varying rates and is likely to influence dietary intake (Chandra, 1991). The causes of decline in taste and smell with advancing age are unclear but there are some factors that have been associated with physiological factors. A reduction in the number of taste buds with age affects the way taste sensations are processed in
the central nervous system. Reduced taste and smell sensation affects food intake by decreasing the palatability of the food. They have an impact on the nutritional status of the older people (Chandra, 1991).

In addition to taste and smell, the texture and appearance of food also influences food consumption. There is a decline in the number of olfactory cells and a loss of neurons in the olfactory bulbs during aging and a decrease in the volume of saliva secreted. The decrease in the amount of saliva secreted then means that digestion is slowed down since the salivary enzymes secreted are in inadequate quantities (Chandra, 1991). Reduced saliva secretion affects digestion of food both in the mouth and stomach reducing the available nutrients for absorption by the body, which has a direct influence on nutritional status. The study sought to establish the physiological disabilities present in the older persons living in the homes. It also establishes how these disabilities acts as nutritional risks.

2.3.1 GASTROINTESTINAL CHANGES

Loss of teeth, a common problem among older persons, leads to chewing difficulties (Chandra, 1991). This affects the type of food eaten and hence nutrient intake. The tendency is switching to soft foods, which usually have fewer nutrients and that leads to constipation (Munro and Gunter, 1992).
With advancing age, the mucus membrane lining the stomach tends to get thin, partly due to atrophy degeneration of mucus glands and gastric glands. As a result, there is decreased gastric secretion of hydrochloric acid, pepsin and intrinsic factor which leads to impaired protein digestion (pepsin). Less efficient absorption of vitamin B-12 due to lack of intrinsic factor and a greater possibility of bacterial contamination of gastric juice since the mucus that protects the intestine wall is exposed. The most affected nutrients are iron, calcium, copper, zinc, folic acid, vitamin B-12 and protein.

Furthermore, there is a general degeneration of the layers that make up the walls of the small intestine and this reduces the surface area across which absorption occurs (Munro and Gunter, 1992). There is also a gradual decline in production of most enzymes and bile which make the digestion and absorption of food slower and less efficient, especially the absorption of fat, fat soluble vitamins and calcium. The effect of less efficient digestion and absorption is poor nutritional status.

2.3.2 METABOLIC CHANGES

After the age of 50 years, basal metabolic rate (BMR) is known to decline by 10-15% or more owing mainly to a decline in lean body mass (Chandra, 1991). The reduced BMR, a decline in body mass and reduced activity level leads to a considerable reduction in energy requirements, which in turn leads to low energy
intake and poor nutritional status. Food eaten should therefore be nutrient dense otherwise it will have a serious effect on intake of other nutrients.

Apparently the older person's body can only handle small quantities of food at a time. The older person should eat small but frequently meals. However in a home where food is served at specific times, this frequency may be difficult to attain.

Excessive alcohol consumption affects the intake of other nutrients since old people will not remember to eat. Alcohol intake also gives a feeling of being full and this is dangerous for older people who need to feed frequently (Chandra, 1991). The study seeks to investigate alcohol consumption among the older persons as well as to find out other factors that bring about metabolic changes.

2.3.3 INCONTINENT AND SEVERE CONSTIPATION

Incontinence is defined as uncontrolled loss of urine, which causes a hygiene and social problem. This can be caused by physical problems such as urinary infection and dementia (loss of memory) (Chandra, 1985). This can also be brought about by sedations (calming medicines). This medication makes a person to forget about passing urine. Water tablets (diuretics), given for heart conditions increases the amount of urine making it unmanageable for the older persons. Quite often, incontinent is a problem of older people who are often ill. Sometimes the flow of
urine is blocked often due to enlargement of the neck of the bladder (prostate gland) in men and by a dropped womb (prolapsed) in women or by constipation. These conditions isolate older persons and cause them to eat less or nothing for fear of embarrassment especially when living in a communal place like a home. This depends on how the elderly are kept and made to understand their conditions.

Soiling due to constipation is also common among the older persons (Chandra, 1985). It brings a lot of embarrassment to the elderly who tends to avoid food to control it. The case of older persons in institutions is not documented and considering that they live communally a gap is clear. Severe constipation results to hard rock like stools, which builds up in the bowel. A foul smell brown liquid forms around the stool and trickled uncontrollably out of the body. In order to avoid all this mess most older persons avoid food or only consume liquid foods, which lacks nutrients thus making them nutritionally vulnerable.

2.4 FOOD INTAKE OBSTACLES

Metabolic and physiological barriers to proper nutrition are minor compared to those factors that regulate the actual food intake. Water is of course essential for all biological functions in the body. Since water is lost in many common conditions such as diarrhea, fever and renal diseases, the risk of dehydration in the elderly is common (Munro and Gunter, 1992). It is established that older person’s
experience less thirst than young people, the water deficit and renal concentration is also less. The risk can be aggravated further by frequent treatment with diuretic drugs.

It is also shown that the decrease of body weight during the eight decade of life is mostly related to decreasing amount of body water, especially extra cellular water (Munro and Gunter, 1992). Due to the decreased water, food intake is affected in that body metabolism is slow thus reduced need for food. This in turn affects the nutritional status of the elderly. The study will find out specific facts about the older persons living in homes.

2.4.1 ORAL HEALTH AND DRUG TREATMENT

Despite the fact that the population of the older persons people at large seems to have better oral health now than just a few decades ago, little is known regarding older persons in institutions (Munro and Gunter, 1992). There seems to be a relationship between certain poor dental states, difficulties in ingesting certain food items such as meat and hard foods and nutritional status. This relationship may be there in that those hard food items could be having certain nutrients that are lacking in the soft foods that the older persons prefer due to dental problems (Screenby and Valdin, 1987). Easily chewed food items can also predispose dryness of the mouth, which is enhanced by drug treatment. Several oral and
dental conditions such as angular stomatitis, dental stomatitis, glossitis and bone resorption is related to poor eating habits or inadequate diet and atrophy of the oral mucosa is caused by poor oral hygiene and faulty dentures (Munro and Gunter, 1992).

Drug treatment gives rise to poor appetite and vomiting. The known example being digitalis. The commonly used treatment with diuretic drugs enhances the danger of dehydration and can also cause dryness of the mouth, which makes chewing and eating still more difficult (Munro and Gunter, 1992). The state of those in institutions is not known and if treatment occurred at all then their nutritional status is affected.

2.4.2 PHYSICAL ACTIVITY

Many older persons are physically inactive which gives rise to low needs for energy and therefore difficulties in maintaining a sufficient intake of essential nutrients. The case of those in institutions is not documented and this study seeks to investigate the same. There is a relationship between low energy requirements and nutritional status, which is brought about by lack of exercise (Munro and Gunter, 1992). Furthermore, physical inactivity enhances bone mineral losses from the skeleton and several studies show that exercise can prevent or reverse some of the limiting changes in cardiovascular function and work capacity and be able to
improve glucose tolerance (Munro and Gunter, 1992). The case of institutionalized aged is not known and this forms the basis of this study.

2.4.3 MEAL ENVIRONMENT AND DISTRIBUTION

An unsuitable meal environment is a negative factor in anybody’s nutrition. A change from what one has grown to get used to, to a totally new environment with unfamiliar people. Food habits and beliefs, the way people like to eat and the way they prepare meals is different from what one was used to. All these changes have been studied and found to have a negative influence on feeding (Francie and Nozizwe, 1993).

An improper distribution of meals is disadvantageous to the older persons. The recommended three major meals and two in between snacks during the day is not enough. This is because maybe by the time of serving the appetite might be poor and so the person will not eat enough. This has direct impact on nutritional status of the person. Insufficient knowledge and understanding of nutritional needs of the older persons among the caregivers are important causes of insufficient nutrition. The case of the homes under investigation is not documented and forms the basis of this research. The decreasing trend in dietary fiber and vitamins due to less
dependence on plant food in urbanized communities, which is the base of many institutions of the elderly in itself, is a nutrition risk. For this particular study it was not clear what kind of food was eaten by the older persons since the homes are located in both rural and urban areas. Diets high in fiber are associated with a lower prevalence of chronic bowel diseases such as diverticular disease, colorectal cancer and appendicitis (Walker and Lelahe, 1995).

2.5 HEALTH

The health status of older persons determines their nutritional status. Diseases such as diabetes mellitus and renal failure require special diet management schedules. Certain illness also causes nutritional problems. For example after suffering a stroke, which is common among the elderly, absorption of nutrients is affected.

Absorption of nutrients can also be affected by disorders such as parasitic infestations or lack of proper absorption of nutrients into the body due to decreased gastric enzymatic secretion. Older persons are prone to suffering from diarrhea, which may be caused by food poisoning and infestation. Bowel diseases follow taking antibiotics and drinking alcohol. Much salt and fluid can be lost from the body in diarrhea and vomiting, both of which occur during infection. Many older persons do not tolerate dehydration at all and complications cannot be
reversed. Older persons become dehydrated and look ill with dry skin, sunken eyes and dry mouth. Little or no urine is passed and the pulse is weak (Walker, 1995).

Drug use such as antibiotics interferes with the synthesis of fat-soluble vitamins A, D, E and K (Walker and Lelahe, 1995). They do this by clearing the commercial microbes from the small intestines. This causes malabsorption of the fat-soluble vitamins. If vitamin K is not absorbed from the diet, it causes clotting disorders. Some drugs that are given to older people to increase appetite sometimes cause delay in the absorption of nutrients from the gut. This has a direct influence on nutritional status, as nutrients are not readily available for use by the body.

There is a general agreement that poor oral health is a factor contributing to malnutrition, poor general health and loss of strength (Walker and Lelahe, 1995). Although the impact of oral health status alone on dietary intake and nutritional status of institutionalized older persons is virtually unknown, any alteration in the anatomic structure or physiological functions of the oral cavity plays an important role in deterring the older persons from attaining and maintaining a proper diet and nutritional status. Dietary intake with regard to food chewing and swallowing is integral to the health of the geriatric patient, the status of the oral cavity and the efficiency of the masticator apparatus influencing chewing. Swallowing depends on an adequate lubrication and moisture provided by the salivary glands as well as
sufficient functioning of the oral musculature to form and prepare food bolus. Clearly any factor that interferes with food selection, chewing or swallowing can restrict food intake and affect nutritional status (Chernoff, 1991). The study will identify health factors that would hinder proper food consumption.

2.6 SOCIAL FACTORS AND LOSS OF FAMILY TIES

Exploring the environment in which the older persons live is important to an understanding of their nutrition and health status (Chernoff, 1991). Financial resources, living situation, degree of independence, level of education and social support systems are all factors that may influence nutritional status.

Numerous studies have reported the relationship between social isolation and poor nutritional status in the non-institutionalized population (Chernoff, 1991). The state of institutionalized older persons is not documented and so forms the basis of this study. At the same time social isolation has been associated with institutionalized older persons and lower nutrients intake has been found in adults who are more socially isolated than in those who are less likely to be in contact with family members (Chernoff, 1991).

In institutionalization of the aged, the elderly are removed from their customary environment to a new one and are subjected to a relatively flexible or inflexible
supervision. The older persons are thus made to live under environments and conditions, which are unfamiliar if not strange. Cassel (1976) shows the relationship between health status and social contacts by noting that when a life change disrupts a person’s social contact it also affects the health. Consequently the health of an individual affects his/her nutritional status, as activities such as food intake, digestion and absorption are impaired. The health status of the two specific homes under investigation is not documented and the study seeks to find out this.

Adjustment for the older persons is necessitated by the fact that for one, they find themselves in an environment, which is unfamiliar. Secondly they entered into a place where there is an expected decorum, which differs from their own orientation to life or disposition. Thirdly, the older persons get into a new social set up that means new interpersonal relations. The change of environment envisaged an encounter with new culture, especially if the home is composed of people with heterogeneous cultural background. The degree and success of adjustment to this new environment determines the impact of a new way of life to the nutritional status. The study will investigate whether being isolated from ones family and familiar environment will have a negative effect on nutritional status.
2.7 PSYCHOLOGICAL IMPACT/EMOTIONAL STRESS

A number of studies indicate that the institutionalized older persons share certain negative characteristics; these include low morale, negative self image, preoccupation with the past, feeling of personal insignificance, intellectual ineffectiveness, docility and withdrawal, anxiety and fear of death. These negative characteristics have been attributed to first, selection biases involved in who enters institutions. The physical illness of those who enter these homes accounts for their psychological states, or there is "dependent personality" which responds in a particular way to institutional life. Second, there is a "pre-admission effects" linked to feeling of separation or rejection and negative attitudes towards entering an institution.

Finally, relocation research suggests that environmental discontinuity accounts for the impact of institutionalization (Odhiambo, 1993). This explanation indicates a complex variety of reactions to the stress imposed by the losses which creates dependency and a need for institutional services, loss of familiar support, entrance into a strange environment and labeling effects of being in a home (Odhiambo, 1993). Certainly there are many aspects of the pre-admission period, which has detrimental effects on older persons. The older persons have largely negative views of institutions (even more than the general population), preferring to live in their own homes or with relatives. There are many negative symbols attached to
homes for the older persons. The lingering image from earlier times of the “poor house”, a sacrifice of highly valued independence, an underlying of the losses associated with aging and the nearness to death, feelings of being "cast aside" by family and society, bereavement, confusion, witnessed traumatizing events, depression and cognitive impairment affected dietary intakes (Marley, 1991). In addition, there is little preparation (anticipatory socialization) for entrance into the home, heightening feelings of confusion and personal distress. These reactions to institutions led to those who enter to dwell on the past or withdraw socially and psychologically from an unpleasant reality (Odhiambo, 1993). This could however not be generalized to mean that all those who enter into institutions go through the same since most of those references are from the west. There can be exceptional ones, which is what the study seeks to find out.

2.8 NUTRITIONAL STATUS

Nutritional status is defined as the health status of individuals or population groups as influenced by their intake and utilization of nutrients (Jim and Steward, 2002). Knowledge about the nutritional status of the older persons grew considerably in the last decade. Older persons have different factors that affect their nutritional status. Common food habits vary from area to area. The kinds of food people like to eat and the way they prepare it is different in different communities and within the same community (Francie and Nozizwe, 1993). The differences can be
between different generations in the same community or between men and women. Sometimes there is a difference in food preference and preparation between people living in the rural areas and those living in cities (Williams, 1993).

Belief obstacles affect older persons nutritional status in that some do not want to change the eating ways they have become used to, to suit those of new environment. The taste of food that one is accustomed to can also be different yet, this has not been proved a fact about elderly living in homes. A decline in organ function normally accompanies the aging process especially in the older, older persons those who are over eighty (80) years old. Many of these changes in normal function are reasonably expected to influence nutritional status of individuals (Shils, Olsan and Shike, 1994). Growing old is often associated with frailty, sickness and a loss of vitality. The aging in our society experiences chronic illness and associated disabilities. There is great heterogeneity among this population, that is older persons, varies greatly in their social economic and lifestyle situations, functional capacity and physical conditions. Each person ages at a different rate, sometimes making chronological age different from biological age. Older persons who have problems with the activities of daily living are known as the frail elderly (Whitney, 1995). Because they depend on others to perform these essential activities, they are likely to be at risk of malnutrition.
Although aging is not completely understood, we know that it involves progressive changes in every body tissue and organ; the brain, heart, lungs, digestive tract and bones. After age 35, functional capacity declines in almost every organ system. Such changes affect nutritional status. Some problems including oral problems interfere with nutrient intake, others affect absorption, storage and utilization of nutrients and still others increases the excretion of and need for specific nutrients. Many of the changes are inevitable but a healthful lifestyle that combines moderation with adequate intakes of all essential nutrients can forestall degeneration and improve the quality of life into the later years (Marie and Gail, 1996).

Factors affecting nutritional status of older adults individually or in combination include the social, economic, psychological, cultural and environmental factors. These associate with aging and interact with the physiological changes which further affect nutritional status in older adults. Financial resources, living arrangements, and social support network, including availability of caregivers, can also directly impact a person’s nutritional status. Poverty and social isolation particularly impairs the nutrition status of many older persons (Marie and Gail, 1996).
2.8.1 NUTRITIONAL STATUS ASSESSMENT

This is usually done by use of anthropometric measurements. Anthropometrics is a method whereby the examiner attempts to quantify the amounts, composition and rate of tissue change in any individual. It can help in assessing the severity of tissue losses, formulating a patient's prognosis and evaluating response to nutritional therapy (Richard and Steve, 1990). It also provides information on gross body size, skeletal form or configuration and soft tissue development (Ficlanza, 1991).

2.9 SUMMARY OF THE MAJOR GAPS IDENTIFIED

Some of the studies that have been done on the risks for the older person's nutritional status have not been specific to the living environment. They include health problems lack of visit to the hospitals when sick, lifestyle habits such as taking alcohol and tobacco, lack of income, social economic, food frequency and dietary habits (Help Age International, 2002). The study identified the following gaps, health risks related to food consumption, inability to work or function independently, physiological disabilities that bring a reduction to food consumption, physical risks related to mobility and lack of physical exercises as well as social isolation and loss of family ties. Others were distribution of meals, insufficient care given to older persons and food intake obstacles such as food
frequency, dental problems and consumption of harmful substances. The specific methodology that is used for this particular study is explained in Chapter 3 on data collection procedures.
CHAPTER THREE

METHODOLOGY

This section describes the procedures and strategies, which were used in the study. The section includes the following, research design, description of the study area and population, the sample size and sampling procedures, data collection procedures and data analysis.

3.0 RESEARCH DESIGN

A descriptive research design using a multi-instrument approach was used to determine risk factors associated with nutritional status among the older persons. A survey was used because it explores relationship between different variables in their natural setting and also allows for extensive data collection within a short period of time (Borg and Gall, 1989). Use of multi-instrument was necessary in-order to allow for combination of methods that contribute to validity and reliability of the data, which was necessary for research questions under investigation.
3.1 SAMPLE SIZE AND SAMPLING PROCEDURE

To arrive at the proposed sample size, two homes were purposively sampled out of the possible 14 on the following basis;

- Nyumbani ya Wazee in-order to represent homes located in urban areas.
- Thogoto home for the aged in-order to represent homes located in rural areas.

At the same time Nairobi had the most homes that is five (5) while all the other districts that had homes for the older persons had one (1) home each.

The target population of the study for both homes was all the older persons that were residing in the two homes during the study period. The population of older persons in the homes was small so the researcher chose Nyumbani because it had the highest population among the Nairobi homes and Thogoto because it was the only that was located in the rural areas among all the other homes in other districts.

At Nyumbani the researcher was able to interview fifty (50) older persons out of fifty eight (58). Two (2) refused to be interviewed while six (6) were too old to answer any questions related to their nutrition. The researcher was able to interview all the nineteen (19) at Thogoto. A total of sixty nine (69) older persons were investigated. The institutions' nurse and social worker at Nyumbani and Thogoto respectively were included as a sub sample to help identify various health problems that each older person suffered from.
3.2 DATA COLLECTION INSTRUMENTS

Data was collected using an interview schedule, self-administered questionnaire, use of observation checklist/schedule, food frequency table and anthropometric measurements.

3.2.1 THE INTERVIEW SCHEDULE

The open-ended interviews provided information on history and background of the elderly and the institution. It also provided information on various risk factors that the older persons experienced in their stay in the homes and their perception of the homes in relation to nutrition. Interviews were used because the older persons had various literacy problems for example illiteracy and language problems (Ethangatta, Gee and Hawrsh, 1996). Where necessary the interview was translated into the language that the older person understood for easier understanding. The interview schedule was used to collect information on the factors that are associated with nutritional status of the older persons. The instruments were divided into eight sections namely: demography information, psychological or emotional factors, health, disabilities, functional/physiological disabilities, family life/social life, food intake obstacles and nutritional status assessment.
3.2.2 QUESTIONNAIRE

A self-administered questionnaire was used to solicit information from the institutions nurse's at Nyumbani and the social worker from Thogoto on the prevalence of common ailments that the older persons suffered from which they may have had an impact on their nutritional status.

3.2.3 OBSERVATION CHECKLIST

An observation checklist was used to collect information on conditions of the home, the facilities available, the activities that the older persons were involved in, the care given to the older persons, meals given, how they ate and if there was any assistance given to them if need be. The observation also checked the qualities of meals given, their nutritional value and how valid they were to avoid monotony. The main purpose of doing the observation was to be able to link up some occurrences in the homes that would have had an impact on the nutritional status of the older persons.
3.2.4 FOOD FREQUENCY TABLE

The sister in charge of Nyumbani and the social worker at Thogoto were asked to give the frequency of what the older persons ate. This was necessitated by the fact that the older persons themselves could not recall what they ate.

3.2.5 ANTHROPOMETRIC MEASUREMENTS

This was taken for height, weight, MUAC and arm-span. It was based on “anthropometrics decision tree development” by Help Age Ghana, (1999).

3.3 PRE-TESTING

Pre-testing of the instruments was done on 5 older persons in Runda home for the aged situated in Runda estate that was not included in the study. The pre-testing was done to check the reliability and validity of instruments by checking whether the responses that the study expected were those achieved. The pre-testing gave similar responses like those expected from the study.

3.4 DATA COLLECTION

Data were collected from personal interviews with the older persons. Each interview schedule was numbered to represent a patient and each was completed.
during one session. The researcher explained the purpose of the study to the respondents and assured them of confidentiality before the actual interview. Arrangements were made to meet each respondent at a time convenient to them but within a specified period. The researcher talked to each respondent and created a rapport so as to gain the person's confidence. The method used to get the anthropometrics was based on Better Nutrition for Older Persons Assessment and Action Manual (Suraiya and Manadhar, 1999). Weight, height, arm span, and MUAC were taken for all subjects. Weight was taken on the bathroom scale to the nearest 0.1 kg with the study subjects wearing light clothing. Height was measured to the nearest 0.1 cm without shoes using a portable height. Arm span was taken with subjects stretching their arms with palms facing forward and then posing a flexible steel tape in front of the clavicles and measuring from the longest fingertip to the other longest fingertip. MUAC measurements were taken at the midpoint of the upper arm, between the olecranon and the acromion, with the arm hanging loosely by the side of the body, using a glass fiber tape measure. Special tapes designed and developed by Help Age International for taking MUAC and Arm-span measurements were used and these measurements were taken to the nearest 0.5 cm. The study then used a stadiometer developed by Help Age International for height measurements.

In determining which measurement to use for each older person the anthropometrics decision tree developed by Help Age International was used. The
first decision made is whether it is possible to take the weight of the person. If it is not possible, then no height, arm-span measurements is taken. This is because BMI which is the nutritional indicator for the elderly uses both weight and height measurements and thus if weight cannot be taken, then height measurements or arm-span which is used to substitute height will be of no use. For those whom it is possible to take their weight and not their height, then arm-span is used to substitute height. Those whose weight cannot be taken, their MUAC is used to determine their nutritional status since BMI and MUAC have been accepted as reliable methods of establishing nutritional status of the older persons. For this particular research the researcher took all the arm span of the older persons and this was what was used together with weight to measure BMI because it was found that almost all had bent backs and after taking a few heights the results had a big difference between the arm span and actual height. Then MUAC was also taken for all to compare the results got in BMI.

Each interview took around thirty to forty minutes (30-40) and data collection took two (2) weeks. The researcher had to interview the older persons as fast as possible as studies show that older persons dislike lengthy interviews (Help Age International, 2002) or changed their responses to suit those of their friends.
3.5 DATA ANALYSIS

The instruments yielded both qualitative and quantitative forms of data. They were analyzed in the following ways.

3.5.1 QUANTITATIVE DATA

Data analysis from the older persons interview schedules was done using computer package SPSS (Statistical Package for Social Sciences). Descriptive statistics such as percentages, means, and standard deviations were used to organize, describe and summarize the data from various risk factors and anthropometric measurements of the respondents.

3.6 MEASUREMENTS OF VARIABLES

Anthropometric measurements were physical measurements that provided an indirect assessment of body composition and development. In the study BMI and MUAC indices were used to determine the nutritional status of the older persons. The following World Health Organization (WHO) cut off points was used.

MUAC

22 cms for women-normal    moderately malnourished (16.0-18.5 cm)
23 cms for men-normal     severely malnourished (<16 cm)
At risk of malnutrition (18.5-21.9 cm)

**BMI**

<table>
<thead>
<tr>
<th>Range</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 30.0</td>
<td>Grade II and III obesity</td>
</tr>
<tr>
<td>25.0 – 29.9</td>
<td>Overweight or Grade I obesity</td>
</tr>
<tr>
<td>24.9 – 18.5</td>
<td>Normal</td>
</tr>
<tr>
<td>18.5 – 17.00</td>
<td>Mild malnutrition</td>
</tr>
<tr>
<td>16.9 – 16.00</td>
<td>Malnutrition</td>
</tr>
<tr>
<td>Below 16</td>
<td>Severe malnutrition</td>
</tr>
</tbody>
</table>

Data was analyzed by SPSS Version 8 software package. Descriptive statistics were used to describe the findings of quantitative data. Pearson’s Correlation at 95 confidence levels were used to find out whether there were any significant patterns that emerged between certain variables. Cross tabulations helped compare nutritional status between the homes and between males and females.

The results of the findings and discussions of the study are presented in Chapter Four.
CHAPTER FOUR

RESULTS AND DISCUSSIONS

The chapter gives the study’s findings and discussions. It mainly focuses on; demographic characteristics and various risks that were found related to nutritional status. The risks include; health related risks, emotional/psychological risks, physical risks, economic risks and social factors/loss of families. Food intake obstacles and frequency have also been discussed. Other findings discussed include nutritional status, observations related to nutritional status and statistical analysis of relationship between various variables that are related to nutritional status.

4.1 DEMOGRAPHIC CHARACTERISTICS

The study sought to find out gender, marital status, ethnicity, age, educational level, religion and length of stay at the institution. This is because older persons health and nutritional status is determined by the habits and lifestyles of younger days (Gill, 1993). These factors can also determine ones nutritional status.
4.1.1 GENDER, MARITAL STATUS AND AGE

Gender refers to the aspect of being male or female. The study sought to find out if being male or female had any effect on the entry to the institution of the older persons and whether it had any relationship with nutritional status. At the same time generally women have specific conditions that if not taken care of early in life then they act as major risks in their latter life. Marital status refers to social position in relation to marriage. The respondents were asked whether they were married, divorced, widowed, and single or never married. The ages of the respondents was recorded from the records provided by the persons in charge of each home. The results of gender, marital status and age are in Table 4.1.
Table 4.1 Distribution of the respondents’ gender, marital status and age

<table>
<thead>
<tr>
<th>Gender</th>
<th>Thogoto</th>
<th>Nyumbani</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>15</td>
<td>31</td>
<td>46</td>
<td>66.7</td>
</tr>
<tr>
<td>Females</td>
<td>4</td>
<td>19</td>
<td>23</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>50</td>
<td>69</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>26</td>
<td>37.7</td>
</tr>
<tr>
<td>Divorced</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>16</td>
<td>23.2</td>
</tr>
<tr>
<td>Single or never married</td>
<td>22</td>
<td>31.9</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age group</th>
<th>Males</th>
<th>Females</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>63-72</td>
<td>12</td>
<td>3</td>
<td>15</td>
<td>21.7</td>
</tr>
<tr>
<td>73-82</td>
<td>15</td>
<td>13</td>
<td>28</td>
<td>40.6</td>
</tr>
<tr>
<td>83-92</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>21.7</td>
</tr>
<tr>
<td>93-97</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>10.2</td>
</tr>
<tr>
<td>98-102</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>103-112</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>23</td>
<td>69</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**GENDER**

The results in Table 4.1 show that there were 46 (67%) males and 23 (33%) females. Twenty six (37.7%) of the older persons had been married before they joined the institution. Those who had been widowed were 16 (23.2%) while the divorced were 5 (7.2%). The single or those who had never married were 22 (31.9%). People who are married and remain so even at old age are not likely to
join institutions of the aged as the single ones. This is because children born in married families are known to take care of their aging parents than take them to the homes, especially in the African context (Adjety-Sorsey, 2000).

AGE

The age was of importance in that it determines people's access to services and it also affects policy and resource allocations (United Nations, 1991). In these homes age determination was important so as to determine whether it had any impact on the services provided which would have affected their nutritional status. At the same time metabolic rates slows down with age reducing the amount and number of feeding, which acts as nutritional risk. The age category with the highest number of respondents was seventy eight years with 16 (23.2%) of the respondents while the age category with the lowest number of respondents was ninety eight to one hundred and three to one hundred and seven where only 2 (2.95%) of the respondents were respectively. Men had the oldest person with one hundred and seven years while the oldest woman was 96 years old. Majority of the older men and women were in the 73-82 age group category with fifteen of them (21.7%) being men while women were in 13 (18.8%) of the respondents.

4.1.2 ETHNICITY

Ethnicity refers to a particular cultural group or race of mankind. The tribe one comes from then can be a factor in determining ones nutritional status in different
ways. The staple foods for a particular tribe of people can be more nutritious than another meaning that the tribe whose staple food is more nutritious than the other could be in a better nutritional status than the other even if they are in the same home. It was importance to determine the ethnicity of the aged so as to be able to come up with figures of the tribes affected more by problems that has led to establishment of these homes in Kenya. The respondents ethnicity were divided into 5 categories namely, Kikuyu, Luhya, Kamba, Luo, and any other. The results are as in figure 1.2 below.
The results in Figure 1.2 above reveal that majority of the older persons were from Kikuyu tribe who were 52 (76%) of the respondents. Luhyas were 6 (9%), while
Kamba and Luo were 3 (4%) each of the sample. Seven percent of the sample comprised of people from outside Kenya but residing in the homes. They were from Sudan (1), Tanzania (2) and India (2). It should also be noted that the locality of these homes did influence the majority of the tribe in both homes because even Nyumbani which is located in a cosmopolitan area had Kikuyu as the majority (35). Also because many Kikuyus live around Nairobi could have influenced its occupants.

4.1.3 EDUCATIONAL LEVEL AND OCCUPATION

The older persons were asked their educational levels and their occupations before joining the institution and at the home. Educational level affects ones nutritional status in that those with better education may have a formal employment, which allows them to earn an income to buy more food than those who do not earn any income. Education also helps one to be able to afford better health care, which is a contributing factor to nutritional status. The section deals with the characteristics of respondents in general. The responses are shown in Table 4.2.
Table 4.2 Respondents level of education and occupation before joining the home and at the home

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary 1-8</td>
<td>24</td>
<td>34.8</td>
</tr>
<tr>
<td>Secondary 1-4</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>College</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>University</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>No education</td>
<td>37</td>
<td>53.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation before</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housewife</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Manual work</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td>Farming</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td>Professional job</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td>House helps</td>
<td>8</td>
<td>11.8</td>
</tr>
<tr>
<td>Any other</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation at the home</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helping in the kitchen</td>
<td>22</td>
<td>31.9</td>
</tr>
<tr>
<td>Making items for sale</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Sitting or sleeping</td>
<td>39</td>
<td>56.5</td>
</tr>
<tr>
<td>Cleaning the compound</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

EDUCATION

The results in Table 4.2 reveal 37 (53.6%) of the older persons had no formal education.

Those who had attained primary education (1-8) were 24 (34.8%). Those who reported to have had secondary education were only 4 (5.8%) while 2 (2.9%) had
attained college and university education respectively. These findings are consistent with the years that education was introduced in Kenya and when many people started to accept it. Majority of the respondents were born when education had not gained roots and there was still a lot of resistance (Odhiambo, 1993). Education influences the income level, which is a determining factor in purchasing power in terms of better health, food, and even lifestyle, which affects nutritional status.

**OCCUPATION**

The results of occupation in the same Table 4.2 show that those who did manual jobs, farming and those who had a professional job were 19 (27.5%). Those who did not have a formal job were 3 (4.3%) while house-helps were 8 (11.6%). The remaining 1 (1.4%) did other kinds of jobs that included business. The results in Table 4.2 on what the older persons did at home reveal that over half of the elderly 39 (56.5%) spent their days either seated or sleeping. While 22 (31.9%) spent their days helping in the kitchen either in wiping utensils, chopping various items that they are cooked for and other kitchen activities. Those who made items for sale and those who helped in cleaning the compound were 4 (5.8%) respectively. From observations in both homes some elderly were involved in mild activities within the home. Such activities included peeling potatoes, wiping utensils, collecting eggs, opening the gate for the visitors, watering flowers, cleaning the dogs and sweeping the compound. This was all done on voluntary
basis meaning that most of the older persons were idle most of the times. Such mild activities could not be equated with physical exercises required by the body. Some of the reasons given by the respondents as to why many did not like doing anything included, "who will pay for what I do, even if I work nobody seems to recognize". Due to lack of recognition and reward many preferred to just sit rather than do anything even when they were able to. At the same time those who made items for sale had nobody to market the items for them. The items took too long to be bought and had to wait until there was an occasion when visitors would give something not necessarily equivalent to the value of the item but mostly out of good will. "Being idle contributes to consumption of tobacco because this is the time we are taught how to sniff by those who are experienced". This was said by an elderly person who confirmed that keeping the elderly idle even when they were strong enough to do some meaningful activity contributed to consumption of unhealthy substances.

4.1.4 RELIGIOUS AFFILIATION

Religion was important in this particular study as it determined whether one was admitted into the home and what one ate. For example some religions are known to influence what their followers eat. For example the Catholic Church does not discourage its followers on harmful substances such as alcohol and tobacco.
which are known to have unhealthy effects on the body. At the same time
different cultures have different ways of treating their men and women.

Nyumbani admitted older persons who were Catholics and if they were not they
had to convert to Catholic. Thogoto on the other hand did not mind ones religious
affiliation as long as one adhered to the rules of the home. Religion may influence
what one ate before and upon joining the institution of the older persons, which
then affected ones nutritional status. The results are shown in Table 4.3.

Table 4.3 Distribution of respondents' religion before joining the home

<table>
<thead>
<tr>
<th>Religion</th>
<th>Thogoto</th>
<th>Nyumbani</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholic</td>
<td>1</td>
<td>31</td>
<td>32</td>
<td>46.4</td>
</tr>
<tr>
<td>PCEA</td>
<td>9</td>
<td>2</td>
<td>11</td>
<td>15.9</td>
</tr>
<tr>
<td>ACK</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td>20.4</td>
</tr>
<tr>
<td>African tradition</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Any other</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
<td><strong>50</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 4.3 reveals that 32 (46.4%) of the respondents were Catholics before they
joined the homes. Those who stated to have been PCEA were 11 (15.9%) while 14
(20.3%) were ACK members. There were equal numbers of those who said to have
had no religion and those who believed in the African traditions who were 5
(7.2%) each. The other religions that respondents said to have belonged to
included Islam. The respondents had to join the religion of each particular home.
4.1.5 LENGTH OF STAY

This is the number of years one had stayed in the institution. The researcher sought to find out whether the duration one stayed into the institution had anything to do with nutritional status. The results are as shown in Table 4.4.

Table 4.4 Respondents length of stay at the institution

<table>
<thead>
<tr>
<th>Length of stay</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 years</td>
<td>37</td>
<td>53.0</td>
</tr>
<tr>
<td>6-10 years</td>
<td>18</td>
<td>26.1</td>
</tr>
<tr>
<td>11-15 years</td>
<td>11</td>
<td>16.0</td>
</tr>
<tr>
<td>16-20 years</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The findings in Table 4.4 show that 37 (53.6%) of the respondents had stayed in the homes for between 1 - 5 years while only 3 (4.3%) had stayed for between 16 - 20 years. The duration one stayed in the home could change ones nutritional status to either better or worse.
4.2  RISKS

Some of the risks that the study found that had an effect on nutritional status include health risk such as illnesses, sicknesses and physical signs. There were also health problems that affected food intake such as constipation that discouraged the older persons from eating. Physical risk such as immobility that reduced older person’s movements. Psychological or emotional stress due to inability to do things independently, loss of families and being sickly also acted as a risk. The inability to function on their own due to lose of physical ability acted as a risk as it was not possible to get someone to help throughout. Socially, the older persons had lost their families and some of them did not have good relationship between themselves and their care givers. This affected their socialization which is a basis for communal life characterized in the homes. Then there were food intake obstacles such as the food frequency, dental problems and consumption of substances that were harmful to the body.

4.2.1  HEALTH RISKS

The health status of older persons influences their nutritional status. The study sought to find out the health status of the respondents. Under health risks, illnesses and clinical signs were considered, mobility as a health risk, dental related risks.
The health state of the older persons was rated first based on their opinion and the results are shown in Table 4.5 below.

**Table 4.5 Rating of the respondents' state of health**

<table>
<thead>
<tr>
<th>State of health</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>16</td>
<td>23.2</td>
</tr>
<tr>
<td>Fair</td>
<td>34</td>
<td>49.3</td>
</tr>
<tr>
<td>Poor</td>
<td>19</td>
<td>27.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

In a scale of good to poor the results showed that 16 (23.2%) of the respondents said that their health was good, while 34 (49.3%) said that their health was fair and 19 (27.5%) felt that their health was poor. In order to find out the real situation of the elderly in these two homes the nurse at Nyumbani and the Social worker from Thogoto were used to identify some of the common illnesses and clinical signs that the older persons suffered from. The results are as shown in Table 4.6.
Table 4.6 Distribution of illnesses and clinical signs suffered by the older persons

<table>
<thead>
<tr>
<th>Illnesses</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthrosis</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Constipation</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Faulty circulation</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>STDs</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Hepatitis B</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Diverticulities</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Gastritis</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Cancer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Neuropatic disorders</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Asthmatic</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Ulcers</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Diabetic</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Chronic cardiac failure</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Depression</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>16.1</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>9</td>
<td>11</td>
<td>20</td>
<td>29.0</td>
</tr>
<tr>
<td>Dementia</td>
<td>19</td>
<td>9</td>
<td>28</td>
<td>40.6</td>
</tr>
<tr>
<td>Arthritis/joint pains</td>
<td>13</td>
<td>15</td>
<td>28</td>
<td>40.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinical signs</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Epilepsy</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Stroke/paralysis</td>
<td>-</td>
<td>3</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Blindness</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Dehydration</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>10.1</td>
</tr>
<tr>
<td>Edema</td>
<td>7</td>
<td>7</td>
<td>14</td>
<td>20.3</td>
</tr>
<tr>
<td>Mental disabilities</td>
<td>13</td>
<td>8</td>
<td>21</td>
<td>30.4</td>
</tr>
</tbody>
</table>

** Extreme weakness **

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>11</td>
<td>33</td>
<td>47.8</td>
</tr>
</tbody>
</table>

** Multiple responses were allowed

Table 4.6 shows that those with various ailments or sicknesses and clinical signs were two hundred and five (205). Those with extreme weakness were 33 (47.8%) of the respondents with men being double (22) the number of women. Dementia and joint pains/arthritis had equal number of respondents 28 (40.6%) each and was more common with women. One male was reported have HIV/ AIDS. The illnesses/ clinical signs have a relationship with nutritional status in that they
affects food intake, utilization and organ failures associated with some of the illnesses.

4.2.2 HEALTH RISKS AFFECTING FOOD INTAKE

The health risks that had a direct impact on the older persons feeding was established because it has an influence on nutritional status of the elderly in terms of food intake. The respondents were asked whether they had any health condition(s) that made them not be able to eat as they wanted to or made them avoid certain foods. The responses are shown in Table 4.7.

Table 4.7 Distribution of health factors related to food intake

<table>
<thead>
<tr>
<th>Health conditions</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulcers</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Coughing</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Nausea</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Stomach pains</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Constipation</td>
<td>6</td>
<td>8.8</td>
</tr>
<tr>
<td>None</td>
<td>26</td>
<td>37.7</td>
</tr>
<tr>
<td>Multiple sicknesses</td>
<td>31</td>
<td>44.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The results from Table 4.7 shows that 31 (44.9%) respondents had multiple sicknesses that made them not eat optimally while 26 (37.7%) said they did not have any particular health condition hindering their eating and if they had any it did not act as an hindrance. Nausea and stomach pains were both reported by 2
(2.9%) respondents, while ulcers and coughing were mentioned by 1 (1.4%) respondent each. Constipation which is nutritionally related was reported by 6 (8.7%) respondents. Multiple sicknesses was reported by 31(44.9%) which meant an elderly was suffering from many of the diseases mentioned and others that had not been mentioned like diabetes, not eating anything solid and high blood pressure. This meant that those who experienced many of these sicknesses had their nutritional status more affected.

4.2.3 PHYSICAL RISKS RELATED TO MOBILITY

This was categorized into three, those who could walk well, those who walked with the support of a stick and those on wheel chairs. Findings revealed that majority of the elderly walked with the help of a stick 33 (47.8%). Those who could walk well were 30 (43.5%) while those on wheel chairs were 6 (8.7%).

Mobility of the older persons was affected by arthritis. This then affected the movement of the older persons meaning that the older persons could not move to where the food was rather they waited to be given which sometimes happened too late or one was forgotten altogether. Being on a wheel chair was found to have statistical significant relationship with BMI of \( r=297, p=0.02 \). However it was observed that those on wheelchairs were only found at Nyumbani and there was no one on a wheelchair at Thogoto. This was explained by the fact that the reasons
of entry into these institutions were different. Those who entered Nyumbani must have been sickly, poor and lonely older persons before their entry while those who entered Thogoto were those old and lonely older persons and even if there were sick older persons at Thogoto their sickness did not warrant a wheelchair.

4.2.4 PSYCHOLOGICAL/EMOTIONAL RISKS

Emotional stress can indirectly affect nutritional status in such ways as inability to feed due to loss of appetite, feeling nauseated, loss of meaning to life so someone feels there is no need to continue living so one stops feeding altogether in order to accelerate death. The study sought to find out whether the respondents had any emotional problems regarding their stay in the home. For example at Nyumbani some of their responses were "I would want to leave this home to maybe another since somebody I cannot mention to you is always beating me, "I want to stay in a place that I can be allowed to work and earn money to buy myself roasted meat". Others were for the opinion that if they could get somebody to stay with in their homes then they would leave the institution. Another one said "I don't like the way sister keeps us like children threatening us with eviction from the home so we are always in fear even to complain if something bad happens".

The study therefore found out that fifty (72.5%) of the respondents were uncomfortable with the situations at the particular home that they stayed while
nineteen (27.5%) respondents said that they would have wanted some changes though did not mind being in their respective homes. Emotionally the older persons were not comfortable in the home but due to lack of an alternative they stayed.

4.2.5 FUNCTIONAL ABILITY RISKS

The respondents were asked to state who helped them in case of physical needs. The results are tabulated in Table 4.8.

Table 4.8 Respondents helper

<table>
<thead>
<tr>
<th>Helper</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sister/social worker</td>
<td>5</td>
<td>7.3</td>
</tr>
<tr>
<td>Fellow elder</td>
<td>15</td>
<td>21.7</td>
</tr>
<tr>
<td>The workers</td>
<td>48</td>
<td>69.6</td>
</tr>
<tr>
<td>Any other</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results from Table 4.8 show that among those who responded to having the workers help them were 48 (69.6%). This could be explained by the fact that the elderly and the workers in these homes were usually together most of the time unlike the other people. At the same time the elderly who could not do something on their own did not have many friends amongst themselves as the more energetic older persons viewed them as a bother. Those who consulted their fellow elderly were 15 (21.7%) and looked more energetic than the rest. The others 5 (7.2%)
could only ask for help from either the sister or the social worker while 1 (1.4%) did not ask for any help unless somebody decided to help. This was attributed to lack of interest in anything going on in the home and they did not like the homes.

The need to know who helped the older persons in times of physical need was necessitated by the fact that the functionally/physically able older persons are likely to be in a better nutritional status than those who are not (Gill, 1993). This is because they are able to feed better than those who are physically handicapped and even if they have somebody to help them they may feel like they have become a bother to others so they may pretend to be full when they are not just to please the person feeding them, which in itself is a nutritional risk.

Another physical risk that could contribute to poor nutritional status is the inability to do daily routine physical activities. These were categorized into 5, (1) ability to feed oneself (2) ability to dress (3) ability to bath oneself (4) ability to take self to the toilet (5) any physical activity undertaken. The results were as shown in Table 4.9.
Table 4.9 Distribution of the respondents’ independence

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeding</td>
<td>69</td>
<td>100.0</td>
</tr>
<tr>
<td>Dressing</td>
<td>64</td>
<td>92.0</td>
</tr>
<tr>
<td>Bathing</td>
<td>60</td>
<td>87.0</td>
</tr>
<tr>
<td>Toilet visits</td>
<td>66</td>
<td>95.7</td>
</tr>
<tr>
<td>Exercises</td>
<td>7</td>
<td>10.1</td>
</tr>
</tbody>
</table>

*Multiple responses were allowed

Results show that all the respondent’s 69 (100.0%) were able to feed themselves but with most of them being assisted with every spoonful of food going to the mouth. Sixty-four respondents 64 (92%) could dress on their own while 66 (95.7%) of them could be able to take themselves to the toilet with some being assisted to do so. At the same time 6 (87.0%) of the respondents could bath themselves. However majority of the older persons did not do any exercises with only 7 (10.1%) doing some exercises.

This could have been contributed by the fact that Thogoto did not have any facilities for exercises and at the same time even if Nyumbani had a well-equipped gymnasium room; little was done to motivate the elderly to use it. Those who visited the room were those who had better education and may be understood the importance of exercises in their aging state (see Table 4.2). Lack of exercises was found to have statistical significant relationship to BMI ($r=0.364$, $p=0.002$).
The ability to do daily activities is important as it portrays a sense of independence, which is important in day-to-day life. Also being able to do some basic activities brings about sense of satisfaction. Such independence indirectly improves ones nutritional status since one can feed well and do other activities related to feeding without support.

4.2.6 SOCIO-ECONOMIC RISKS

Economic independence is an important factor in feeding as it determines the purchasing power of an individual as well as the home. Having an income allows one to purchase better quality food than when one has limited income. It is because of this that the study sought to know whether the respondents undertook any income generating activity. The lack of any source of income made the elderly dependent on the institution even for those who were still strong to do something. It was noted that most of the strong older persons did not feel comfortable sitting idling in the home while they could work and earn something for themselves. Even those who were willing to do something were discouraged when they noted that people in charge of the homes had to approve whatever they wanted to do with the money earned from whatever activity they engaged in. At the same time if one showed that she/he could do an activity that would bring some income, the home administrators would threaten to evict such a person on
the grounds that they could take care of themselves. So most respondents feared to
be evicted out of the home and so did nothing even if they could.

This meant that the elderly could not buy anything for him/herself though most of
them felt that they would wish to buy foods like meat, which they craved for since
the homes did not give enough.

The study found out that 64 (92.8%) of the respondents were not involved in any
income generating activities while only 5 (7.2%) engaged themselves in some
income generating activity. Those who engaged in income generating activities
were noted to spend their money on tobacco and cigarettes buying and were all
from Nyumbani. From the findings and observations the older persons were
allowed to smoke and sniff cigarettes and tobacco respectively at will. It was also
observed that at Nyumbani there was a canteen that sold these stuffs to the older
persons despite their health hazard.

4.2.7 LOSS OF FAMILY TIES

This study investigated whether the respondents had families, whether they visited them.
The study found out that 40 (58.0%) of the respondents had families while 29 (42.0%)
did not have any living families. Out of those who had families, 1 (2.5%) older person
was visited daily by her family, while 16 (40.0%) were visited occasionally. Those who had families but were never visited by them were 23 (57.5%).

During those visits some were visited with food, which they ate together though must have been approved by the person in charge of the respective home had to be sought. It was also noted that a daughter who was a nun made the daily visitation. The study investigated this because studies have shown that separation from ones loved ones or isolation is a risk in the elderly nutritional status (Chernoff, 1991). At the same time lack of such contact/visits can lead to depression affecting ones health and finally their nutritional status. It has also been noted that the more the visits the better the nutritional status since immediately after such visits feeding improved.

The study on the other hand investigated those who had relatives and how many of them visited the older persons. Having relatives who visited, whether one had family visit or not had a great impact in the older person’s life. This was especially if the visits were from close relatives and former colleagues. The older persons were asked whether they had relatives, who visited who and how often were such visits. It was noted that the older persons sometimes were given permission to go and visit.
The results were that 64 (92.8%) of the respondents had relatives while 5 (7.2%) did not have. Out of those who had relatives only 22 (8.8%) respondents visited the elderly in the homes while 10 (31.2%) were either visited by the older persons or they visited the older persons.

Social isolation contributes to reduced food intake and increased risk of malnutrition (Ochola, 2000). The older persons saw the visits as a way of being appreciated even when they were in the homes, which acted as a morale booster and directly affected appetite in a positive way. In one home it was reported this about the visits "older persons who are never visited are always gloomy and have a very bad attitude towards any body trying to talk to them about their relatives and after any visits food consumption is higher”.

4.2.8 RELATIONSHIP WITH THE STAFF

This was done to establish the respondent’s relationship with the staff employed by the home and the results are as shown in Table 4.10.
Table 4.10 Respondents' relationship with staff

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Fair</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Good</td>
<td>49</td>
<td>71.0</td>
</tr>
<tr>
<td>Extremely good</td>
<td>10</td>
<td>14.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The results from Table 4.10 reveal that 49 (71.0%) of the respondents felt that they had a good relationship with the staff. Ten (14.5%) felt that the staff were extremely good. A few of them 5 (7.2%) reported having bad and fair relationships respectively. It was important to establish this kind of relationship since the type and amount of care given to an individual depended on this relationship, which can improve ones nutritional status or worsen it. For those with functional disabilities good relationship meant that they could be helped more especially in feeding so their nutritional status improved.

4.3 FOOD INTAKE OBSTACLES

The study sought to find out whether there were hindrances to feeding. Under this section factors affecting eating patterns, foods that were disliked and food frequency practiced in the two homes is discussed. Food intake and dietary habits
affects nutritional status (Chandra, 1985). Respondents were asked to describe their appetite and were given the options ranging from extremely good to poor. The responses are as indicated in Table 4.12.

The respondents were further asked to state some of the hindrances they experience when feeding and their food habits. Some of these factors are listed in Tables 4.11.

**Table 4.11 Appetite rate and Hindrances in feeding**

<table>
<thead>
<tr>
<th>Appetite</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>13</td>
<td>18.8</td>
</tr>
<tr>
<td>Fair</td>
<td>5</td>
<td>7.3</td>
</tr>
<tr>
<td>Good</td>
<td>35</td>
<td>50.7</td>
</tr>
<tr>
<td>Extremely good</td>
<td>16</td>
<td>23.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hindrances in feeding</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sicknesses</td>
<td>24</td>
<td>34.8</td>
</tr>
<tr>
<td>Lack of teeth</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>Lack of appetite</td>
<td>12</td>
<td>17.4</td>
</tr>
<tr>
<td>Food dislike</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>Other factors</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>None</td>
<td>21</td>
<td>30.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results from Table 4.11 indicate that 35 (50.7%) of the respondents said that their appetite was good while 16 (23.2%) reported having an extremely good appetite. Those who had poor appetite were 13 (18.8%) while those who reported to the effect that their appetite was fair were 5 (7.25%). As people age some sense of taste, smell and enjoyment of food is affected. The process of digestion is also slowed down and smaller more frequent meals may be more manageable than larger ones (Gill, 1993). Poor appetite was found to have a statistical significance with BMI of \( r=0.379, p=0.002 \).

The results in table 4.11 reveal that 24 (34.8%) respondents cited sicknesses as the greatest hindering factor while 21 (30.5%) did not have anything particular that hindered their feeding. Lack of appetite was reported by 12 (17.4%) respondents, lack of teeth 4 (5.8%), food dislikes 5 (7.2%) while other diverse factors were reported by 3 (4.3%) respondents. It was important for the study to establish factors that acted as food consumption hindrances since they formed nutritional status risks.

4.3.1 FOOD CONSUMPTION AND LIFESTYLES

Dietary habits leading to some people disliking some foods, which could be a source of poor nutritional status, were established. The results are in Table 4.12.
Table 4.12 Foods disliked by the respondents

<table>
<thead>
<tr>
<th>Foods</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Ugali</td>
<td>8</td>
<td>11.6</td>
</tr>
<tr>
<td>Vegetables</td>
<td>6</td>
<td>8.7</td>
</tr>
<tr>
<td>Chapati</td>
<td>1</td>
<td>1.4</td>
</tr>
<tr>
<td>Beans</td>
<td>6</td>
<td>8.7</td>
</tr>
<tr>
<td>Other foods</td>
<td>16</td>
<td>23.2</td>
</tr>
<tr>
<td>None</td>
<td>30</td>
<td>43.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The results reveal that most of the respondents 30 (43.5%) did not have any particular foods prepared in the homes that they really disliked. Some foods that were not listed but were mentioned by many respondents having a dislike for included spaghetti and French beans. Vegetables and beans had equal number of respondents 6 (8.7%). Ugali was mentioned by 8 (11.6%) respondents while rice and chapatti were mentioned by 2 (2.9%) and 1 (1.4%) respondents respectively as being disliked.

It was important to find out the foods disliked by the older persons because some of these foods that these people didn’t like may have been rich in some nutrients that may be lacking in other foods that they prefer. “The elderly do not usually like vegetables especially cabbage”. Dislike for fruits was observed by the researcher.
Instead of eating the fruits served with the food the older persons carried them outside the dining hall and would be spotted having been left in their sitting places or in their rooms. This formed a major risk to nutritional status considering the importance of such foods to the body. Also due to changing of denomination meant that one could easily start eating what she or he could not eat before or stop eating some of the foods one was used to which could bring about changes in nutritional status. For example almost all the residents of Nyumbani were sniffing tobacco and some took alcohol, which in itself is a nutritional risk. When questioned why they started taking alcohol and tobacco one of them said “when I came here I found people taking so they introduced me to it and I started taking it too”. At the same time Nyumbani allowed its older persons to drink beer and even served it occasionally with other meals.

Thogoto however did not allow its older persons to consume these substances but some elderly would sneak out to look for them and even brought some to others. Generally Catholic Church has no limit to what its members eat unlike most of other protestant churches including PCEA. More of the food consumption is discussed under food frequency and dietary habits in Section 4.3.1 on Food Frequency.
4.3.2. DENTAL PROBLEMS

The persons in charge of the homes gave the most recent records of the older persons dental numbers. The results are as recorded below in Table 4.13.

Table 4.13 Distribution of the respondents missing teeth

<table>
<thead>
<tr>
<th>Missing teeth</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>13</td>
<td>18.8</td>
</tr>
<tr>
<td>1-5</td>
<td>9</td>
<td>13.0</td>
</tr>
<tr>
<td>5-10</td>
<td>4</td>
<td>5.8</td>
</tr>
<tr>
<td>More than 10</td>
<td>5</td>
<td>7.2</td>
</tr>
<tr>
<td>All</td>
<td>38</td>
<td>55.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>69</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Results in Table 4.13 reveal that 38 (55.2%) of the older persons had all their teeth missing. This meant that they all had feeding problems and considering that a home like Thogoto did not have special diet for its members then nutritional status could have been affected. Only thirteen of the respondents (18.8%) had all their teeth intact although some were very loose and painful meaning that feeding could not be achieved optimally forming a nutritional risk. Those who had more than ten teeth missing were 5 (7.2%). Those in the range of one to five missing teeth were 9 (13.0%) while those in the 5-10 teeth missing brackets were 4 (5.8%).

When questioned further on whether they had difficulties in chewing, thirty six (52.2%) of all the older persons without teeth stated that they had while others 33
(47.8%) said they did not have any problems. Some complained saying, "I am not entitled to soft foods like the others yet I deserve it". The problem of chewing and being given soft foods is also known to predispose dryness of the mouth, which brings more sicknesses to the mouth especially during feeding. Denture use was reported by 8 (11.6%) while the rest 61 (88.4%) did not have dentures despite their lack of teeth. This meant that eating could not be optimized and therefore nutritional status could have been affected.

4.3.3 FOOD FREQUENCY

This dealt with the foods that the older persons ate and the number of times the foods were eaten in a week. The people in charge of feeding the respondents were asked to state the mode of feeding that they employed for the older persons. This was necessitated by the fact that the respondents could not recall what they ate as some gave food items that were not in the menu and so the menu was used to ascertain what these people ate. It was important that the study established the frequency of food that was given because studies have shown that older persons should be given small frequent meals rather than the usual three major meals a day. This is because of their poor appetite and at the same time they are not able to eat a bigger portion within one serving. The sister in charge of Nyumbani and the social worker at Thogoto gave the following information on Table 4.14 as the frequency of the foods given.
Table 4.14 Distribution of meals taken at Nyumbani and Thogoto

**NYUMBANI**

<table>
<thead>
<tr>
<th></th>
<th>Once a week</th>
<th>Daily</th>
<th>Twice</th>
<th>Thrice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapati</td>
<td>Tea</td>
<td>Meat</td>
<td>Potatoes</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>Porridge</td>
<td>Rice</td>
<td>Vegetables</td>
<td></td>
</tr>
<tr>
<td>Fish</td>
<td>Loaf</td>
<td>Ugali</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ndengu</td>
<td>Sweet potatoes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sphagetti</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mukimo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**THOGOTO**

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th>Twice</th>
<th>Thrice</th>
<th>Four times</th>
<th>Five times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tea</td>
<td>Sweet potatoes</td>
<td>Eggs</td>
<td>Rice</td>
<td>Bread</td>
<td></td>
</tr>
<tr>
<td>Porridge</td>
<td>Dengu</td>
<td>Chapati</td>
<td>Ugali</td>
<td>Beans</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>Meat</td>
<td></td>
<td></td>
<td>Carrots</td>
<td></td>
</tr>
</tbody>
</table>

From observation and the menu given, Nyumbani ya Wazee gave 3 major meals daily plus 4 o’clock tea. There was tea and porridge for breakfast served with 3 slices of bread daily. This was followed by lunch, which, was composed of ugali, rice, potatoes, spaghetti, muthokoi that was served with meat, dengu, cabbage and kales. During supper the food served was similar to lunch with a change of stew. Once in a week fruits and alcoholic beverages were served. It could not be
certainly verified what each older person ate since they were allowed to choose what they wanted to eat. From observation and the menu the meals were not adequate as major meals were served three times in a day, which are not the recommended standards for the older persons (Ronni, 1991). The older persons are supposed to be given small but frequent meals for maximum intake.

Results show that there was more variety of what was eaten at Thogoto than Nyumbani. However it was noted that Nyumbani did not follow their menu so strictly meaning they may have more variety than Thogoto. One older person at Thogoto reported this, “some of the foods we are given have just been introduced recently for example meat”. Meaning they may not have had any impact by the time of research.

4.4 NUTRITIONAL STATUS

Nutritional status was established using body mass index (BMI) and mid upper arm circumference (MUAC) for those whose BMI could not be established. Those whose BMI was done were sixty three (63) while the other six (6) were on wheel chairs. Mid-Upper Arm Circumference was done since many studies that have been conducted for the older persons have shown reliably that it could be used in cases where BMI could not be obtained and would give similar results as the BMI.
The respondents BMI (weight for height) and MUAC were computed and the results are shown in Table 4.15.

**Table 4.15 Results of the respondents BMI and MUAC**

<table>
<thead>
<tr>
<th>Cut off points</th>
<th>Thogoto</th>
<th>Nyumbani</th>
<th>Males</th>
<th>Females</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely malnourished&lt;16.0</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Moderately malnourished</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>(16.0-16.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mildly malnourished</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>7.9</td>
</tr>
<tr>
<td>(17.0-18.49)</td>
<td>10</td>
<td>36</td>
<td>32</td>
<td>14</td>
<td>46</td>
<td>73.0</td>
</tr>
<tr>
<td>Normal (18.5-24.9)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overweight/grade 1 obesity</td>
<td>1</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>12.7</td>
</tr>
<tr>
<td>(25-29.9)</td>
<td>19</td>
<td>44</td>
<td>43</td>
<td>20</td>
<td>63</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>46</td>
<td>23</td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MUAC</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-21</td>
<td>7</td>
<td>2</td>
<td>9</td>
<td>13.0</td>
</tr>
<tr>
<td>22-26</td>
<td>29</td>
<td>9</td>
<td>38</td>
<td>55.5</td>
</tr>
<tr>
<td>27-31</td>
<td>10</td>
<td>8</td>
<td>18</td>
<td>26.5</td>
</tr>
<tr>
<td>32-36</td>
<td>-</td>
<td>4</td>
<td>4</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>46</td>
<td>23</td>
<td>69</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Tables 4.15 reveals that based on BMI 46 (73.02%) of the respondents had normal nutritional status. Equal frequencies of 2 (3.17%) were recorded for severe and moderate malnourishment. There were 8 (12.7%) overweight/grade 1 obesity cases and the mildly malnourished were 5 (7.94%). BMI results above indicate that 9 (13.0%) were malnourished.

From the MUAC results in Tables 4.15 above reveals that 38 (55.08%) of the elderly were in the 22-26 brackets, which are normal MUAC for the elderly using the WHO standard, cut off. Measurements above 23 centimeters for men are normal while measurements above 22 centimeters for women are normal. It was
also observed that 9 (13.05%) respondents were below the normal cut off points which is equal to the number found malnourished in the BMI. Eighteen (26.08%) and 4 (5.79%) were above normal meaning that they were overweight or obese.

4.5 OBSERVATIONS RELATED TO NUTRITIONAL STATUS

Observation was necessitated by the fact that some of the occurrences, equipments and facilities could have been influencing nutritional status of the older persons. Under this heading condition of each home, facilities available, activities done by the elderly, amount of care given and meals provided were observed.

4.5.1 CONDITIONS OF THE HOME

Nyumbani ya Wazee is a Catholic run institution caring for poor and lonely men and women. From observations its buildings, equipments and other facilities were of good standards. This could be partly explained by the fact that it has internal and external donors unlike Thogoto, which is purely run by local women guilds. Also some of the occupants of Nyumbani have pension, which is paid to the home for their upkeep while Thogoto does not have this. Those who were in charge of the older persons at Nyumbani were nuns who have their lives dedicated to that kind of life while those who are took care of the older persons at Thogoto have families of their own meaning divided attention. Nyumbani generally was cleaner than
82

Thogoto. Availability of good equipments helped improve nutritional status in that it made life easier for both caregivers and the older persons. Also cleanliness meant healthier living environments.

4.5.2 FACILITIES AVAILABLE

Both homes had different facilities that helped promote the well being of the older persons. For example Thogoto produced enough milk and eggs for its use and even sold the surplus, while Nyumbani depended on buying. Nyumbani on the other side had a gym for the older persons to exercise while Thogoto did not have. This was a vital requirement since it has been documented that increased physical exercises increases the body’s metabolic rate thus increases food consumption (Chandra, 1991).

4.5.3 CARE GIVEN TO THE ELDERLY

It was noted that in some cases negligence was meted on the older persons especially the frail ones who could not do anything for themselves. For example falling down in the hands of a worker was observed at Nyumbani. At other times some who had incontinence were threatened if they wetted themselves with beating such that they avoided drinks that would accelerate that situation, which in itself is a nutritional risk. They were also discriminated by their fellow older persons
because of the smell of urine, which made them sometimes go to feed after everybody had eaten to avoid being chased away. Also special attention was given to certain older persons for example the retired priests living in different buildings from the other older persons. They had workers assigned to them unlike the other older persons. This was particularly observed at Nyumbani. Thogoto on the other hand had two (2) workers responsible for the older persons such that at times some older persons who could not do anything for themselves had to wait for so long to be attended to. This meant that those who did not know the timings stayed without some meals, as the person who was supposed to remind and help in feeding them sometimes was busy.

4.5.4 VIEWS OF THE NURSE AND THE SOCIAL WORKER ON RISKS THEY COME ACROSS AS THEY CARE FOR THE AGED

Both the nurse and the social worker were females who had started working in the year’s 2000 and 2001. When asked how they rated their work, they said, “extremely enjoyable and enjoyable”. The response towards the timings for medical check up were, “I usually check on the older persons health at specific timings which includes some daily especially the hypertensive cases, diabetes, cardiac failure, dehydration and those who experience constipation”. Others I check them on monthly basis and when I suspect the older person of a sickness that she/hey may not be complaining about. Another response was, “I only take the
elderly to the hospital when they fall sick”. This meant that the elderly at Thogoto could be sick and since they were not complaining they may have to stay with the sickness or be attended to when it was too late which acted as a nutritional risk.

The most common illnesses with the elderly at Nyumbani included hypertension, diabetes, cardiac failure, dehydration and constipation while common colds were common at Thogoto (Table 4.6). Asked on what methods they use to manage illnesses some responses were, “diet therapy, drugs and a combination of the two and “drugs only”. Drugs used to treat illnesses acts as nutritional risk as they affect feeding and hinder nutrient intake. Little or no counseling was done at both homes. Concerning those with special feeding instructions some responses the researcher got included, “the older persons with better education followed their feeding instructions better than those who had no education, otherwise majority ate just to satisfy their hunger”. They also felt that some quality in physical, psychological and spiritual well being was important to the older person’s life and was occasionally offered.

4.6 RELATIONSHIP BETWEEN RISKS THAT HAD AN EFFECT ON NUTRITIONAL STATUS

This section deals with objective 3. It presents an assessment of risks that have been identified in relation to nutritional status. The data analysis procedure that
was used was Pearson’s Moment Correlation at 95-confidence level to find out relationship between variables and BMI while cross tabulations were done to find out the status of the homes and gender in terms of their nutritional status. The results between risk factors and nutritional status were found to be insignificant for most of the factors. The few factors in which significant relationships were found are presented in table 4.16 below.

Table 4.16 Respondents risks that had an effect on nutritional status

<table>
<thead>
<tr>
<th>Risks</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoiding vegetables</td>
<td>0.297</td>
</tr>
<tr>
<td>Pearson’s correlation</td>
<td>0.018</td>
</tr>
<tr>
<td>Sig. (2 tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>69</td>
</tr>
<tr>
<td>Edema</td>
<td>0.396</td>
</tr>
<tr>
<td>Pearson’s correlation</td>
<td>0.001</td>
</tr>
<tr>
<td>Sig. (2 tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>69</td>
</tr>
<tr>
<td>Use of denture</td>
<td>0.405</td>
</tr>
<tr>
<td>Pearson’s correlation</td>
<td>0.001</td>
</tr>
<tr>
<td>Sig. (2 tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>69</td>
</tr>
<tr>
<td>Age</td>
<td>-0.54</td>
</tr>
<tr>
<td>Pearson’s correlation</td>
<td>0.007</td>
</tr>
<tr>
<td>Sig.(2 tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>69</td>
</tr>
<tr>
<td>Missed meals</td>
<td>0.274</td>
</tr>
<tr>
<td>Pearson’s correlation</td>
<td>0.034</td>
</tr>
<tr>
<td>Sig. (2tailed)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>69</td>
</tr>
</tbody>
</table>

Pearson’s moment correlation

Pearson’s moment correlation found the following relationships significant. Avoiding of vegetables which was reported by 16 (23.2%) older persons shows a statistical significance relationship of ($r=0.297$, $p=0.018$) with BMI. This is a
nutritional risk since vegetables acts as roughage that prevents constipation and also acts as source of nutrients such as vitamins and minerals.

Sicknesses such as edema which was reported by 14 (20.3%) was significantly related to BMI ($r=0.396$, $p=0.001$). This would have resulted to mobility problems which is a nutritional risk in that the older persons person may be unable to move to where food was served.

Those who did not use denture 60(87%) shown a statistical significant relationship with BMI of ($r=-0.405$, $p=0.001$). This meant that those who did not have teeth and did not use denture had chewing difficulties. Other relevant significant found include age and nutritional status. As one advanced in age nutritional status declined ($r=-0.54$, $p=0.007$). This could be attributed to frailty, organ failure due to various sicknesses and reduced metabolic rate that reduced food intake.

Cross tabulations were also done in order to find out which home and the gender had a better nutritional status than the other. The results are as seen in the Table 4.17 below.
Table 4.17 Respondents gender, home and BMI

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>43</td>
<td>21.1</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>22.4</td>
</tr>
<tr>
<td>Thogoto</td>
<td>19</td>
<td>19.5</td>
</tr>
<tr>
<td>Nyumbani</td>
<td>44</td>
<td>22.4</td>
</tr>
</tbody>
</table>

The results of the cross tabulation showed in Table 4.17 reveal that generally women had a better nutritional status than men (women=22.4, men=21.1). Results for the different homes indicated that Nyumbani ya Wazee had a better nutritional status than Thogoto (Nyumbani=22.36, Thogoto=19.5).

In conclusion risks that the study found that could have an effect on the older persons nutritional status include, health related risks. Most of the older persons had a certain illness or illnesses. Psychologically the older persons were not comfortable with the homes. There were no exercises undertaken by the older persons. Lack of visits also brought about emotional stress which would have affected their appetite and also the feeding pattern that was practiced by the two homes was found inadequate.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Although the older persons have been acknowledged to be vulnerable in their nutritional status (Horwarth, 1989), little has been done to reverse this. Studies have also shown that relocation from familiar environment brings physical, psychological, functional, social deterioration and sometimes death (Cox, 1976). The study investigated how these risks and any other would affect the nutritional status of the older persons in the homes. In this section a summary is presented covering the purpose of the study, methodology, findings and conclusions based on the objectives of the study.

The main purpose of the study was to find out the effects of various risk factors that acted as nutritional risk for the older persons living in selected homes for the aged. The study results were based upon tests and analysis of data gathered from a purposive sample of sixty nine (69) older persons living in Nyumbani and Thogoto. Instruments used included interview schedules for the older persons, self administered questionnaires for the persons in charge of the homes, observation checklists and food frequency tables and anthropometrics measurements.
5.0 SUMMARY OF THE MAIN FINDINGS

Major risks that the study found related to nutritional status included; health risks which are various sicknesses (illnesses), and clinical signs that had a relationship with nutritional status. Oral health was found significant in relation to nutritional status. Economic status of each home contributed to the nutritional status. The homes could not be able to buy what the older persons preferred and employ more care givers to make sure all the older persons were catered for. Nyumbani being a well to do home than Thogoto had a better nutritional status of an average of 22.36 while Thogoto average BMI was 19.5. At the same time Thogoto had older persons who were severely and moderately malnourished who were 4 (6.4%) while Nyumbani did not have. Nyumbani on the other hand had 7 (14%) older persons who were overweight while Thogoto had only one. Nyumbani had many donors some of its older persons had pension which was directly channeled to the home. Thogoto on the other hand depended on the women guilds alone for its sustenance.

Social contacts were found to be a big contributing factor towards anyone’s nutritional status. Those who were visited were found to be happier people, emotionally stable, at the same time after any visit food consumption was higher than before. Food intake obstacles like disliking what had been cooked and avoiding some particular foods like cabbages and fruits brought about poor
nutritional status because this led to lack of essential nutrients. Oral problems, conditions such as incontinence that brought about embarrassment and refusal to eat so as to be able to control these situations formed a nutritional risk.

Food frequency practiced by both homes was found inadequate thus forming nutritional risk. Both homes gave three major meals in a day, which is inadequate as older persons are not able to eat enough portions per one serving. At the same time at the time of serving, the appetite may be poor meaning the amount consumed may not be enough. Consumption of harmful substances such as tobacco and alcohol which have a negative effect on nutritional status was found being practiced by the older persons. The amount of care given was also found inadequate especially to the very old who were functionally unable to take care of themselves or could not function independently. There were few workers to be able to give adequate attention to all the older persons who needed attention. Due to this shortage some older persons went without some meals, as there was nobody to remind them or to feed them. This in itself formed a nutritional risk.

Lack of exercise was observed and very few older persons 7 (10.1%) did any kind of exercises. This slowed the metabolic rate thus reducing food intake and consequently forming a nutritional risk. Increase in age was found to be statistically significant to BMI with a negative relationship of \( r=-0.54, p=0.007 \). As ones age increased nutritional status declined a fact associated with reduced
body functions and reduced metabolic status. The study compared the nutritional status of the two homes and their gender. It was found out that Thogoto had older persons who were severely and moderately malnourished 4 (6.4%) while Nyumbani did not have. At the same time Nyumbani was found to have a higher percentage of those who were obese 7 (14%). The average nutritional status for Nyumbani was (22.4) while Thogoto was (19.5). Female’s average nutritional status was 22.4 while males was 21.1 for both homes. A few statistical significant relationships between BMI, which was the nutritional status indicator, and Pearson’s Product Moment Correlation were found. These include, avoiding of vegetables \((r=0.297, p=0.018)\), illnesses such as edema \((r=0.396, p=0.001)\), and missed meals \((r=0.274, p=0.030)\) which all led to poor nutritional status.

5.1 CONCLUSIONS

The risk factors associated with nutritional status in both Nyumbani and Thogoto includes, health related problems, which affected all older persons and affected their appetite and food intake. Reduced appetite and food intake affects nutritional status in that one does not consume enough for optimal body mechanism.

Economic status affected food purchasing power of the homes in that a home could not be able to purchase what the older persons required because they could not afford. Social isolation was found to affect the emotional state of the elderly
and feeding pattern. This affected nutritional status in the case where one did not eat because of emotional disturbances.

Food intake obstacles such as dislike for certain foods, which are of better nutritional status than others that were preferred. This acted as a nutritional risk in that what may have been disliked could have been of better value than what they liked. Food frequency practiced by the two homes was found inadequate as they gave three major meals, which is not enough for the older persons. Incontinence also acted as food obstacle, which led to the older persons avoiding foods in order to control it.

The amount of care given to the elderly was found inadequate which led to some of them missing meals because they did not have somebody to help them while lack of exercise was evident in both homes. Lack of exercise reduces body mechanism and food intake. Also advanced age resulted to poor nutritional status as body organs declined in their functions, which affected nutritional status.

Nutritional status of the older persons was determined using BMI which indicated that Thogoto had older persons who were severely and moderately malnourished 4 (6.4%) while Nyumbani did not have. Those who were mildly malnourished 5 (7.9%) four were from Thogoto while Nyumbani had only one. Those found to be
obese were 8 (12.7%) and 7 (14.0%) of all the older persons at Nyumbani were in this category.

Risks that were found to have a relationship with nutritional status (BMI) which was used as nutritional indicator when related with Pearson’s Product Moment Correlation were; avoiding certain foods (r=0.297, p=0.018), edema (r=0.396, p=0.001), those who did not use of denture (r=-0.405, p=0.001), advanced age (r=-0.54, p=0.007) and missing of meals (r=0.274, p=0.034).

5.2 RECOMMENDATIONS

The following recommendations are made based on the findings; education for the organizations that run the homes, care givers and the older persons themselves.

The organizations should be educated on the importance of good health to the older person’s nutritional status. This is because the study found illnesses and sicknesses as the major contributing factors towards older person’s poor nutritional status when combined with other factors.

The relatives and children of the older persons should be taught on the importance of visits to the older persons and the care givers should facilitate visitation as it was found to increase food consumption. Also teach them to give small frequent meals to the older persons instead of the three major meals throughout the day so
as to increase the amount consumed. In order to reduce obstacles to feeding, care
givers should be taught how to prepare those foods that the older persons avoided
in a way that they preferred. They should also be encouraged to do exercises
一起 with the older persons as a way of motivating them and counsel them on
care giving practices in order to make sure those who had incontinence mixed
freely with others without the risk of being discriminated due to stench from their
urine. This would help these older persons to stop avoiding others especially when
they go to feed due to ridicule. The older persons should be educated on the
dangers of consumption of alcohol and tobacco in relation to their health and
nutrition.

Finally the government should come up with programs that will cater for the older
persons in their respective homes as the study showed that they preferred to stay in
their own homes if there was somebody to take care of them.

5.3 SUGGESTIONS FOR FURTHER RESEARCH

A comparative study on different risks associated with nutritional status of the
older person in different conditions such as those who live alone, those living with
relatives, older persons in the streets and the ones in the homes should be
conducted for both rural and urban areas.
REFERENCES


Good morning

I am Sarah Mwaniki, a postgraduate student at Kenyatta University, Institute of Applied Human Science and Technology, Department of Food, Nutrition and Dietetics. I am undertaking a research entitled risk factors associated with nutritional status among the older institutionalized persons. I am interested in understanding how the various risk factors impact on the elderly nutritional status.

You have been chosen as a respondent for this study and I would be glad if you spare sometime and answer some questions. Your response will be treated with utmost confidentiality and will be used for the sole purpose of this research.

Thank you for your cooperation.
QUESTIONNAIRE

The researcher will carefully read each of the following questions to the elderly and fill the appropriate response.

DEMOGRAPHIC INFORMATION

1. Gender
   1. Female ()
   2. Male ()

2. Marital status
   1. Married
   2. Divorced
   3. Widowed
   4. Single (never married)

3. Ethnicity.
   1. kikuyu
   2. luhya
   3. kamba
   4. luo
   5. Any other

4. Age in years.

5. Educational level (years of schooling)
   1. Primary 1-8
   2. Secondary 1-4
3. College
4. University
5. Nil education

6. Religious affiliation (now).
   1. Catholic
   2. PCEA
   3. ACK
   4. African Traditional religion
   5. None
   6. Any other protestant church

7. Religious affiliation (before)
   1. Catholic
   2. PCEA
   3. ACK
   4. African Traditional religion
   5. None
   6. Any other

8. Length of stay in the home in specific years

9. Occupation before coming to the home
   1. Housewife
   2. Manual jobs
   3. Farming
4. Professional job
5. House help/houseboy
6. Any other (specify)

10. Occupation at the home
   1. Helping in the kitchen
   2. Making items for sale
   3. Sitting/sleeping
   4. Cleaning in the home
   5. Any other (specify)

HEALTH RELATED INFORMATION

11. How would you rate your body health?
   1. Good.  2. Fair  3. Poor.  4. Don't know.

12. Do you suffer from any of these common illnesses?
   12a, chronic cardiac failure
   12b, high blood pressure
   12c, diverticulities
   12d, athrosis
   12e, depression
   12f, gastritis
   12g, bronchitis
   12h, diabetic
   12i, neuropatic disorders
   12m, blindness
   12n, dementia
   12o, arthritis/joint pains
   12p, STDs
   12q, epileptic
   12r, stroke
   12s, asthma
   12t, ulcers
   12u, hepatitis B
12j. cerebral malaria 12v. cancer
12k. constipation
12l. faulty circulation

13. Presence of observable clinical signs
   1. Yes 2. No

13a. dehydration.
   1. Yes 2. No

13b. edema
   1. Yes 2. No

13c. extreme weakness
   1. Yes 2. No

13d. mental disabilities/senile
   1. Yes 2. No

14. Are you on any medication?
   1. Yes 2. No

15. Have been admitted in hospital?
   1. Yes 2. No

16. Mobility of the elderly (to be observed)
   1. Those who walked well
   2. Those who use a walking stick
   2. Those on wheelchairs

17. Do you have biting or chewing problems?
1. Yes ()
2. No ()

18. What is the number of your teeth that are missing?
   1. None
   2. 1-5
   3. 5-10
   4. More than 10
   5. All

19. If you have missing teeth, are you using dentures?
   1. Yes
   2. No.

20. If yes which arch?
   1. Upper
   2. Lower
   3. Both
   4. Not applicable

21. What is the length of your denture use in specific years?
   5. 1 year
   6. 2 years
   7. 3 years
   8. 4 years
   9. More than 5 (specify)
10. Not applicable
PSYCHOLOGICAL PROBLEMS

22. What is your feeling about the home?
   11. Bad 3. Good
   12. Fair 4. extremely good

Explain the reasons as to why you think the home is (any) of the answers above.

23. Who helps you in time of distress?
   13. Sister/social worker 3. The workers
   14. Fellow elders 4. Any other (specify)

24. What about during the time of physical need?
   15. Sister/social worker 3. The workers
   16. Fellow elders 4. Any other

PHYSICAL ACTIVITIES

25a. Are you able to feed yourself?
   1. Yes 2. No

25b. Are you able to dress yourself without help?
   1. Yes 2. No

25c. Are you able to bath yourself?
   1. Yes 2. No

25d. What about going to the toilet?
   1. Yes 2. No
26. Do you undertake any exercises?
   1. Yes  2. No

27. What about any income generating activity?
   1. Yes  2. No

28. If yes specify the activity
   1. Making of beans
   2. Carving
   3. Weaving
   4. Any other (specify)
   5. Not applicable

29. How do you spend the income you get from the activity?
   1. Buying tobacco
   2. Buying cigarettes
   3. Buying beer
   4. Any other (specify)
   5. Not applicable

FAMILIES

30. Do you have children?
   1. Yes  2. No

31. If yes how many times do they visit you?
   1. Daily
   2. Once per week
3. Once a month
4. Once a year
5. Occasionally
6. Never
7. Not applicable

32. How many times do you visit them?
   1. Daily
   2. Once per week
   3. Once a month
   4. Once a year
   5. Occasionally
   6. Never
   7. Not applicable

33. Do you share meals at any visit?
   1. Yes  2. No

34. Do you have other relatives?
   1. Yes  2. No

35. Who visits whom?
   1. They visit me
   2. I visit them
   3. No one visits the other
   4. We both visit each other
5. Not applicable

36. How often do you/do they visit you?

1. Daily
2. Once a week
3. Once a month
4. Once a year
5. Occasionally
6. Never
7. Not applicable

37. Do you share meals during these visits?

1. Yes
2. No
3. Not applicable

38. How is your relationship with the staff?

1. Bad
2. Fair
3. Good
4. Extremely good

**FOOD INTAKE**

39. How would you describe your appetite?

1. Poor
2. Fair
3. Good
4. Extremely good

40. What are some of the factors affecting your eating pattern?
   1. Sickness
   2. Lack of teeth
   3. Lack of appetite
   4. If I don’t like the food cooked
   5. Any other
   6. None

41. What are some of the foods that you dislike?
   1. Rice
   2. Ugali
   3. Vegetables
   4. Chapattis
   5. Beans
   6. Any other (specify)
   7. None

42. What about the ones that you avoid?
   1. Chapatti
   2. Rice
   3. Ugali
   4. Vegetables
   5. Any other
   6. None

43. Do you have any medical condition preventing you from eating some?

   Particular foods?
   1. Ulcers
   2. Constipation
3. Nausea
4. Stomach pains
5. Coughing
6. Multiple sicknesses
7. None

44. Do you miss any meals?
   1. Breakfast
   2. 10 o’clock
   3. Lunch
   4. Supper
   5. None

NUTRITIONAL STATUS ASSESSMENT

45. Weight of the elderly in kilograms...
46. Height of the elderly in meters........
47. BMI in Kilograms per meters squared........
48. Mid upper arm circumference (MUAC)...
49. BMI interpretation
   1. Above 30.0 = grade 1 and 2 obesity
   2. 25.0-29.9 = overweight
   3. 24.9-18.5 = normal
   4. 18.4 –17.0 = mild malnutrition
   5. 16.9 –16.00 = moderate malnutrition
6. Below 16 = severe malnutrition

50. Arm span in centimeters

**FOOD FREQUENCY TABLE**

For each of the food item column/category please indicate the specific food against the particular time interval given for the last one week.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Time Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

**OBSERVATION CHECKLIST**

The researcher observed the following activities that were of importance to the study

1. Conditions of the home
2. Facilities available
3. Activities that the elderly are involved in
4. Care given to the elderly
5. What they elderly ate
6. Assistance given to the elderly
7. Validity of meals
QUESTIONNAIRE FOR THE NURSE AND SOCIAL WORKER

Risk factors that you come across as you treat the elderly that have an impact on their nutritional status.

Dear Nurse/Social worker,

I am a postgraduate student at Kenyatta University School of Applied Sciences, Department of Food, Nutrition and Dietetics. I am carrying out research to find out risk factors that are associated with nutritional status of older persons. Assistance from you by filling the following questions will be fully appreciated. Information received will be treated in strict confidence.

SARAH MWANIKI
PLEASE COMPLETE THE FOLLOWING QUESTIONNAIRE

1. Gender
   1. Male
   2. Female

2. Please indicate the year that you started working in the home.
   1. 19.............
   2. 20.............

3. Please indicate how well you enjoy working with the elderly.
   1. Extremely unenjoyable
   2. Unenjoyable
   3. Neutral
   4. Enjoyable
   5. Extremely enjoyable

4. After how long do you give the elderly check up?
   1. Anytime I feel it is convenient
   2. When one falls sick.
   3. Specific timings (specify)
   4. Any other (specify)
   5. Which is the most common illness do the elderly suffer from?

6. How do you manage these illnesses?
   1. Use of drugs
   2. Diet therapy.
   3. Drugs and diet therapy.
4. Any other (specify)

7. How do these illnesses affect the elderly feeding?

8. Please explain the methods that you use to control these illnesses that affect the elderly

9. Do you have counseling sessions?
   1. Yes
   2. No

   If yes what is the criteria for counseling.

10. What materials do you use for counseling the elderly?

11. According to your judgment do the elderly belief that good nutrition will Impact positively on their aging and health?
   1. Yes ()
   2. No ()

   If yes explain...........

Do you encourage the elderly to eat healthy in order to improve health and fight illness or do you believe they need to eat well before they die as a formality? Give reasons for your answer above.