

**KNOWLEDGE, ATTITUDES AND PRACTICES ON TRACHOMA AMONG
THE RESIDENTS OF KACHELIBA LOCATION, WEST POKOT COUNTY,
KENYA**

**BY
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DECLARATION

Declaration by Candidate

I declare that this thesis is my original work and has not been presented for defense in any other university. No part of this thesis may be reproduced without prior permission of the author and / or Moi University.

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DEDICATION

This research thesis is dedicated to my family for their support and patience during this work.

ABSTRACT

Background: Trachoma remains the leading cause of preventable blindness worldwide. About six million people have vision impairment resulting from trachoma infection worldwide. The prevalence of active trachoma in West Pokot County stands at 26.6%

Objectives: The overall objective was to determine the knowledge, attitudes and practices on trachoma among residents of Kacheliba location, West Pokot County.

Method: Cross-sectional study design that utilized convergent parallel mixed methods approach was used. Simple random sampling technique was used to identify the households. Data was collected using questionnaires, focused group discussions, key informant's interviews and observations checklists. Descriptive and inferential statistics were used. Data was presented using frequency tables, pie charts, chi square and standard deviation where appropriate. Liter scale was used for qualitative data.

Results: 325 participants were interviewed. The prevalence of active trachoma among the study population was 37 %. 47.2% of the respondents had insufficient knowledge that trachoma was spread through flies and fomites. 16.6% of the respondents strongly agreed to seek eye care treatment in the hospitals. 65% of the children had not washed their faces in the morning. 90.2% households had no hand washing facilities.

Conclusion: The prevalence of active trachoma in Kacheliba location was relatively high. The proportions of the study participants who seek traditional medicine were higher than those seeking modern treatment and most households had poor access to safe improved water, sanitation and facial hygienic behavioral practices.

Recommendations: Establish and provide an integrated community eye care outreaches by county and national governments; Promote and implement SAFE strategies for effective reduction of trachoma among the targeted high risks populations; and further research to be conducted on community socio cultural, attitudes and perceptions on trachoma.

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ABBREVIATION AND ACRONYMS

CHEWs	Community Health Extension Workers
CHVs	Community Health Volunteers
F & E	Facial cleanliness, Environmental improvements and personal hygiene
FGDs	Focus Group Discussion
GET	Global Elimination of Trachoma
GOK	Government of Kenya
HCWs	Health Care Workers
HHs	Households
IREC	Institutional Research and Ethics Committee
KAP	Knowledge, Attitudes and Practices
KBS	Kenya Bureau of Statistics
M.O.H	Ministry of Health
MDGs	Millennium Development Goals
NGO	Non-Governmental Organization
NTDs	Neglected Tropical Diseases
P.H.Os	Public Health Officers
S &A	Surgery, Antibiotics
SAFE	Surgery, Antibiotic, Facial cleanliness and Environmental improvements
SCMOH	Sub County Medical Officer of Health
SDGs	Sustainable Development Goals
UNICEF	United Nations Children Fund
W.H.O	World Health Organization

DEFINITIONS OF OPERATIONAL TERMS

Active trachoma: is an infectious stage of the disease caused by bacterium *Chlamydia trachomatis*. The infection causes a roughening of the inner surface of the eyelids. This roughening can lead to pain in the eyes, breaking down of the outer surface or cornea of the eyes, which commonly found among children 1-9 years of age.

Age: Number of years for an individual respondent life

Attitude: It refers to the way of thinking and behaviors of the community associated with trachoma.

Facial cleanliness: Routine washing of faces of children.

GET 2020: Global vision for Elimination of Trachoma by the year 2020.

Household (HH): A structure that shelters and protects an individual family.

Knowledge: This is acquired skill and level of understanding on ways of preventing and controlling trachoma.

Level of education: stages of formal learning which an individual person has obtained.

Level of knowledge: Information acquired by an individual for understanding trachoma.

Neglected tropical diseases (NTDs): Diseases commonly found in the tropical regions but attracts low priority for interventions.

Occupation: Type of works an individual respondent earns a daily living.

Personal hygiene: Process of routine maintenance and cleanliness of human body free from dirt and other body impurities or foreign matter that has negative effects on human health.

Practices: Refers to common customs, habits and traditional behaviors of the communities that contribute towards spread of trachoma.

Prevalence: Refers to the proportion of populations in the community having trachoma.

SAFE: Strategic actions (surgery, mass antibiotic treatment, facial cleanliness and environmental improvements) geared towards eliminating visual loss due to trachoma.

Sanitation: Standardized procedure of maintaining environmental improvements and cleanliness of households.

SDG: Goal 3 for the United Nations Sustainable Development Agenda 2030 envisaged achieving elimination of preventable blindness by 2030.

Trachoma inflammation- Intense (TI): A condition of trachoma that results in intense inflammation of the conjunctiva.

Trachoma inflammation-Follicular (TF): A condition of trachoma that results in follicular inflammation of the conjunctiva.

Trachoma: Refers to the infectious disease of the eyes which is caused by chlamydia trachomatis

Variable: Specific characteristic of the study populations in a given research area.

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CHAPTER ONE

INTRODUCTION

1.0 Background Information

Trachoma is a chronic inflammation of the conjunctiva and cornea, which is the leading cause of preventable blindness worldwide. It is estimated that six (6) million adults are blind from trachoma and 84 million people are affected by the infection worldwide (Haddad D, et al, 2016). Trachoma is the number one infectious cause of blindness in the world contributing to an estimated 6 million blind people. The risk factors of trachoma are commonly associated with hot, dry and dusty climates. Trachoma is the result of an infection of the eye with the bacteria, *Chlamydia trachomatis* which has serotype A,B and C. Trachoma infection is transmissible from person to person, and is frequently passed from child to child and from child to mother. If left untreated, the infection eventually causes the eyelid to turn inwards, which in turn causes the eyelashes to rub on the eyeball, resulting in intense pain and scarring of the front of the eye. This ultimately leads to irreversible blindness. Because trachoma is transmitted through direct and indirect contact, it often infects entire families and communities (MOH, 2017).

1.1 Transmission of Trachoma

The microorganism that causes trachoma is known as *Chlamydia trachomatis* serovars A, B and C. It is an obligate intracellular organism which targets the columnar and squamo-columnar epithelial cells of the conjunctiva, respiratory tract, genital tract and the intestinal tract. There are several genovars of a single serovar. This may explain why a serovar may cause multiple re-infections probably by escaping immune system. Recurrent infections with *chlamydia trachomatis* and super-infections result in cell mediated and humoral response, which cause severe intense inflammatory

conjunctivitis. Laboratory tests for detection of chlamydia include iodine and Giemsa stains, tissue culture in cycloheximide-treated McCoy cells, direct immune fluorescence and enzyme linked immunoassay and polymerase chain reaction. Sensitivity and specificity vary from one test to the other but tissue culture has been used as the gold standard in most studies (Gordon et al, 2018; Bobo et al, 2017)

Transmission of trachoma occurs through direct contact with ocular discharges of infected persons. This can be either directly via fingers contaminated with discharges or indirect contact with contaminated fomites such as towels, clothes and nasopharyngeal discharges from infected people and materials soiled therewith. Flies especially *Musca sorbens* in Africa and in the Middle East, contributes to the spread of the disease. In children with active trachoma, chlamydia can be recovered from the nasopharyngeal and rectum. *Chlamydia trachomatis* is present in large numbers during the early stages of the disease and disappears gradually.

Secondary bacterial infection increases the risk factor of trachoma reinfection. If corneal ulceration occurs, scarring is more severe and more rapid, possibly resulting in perforation of the cornea and so leading to blindness. (Haddad et al., 2016).

In endemic areas, children get infection at an early age. Because the early stages are the most effective since transmission is high among children. Bacterial infection and Vitamin A deficiency exacerbate the disease and predispose to scarring, leading to blindness. Trachoma is more common in dirty, dry, hot and densely populated areas.

Risk factors of trachoma include scarcity of water; face washing inadequacies; poor personal hygiene; Poor environmental hygiene; High house fly density; Cow ownership; Crowding in sleeping areas; Lack of knowledge, attitudes and healthy practices among endemic communities (Fred Hollows Foundation, 2015; MOH,2017)

1.2 Classification of Trachoma

Trachoma is a contagious chronic keratoconjunctivitis with the active trachoma (TI and TF) occurring more in young children and the blinding trachoma (TT and CO) occurring later in adult life. In 1987, the WHO adopted the simplified trachoma grading, which summarizes its major clinical signs. The grading enables health and community workers to record the clinical findings in a standardized way and also makes it easy for researchers to compare their research findings. Trachoma infection can be classified into 5 grading stages (Emerson, 2016);

TF-Trachomatous Follicular inflammation is characterized by the presence of follicles each at least 0.5 mm in diameter on the central part of the upper tarsal conjunctiva.

TI - Trachomatous Intense inflammation is pronounced inflammatory thickening of the upper tarsal conjunctiva that obscures more than one half of the normal deep tarsal levels. Also this stage usually occurs in children of 1-9 years of age.

TS-Trachomatous conjunctiva Scarring (TS) is the presence of easily visible scars in the tarsal conjunctiva of the eye.

TT-Trachomatous Trichiasis is defined as the presence of at least eyelashes rubbing on the eyeball or evidence of recent removal of in-turned eyelashes.

CO-Corneal Opacity occurs due to easily visible opacity over the pupil. It is so dense that at least part of the pupil margin is blurred when viewed through the opacity (WHO, 2018).

1.3 Trachoma Control

The WHO has adopted Global Elimination of Trachoma (GET) 2020 global initiative. The WHO recommended SAFE strategy for the control of blinding trachoma (Hannah K. et al, 2017). SAFE stands for: -

S-Surgery for trichiasis

A-Antibiotic treatment through Mass Drug Administration (MDA) for active trachoma

F-Facial cleanliness

E-Environmental improvements

The WHO has defined the elimination of trachoma as a public health issue, when there is less than 5% clinically active trachoma in children. The intention is to lower the amount of infection to such a low level that it will not be possible for the chlamydia trachomatis to re-populate the community (Bruce et al, 2016).

1.4 Statement of the Problem

Trachoma is a major cause of blindness in the poor nations especially in Africa, Asia and the Middle East (Kurylo, 2017). Trachoma is the second overall leading, after cataract infection and the number one infectious cause of blindness in the world (Vision& development, 2015). It is estimated that about 6 million people are blind from trachoma globally (Robbins, 2015). Females are more afflicted and affected by trachoma than males (MOH, 2017).

The trachoma is commonly found in areas with hot, dry, arid and dusty climates (MOH, 2017). The rate of trachoma infection and risk of blindness from trachoma is 3 to 4 times higher in women than in men (MOH, 2017).

An estimated 47,500 people in Kenya are blind as a result of trachoma infection and 20% of the population is at high risks of trachoma infection. Trachoma is considered the second leading cause of avoidable blindness after Cataract in Kenya, accounting for 19% of the blindness (MOH, 2017). The Kenya's national eye care management information data from the sub counties and a national blindness survey conducted indicated that trachoma may still be endemic in 12 counties out of the total 47 counties

in Kenya (MOH, 2018). The population of the 12 suspected trachoma-endemic counties is about 6 million people (MOH, 2017; MOH, 2018).

West Pokot County is particularly badly affected with 6% of adults and 26.6% of children aged 10 years and below living with some degree of active trachoma (MOH, 2017; Karimurio, J et al, 2013; MOH, 2018). Children were at high risks of infection than adults, because children spend more time uncared, playing in dirty environment and regular exposure to faeces (Kurylo, 2017). As a result of repeated exposure to trachoma infections, women were more likely than men to develop trichiasis, the advanced stage of trachoma. It is believed that inadequacy of knowledge of the communities living in trachoma endemic areas influence the spread of trachoma in Kenya (MOH, 2017).

Despite government and development partners' trainings of health workers and CHVs to promote trachoma control interventions in Pokot North Sub County, trachoma is still the leading most prevalent NTD being reported in Kacheliba Sub County Hospital (MOH, 2018).

1.5 Justification of the Study

Trachoma endemicity is currently confirmed in 12 counties, with 59 sub counties in the arid and semi-arid region of the country of Kenya (MOH, 2018). Approximately 10 million people living in these counties are at high risk of infection with trachoma (MOH, 2018).

The current trachoma counties prevalence varies and preferably influenced by the knowledge, attitudes and practices of the trachoma endemic communities of Kenya. The Fred Hollows foundation in conjunction with ministry of health West Pokot county had rolled out trachoma elimination programme mainly focusing on Surgery and

Antibiotics (SA) components whereby almost 7,000 targeted surgeries were conducted while 20,400 people were reached through Mass Drug Administration (MDA) of antibiotics to the targeted legible populations in Pokot North, Pokot Central and Pokot West (MOH, 2019). Both the MOH and development and implementing partners had lesser focused attention on Facial cleanliness and Environmental improvement (F & E) components. Without much focus on the knowledge, attitudes and practices of the communities may have led to increased transmission of trachoma prevalence in Pokot North Sub County resulted to minimal progress in achieving elimination or stopping trachoma prevalence (Fred Hollows Foundation, 2017).

In 2019, a survey conducted in 190 villages in Pokot West and Pokot North sub counties showed that there was an increase of 1,200 TT cases up from 430 TT cases in Pokot West and an increase of 1,430 TT cases up from 800 previous TT cases in Pokot North (MOH, 2020). Low surgery seeking behaviors, poor facial cleanliness and inadequate environmental improvements practices were identified as key risk factors that significantly contributed to this situation as a result of insufficient knowledge, attitudes and practices of the communities.

There was inadequate routine reliable information data on the prevalence and incidences of trachoma from the rural health facilities in Pokot North Sub County (MOH, 2018).

No study of this kind had been done to determine the knowledge, attitudes and practices on trachoma among residents of Kacheliba location of Pokot North Sub County.

This study therefore would provide insight and beneficial recommendations that would guide the government, local and international non-governmental organizations and other public health implementing partners working in the trachoma endemic region on

how best to implement SAFE strategies by focusing more on knowledge, attitudes and practices of the trachoma endemic communities as well as to conduct trachoma prevalence surveys and future studies.

Information generated from this study may be used at County and Sub Counties levels in planning and implementation of an effective trachoma Elimination program.

1.6 Research Question

What was the role of the knowledge, attitudes and practices on trachoma among the residents of Kacheliba location, West Pokot County?

1.7 Broad Objective

The broad objective of this study was to determine the prevalence, knowledge, attitudes and practices on trachoma among residents/nomadic community of Kacheliba location, West Pokot County.

1.8 Objectives of this Study

1. To determine the prevalence of trachoma in Kacheliba location
2. To determine the knowledge on trachoma among communities of Kacheliba location
3. To determine the attitudes on trachoma among communities of Kacheliba location
4. To identify the common practices on trachoma among residents of Kacheliba location

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section reviews literature on history of trachoma, prevalence of trachoma, the knowledge, attitudes, practices and theoretical framework.

2.1 Overview

Globally, 1.2 billion people live in trachoma-endemic areas, primarily in the poorest communities in the developing world that lack access to basic health care services, sanitation and hygiene infrastructure, and it is estimated that 41 million people, mostly women and children have active trachoma and need treatment, with pre-school age children being the most at risk of infection (Vision and development, 2015).

Trachoma is an infectious eye disease that affects the poorest of the poor in Africa and Asia. An estimated 720 million people live in areas where they can be exposed to trachoma mostly found in Africa and Middle East countries, the world's leading cause of preventable blindness (Kurylo, 2017).

Trachoma affects 720 million people of whom about 2.2 million are visually impaired and 9 million are blind (Cromwell et al, 2017). WHO published data on global blindness report shows that 15% of all cases were due to trachoma resulting to an estimated 107 million individuals in need of eye care for active trachoma. Of these, 10 million are in need of surgery for trichiasis (eyelashes touching the globe of the eye) and 9 million people are already blind (WHO, 2016). Trachoma is responsible, at present, for more than 3% of the world's blindness but the number keeps changing due to the effect of socio-economic development and current control programs for this disease. In spite of this, trachoma continues to be hyper endemic in many of the poorest and most remote

poor rural areas of Africa, Asia, Central and South America, Australia and the Middle East. The sequel of active trachoma appears in young adulthood and in middle-aged persons. In hyper endemic areas, active trachoma is most common in pre-school children with prevalence rates as high as 60-90%. It often affects the most vulnerable members of communities--women and children. Adult women are at much greater risk of developing the blinding complication of trachoma than are adult men. This increased risk has been explained by the fact that women generally spend a greater time in close contact with small children, who are the main reservoir of active trachoma infection (Kurylo & Cross, 2017).

Worldwide estimates of people affected by or at immediate risk for developing blindness from trachoma range from 5.2 - 9 million. Approximately 720 million people, or 10% of the world's population, are affected or are at immediate risk for developing the disease. Ninety-eight (98%) percent of trachoma cases are found in developing countries, primarily in Sub-Saharan Africa and the Middle East, with substantial pockets of endemicity in Asia, Mexico and Latin America and Australia (Robbins, 2015).

Despite the lack of reliable data, trachoma is considered to be the second leading cause of avoidable blindness in Kenya after cataract, which contributes 19 % of the total cases of blindness. Trachoma is endemic in 12 out of the 47 counties, with 59 sub counties of Kenya. The total population of the trachoma-endemic Counties of Kenya is estimated to be over 10 million in 2016. The worst affected trachoma regions in Kenya are the Rift valley, Eastern and North Eastern (MOH, 2017; MOH 2016). Trachoma risk factors are multiple and interrelated (Dan et al, 2014).

2.2 Prevalence of Trachoma

Active infection with chlamydia trachomatis is mostly seen in young children with peak incidence before age 10, while subsequent scarring and blindness is seen in adults. Studies have found that children are mostly affected because of their lower immune system (WHO, 2015).

Children especially young girls are at high risk of active trachoma infection, while two-thirds of blind people were adults who are women. It is because women spend more time caring for children hence more exposed to trachoma (Cross, 2017).

There is evidence from surveys carried out in many trachoma-endemic countries that is not uncommon for girls as young as 5 years of age to be responsible for the care of infants and other children. This pattern persists into young adulthood as women and girls serve as the primary caregivers for their families. Research has shown that for children with active trachoma in a household there is a subsequent risk of re-infection. (Cromwell et al, 2017).

Kajiado County was found to have a higher prevalence of Trachoma in boys (32.0%) than 24% in girls (MOH, 2015). In 2012, University of Nairobi (UON) conducted a study in Shompole location in Kajiado County which reported slightly higher prevalence of trachoma in girls (86%) than 83% in boys (MOH, 2015).

In 2013, Fred Hollows foundation conducted trachoma prevalence survey in West Pokot County, where there were more children (26.2%) than adults (3.4%) with trachoma (Fred Hollows foundation, 2015).

2.3 Community Knowledge on Trachoma

It is believed that inadequate knowledge of the communities living in trachoma endemic areas influence the spread of trachoma especially in Africa region (Vision & development, 2015). Trachoma is high among household heads are not knowledge about the disease (UNICEF, 2018). The prevalence of trachoma in the households declined as the knowledge attainment of its heads increased (WHO, 2016). Adult knowledge appears to be a protective factor for trachoma as well as formal primary and secondary education. A similar correlation is seen with the mothers' knowledge attainment. The prevalence of trachoma among children of mothers without knowledge of the disease is higher compared to that in children where their mothers were knowledgeable (UNICEF, 2018).

According to KAP study conducted in East Pokot sub-county, the majority (86.4%) of the people in the community had insufficient knowledge on trachoma while almost half of them confused trachoma with other diseases like measles (Fred Hollows foundation, 2015).

Most rural communities especially in the third world countries had no knowledge on the major causes of blinding trachoma. According to the available statistical data which showed that 99% of the Pokot North communities had inadequacy level of knowledge on transmission and prevention of trachoma (MOH, 2018).

2.4 Community Attitudes on Trachoma

The absence of good services in health, education and livelihoods combined with lack of community sensitization and awareness creation, and negative psychosocial effects on individuals such as loss of dignity, trust, self-esteem, meaning in life, safety and

hope was very common influencers attitudes on trachoma infections (Vision & Development, 2015).

The ambivalent attitudes of people toward health services appears to be a universal phenomenon in many local communities in Africa, and perhaps hinges on the local people's attitudes and perspectives of the trachoma, which varies from place to place, from communities to communities. A study conducted in the Gambia concluded that for any intervention strategy to achieve the intended set goals of eliminating trachoma in spite of other constraints, community attitudes, perceptions and participation is very essential, and in order to achieve this, the healthcare providers need to have a better understanding of the community attitudes and their perceptions on the trachoma (Ajewole JF et al., 2016). In Nigeria, it was observed that aspects of community attitudes and perceptions were most essential for optimal uptake of integrated eye health services such as surgery seeking, Antibiotic administration, basic sanitation, hygiene and environmental improvements (UNICEF, 2017).

Trachoma has been likely prevalent among the Maasai and other pastoral tribes of Eastern Africa communities for a number of generations and possibly hundreds of years, as a consequence of their community attitudes, it was taboo for women or children and men to share the same pit latrines. Around the boma, women attitudes traditionally was to disposed of human wastes into the heaps of animal wastes, collected in a central fenced-off stockade surrounded by the boma attracting flies causing trachoma (Kamurio et al, 2016).

Additionally, due to other existing community taboos, two latrines are required: one for women and children and another for men (MOH, 2017). In Eastern Africa communities, they believed traditionally that flies are a source of wealth and blessings therefore

whoever removes flies from their eyes willingly wants to resist blessings of wealth (MOH, 2017). Majority of East Africa pastoral communities attributed trachoma to be caused by supernatural factors including punishment by God, curses and accidents. Hardly rural communities' attitudes in third world countries never believed that blinding trachoma was infectious or contagious disease (Taylor HR et al., 2016).

Most Eastern Africa communities viewed Trachoma as a 'bad eye' disease and some of them believed it was a "dirty" disease (Cromwell et al., 2017).

Misguided information appears to have made many communities to negative beliefs and attitudes resulting in a lack of concern for visually impaired and blind people. In general, negative community attitudes prevailed in respect of marriage of blind persons. The attitudes of majority of the communities in arid and semi-arid regions in Africa and Asia would not want to marry blind persons, believing that they would transfer the disease to their children and grandchildren (Taylor HR et al., 2016).

2.5 Practices

In some African countries, for example, commonly practice open field defecation and share houses with animals. Such practices enhance the breeding of houseflies that transmit the trachoma disease. Indeed, in Nigeria, for example, only about 30% of the populations have adequate access to safe sanitation and hygiene systems and in rural areas this percentage drops further to less than 25%. Majority of communities living in trachoma endemic areas especially in Sub Saharan Africa countries have poor access to basic sanitation and insignificant access to quality of health care services. This is worse in the very remote rural communities of sub Saharan Africa countries where entire areas are without access to adequate sanitation facilities (UNICEF, 2018).

2.5.1 Poverty

In addition to the misery and pain of trichiasis and the disability caused by blindness, trachoma causes dependency and is a barrier to socio economic development. The cost of disability and potential loss in productivity alone due to trachoma has been estimated to be in excess of \$2 billion per year (Emerson & Frost, 2016).

Trachoma now largely affects rural and urban poor people with low socio-economic status, often most remote areas of Africa, Southeast Asia, Central and South America, the Middle East and Australia. Regions such as the Sahel and the Nile and Rift valleys of Africa are settings of limited economic development, low sanitation coverage, and poor access to community eye care services. Trachoma is a disease of poverty that most often afflicted people that they cannot do their daily tasks, so children stay home to do that work, and miss school. The children are kept at home to handle family chores as their mothers go blind as result of stricken poverty causing blinding trachoma (Cross, 2017).

Living in absolute poverty has several serious consequences at individual, family and community level on trachoma infection. This is even more evident in situations where exclusion, discrimination and socio-economic barriers have commonly held families and communities in absolute poverty for generations which predisposes them to trachoma (Vision & Development, 2015).

Despite being avoidable preventable and treatable disease, trachoma still remains a major public health challenge and socio-economic burden in Kenya. Trachoma prevalence is known to reduce rapidly with improving socio-economic status of the community. The poor and marginalized communities living in hot, dusty and dry areas are at high risks of trachoma infections (WHO, 2015).

High prevalence of trachoma infections persists in households with lower socio economic incomes and where the households' heads are poorly educated (Barley et al, 2015).

2.5.2 Garbage Disposal, Toilets and Flies

Households' garbage disposal habits contribute to the high fly population density. Households discarded rubbish and scraps provide suitable breeding sites for *Musca sorbens* (Forsey et al, 2016). Rotten garbage, vegetables and other decaying wastes would attract flies because of strong odors that emanate from the households wastes. The flies use these areas as breeding sites. In warm climates house fly larvae may leave the garbage sites after only 3-4 days from the time the eggs were laid. Flies have been associated with trachoma for more than 400 years ago (Solomon et al, 2015). The lowest numbers of flies moving into households are reported to occur between 7 and 8 am and 5 and 6 pm due to poor visibility (WHO, 2014).

High fly density is known to be associated with high prevalence and more severe active trachoma (Ngondi et al, 2018).

Human faeces are good larval medium for *Musca sorbens* than animal faeces and produces flies which are larger and stronger. The flies feed on the eyes and nasal discharges and are attracted by a dirty unwashed human face (Emerson et al, 2019).

Toilets were very uncommon in the nomadic communities but exposed human faeces were rarely seen. Dogs may be playing a key role in clearing away human faeces in the homesteads compound (Matende et al, 2017).

According to the recent KAP study conducted in Pokot North sub-county, almost all the households (94.1%) defecate in open field. 6.9% of those households with latrines

did not wash hands at critical times. It was also noted that Pokot North Sub County had less than 5% households' latrine coverage. Furthermore, majority (84.2%) of the rural households disposed of children faeces into the open fields. The children faeces are most significantly liked by flies (Karimurio et al., 2016).

2.5.3 Keeping Domestic Animals

Keeping animals within the households' compound is an important security measure for the nomadic communities. Animal dung and milk attract and act as feeds for flies and hence increase the transmission of active trachoma (Robbins, 2015).

Having animals and keeping them in the homesteads may be related to high breeding of fly density (Dan et al., 2014).

2.5.4 Water Availability, Use and Distance

Lack of water makes it difficult to maintain personal hygiene and face washing practices among many households' families. Improved access to water supply helps to reduce trachoma transmission. It is believed that increase amount of water availability results in more frequent maintenance of personal hygiene and facial cleanliness purposes (Barley et al, 2015).

Increased frequency of face washing has been proposed as some of the key intervention mechanism for trachoma control (Stieren, 2018; Schwab et al, 2017; MOH, 2013-2015; Solomon et al., 2015). The amount of water used does not appear to increase when the distance is reduced from 1 kilometer (approximately 30 minutes round trip), unless it is placed in the home providing more accessible water to households than travelling further by one kilometer for water that could promote water use for behavior change; possibly increasing the amount used for personal hygiene (Cain cross and Feachem, 2018).

For communities having primary water sources within one-kilometer, new water provisions alone may be less likely to change traditional water use behaviors. Therefore, behaviors and hygiene practices needs to be strongly considered when identifying water as a risk factor for the trachoma disease. The quantity of water brought into a household and how it is used for face washing and personal hygiene may be more significant than the distance (West et al., 2016).

The distance from the primary water source to households as measure of availability has been used as a risk indicator for active trachoma. Some studies show that the further the distance to primary water sources from households the higher contributor to risk of getting trachoma (Barley et al., 2015; MOH, 2013-2015; Taylor HR et al., 2016).

2.5.5 Environmental Improvements

Environmental improvements, in particular sanitation and hygiene, are necessary across many communities as lack of adequate basic sanitation and hygiene facilities and practices such as open defecation affect not only specific households who lack sanitation and hand washing facilities but the community as a whole. Poor environmental sanitation and hygiene favors the transmission of trachoma by providing favorable fly breeding sites (Vision and development, 2015).

Furthermore, good hygienic practices are closely interrelated to the use of water. In Nigeria, less than 50% of an adequate primary water sources is available for people and in rural areas where trachoma thrives, this is even more less than 30% (UNICEF, 2018). Most communities in the trachoma belt in Nigeria are living in arid dry and hot areas, with severe scarcity of essential water, especially during dry seasons of the year is more evident (UNICEF, 2018).

Currently, Pokot North Sub County has more than 836 people affected by the advanced stage of trachoma (Kenya Trachoma Impact Survey, 2015). The prevalent of trachoma in the Pokot North stands at 26 % (Fred hollows foundation, 2015; MOH, 2018)

2.6 Conceptual Framework

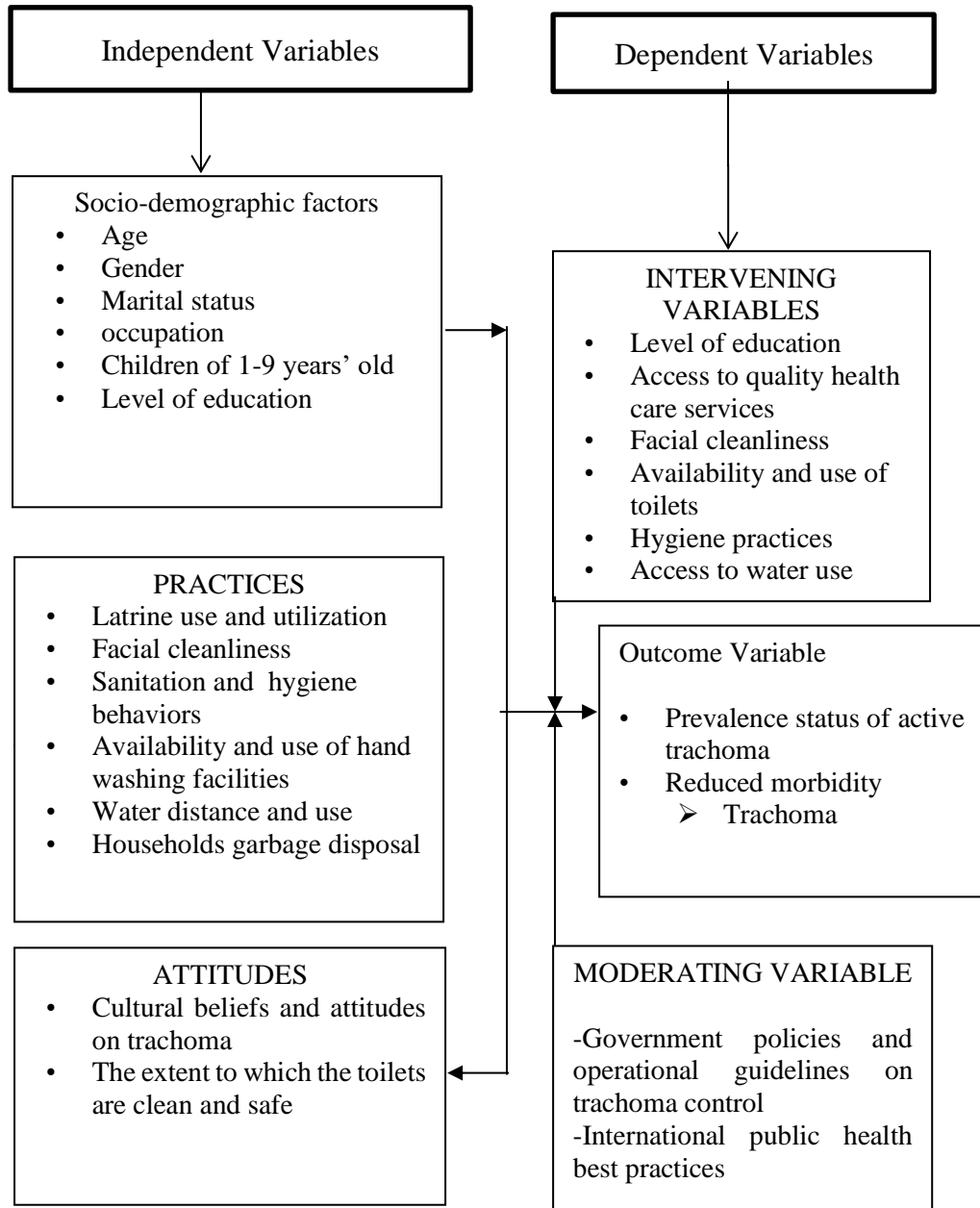


Figure 1: Conceptual framework showing association between knowledge, attitudes, practices and trachoma

2.6.1 Explanation of the relationship of variables in the conceptual framework

This study presented the influence of independent variables that was knowledge, attitudes and practices on trachoma illness as it related to dependent variables which was the prevalence of the trachoma infection.

The independent variables on knowledge of the community on trachoma underscored the significance of knowledge on the cause, transmission, prevention and treatment in relation to prevalence of the trachoma infection in the community. The second independent variable was on the Practices. These practices focused on the importance of observation of basic hygiene practices, households refuse disposal, availability and use of toilets in relation to prevalence of trachoma. The third but not least predictor was the community attitudes on trachoma. It focused on the attitudes of the community on the disease and its effects.

The study had also identified intervening variables such as community literacy and policy level. There was an assumption that their effect on the two major variables had a constant influence.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the various methods that were used in conducting this research. The chapter encompasses the following sub-sections; description of the study area, study design, target population, instruments, data collection procedure, data analysis and ethical considerations. The study was conducted between 20 August 2016 and 15 October 2016 to determine the knowledge, attitudes and practices on trachoma among residents of Kacheliba location in Pokot North Sub County of West Pokot County, Kenya.

3.1 Study Area

This study was carried out in Kacheliba Location of Pokot North Sub-County. This was due to advice given by Pokot North Sub County Medical Officer of Health (SCMOH) that the geographical area has high prevalence of trachoma. The livelihoods of the Majority of the respondents practiced pastoralism lifestyle. Each household in the study village was expected to have an average of 4 children (KBS, 2019).

Kacheliba location is located in Suam Ward of Pokot North Sub-County which covered an area of square kilometers 115.1 and about 40 km drive from Kapenguria town, the headquarters of West Pokot County situated westward direction. Suam Ward had 5 Locations with 14 sub-locations with an estimated 13,799 Households (Kenya National census, 2019). The study was done in 3 Sub-locations of Kacheliba location namely Nakuyen, Karon and Asilong. The geographical features of Kacheliba location is characterized by arid dry, hot and dusty environments with small hills, scattered short acacia trees and seasonal main water sources like surface dams, pans, wells, dry rivers and dug boreholes for both human and animals use. This region has good potential for

keeping livestock such as sheep, goats and camels production. It has annual rainfall of below 300 ml.

High temperatures ranges from 30°C to 40°C with minimum temperatures which reaches 20°C in June to August every year during rainfall seasons while maximum average temperatures reaches 32°C between September and March of every year.

Suam Ward had one operational Kacheliba Sub-County Hospital with 8 peripheral health facilities, which provided curative and primary healthcare services delivery to the local communities and health referral of complicated cases to the Kapenguria County Referral hospital of about 40 km away. This study was conducted in Kacheliba Location within Suam Ward of Pokot North Sub County.

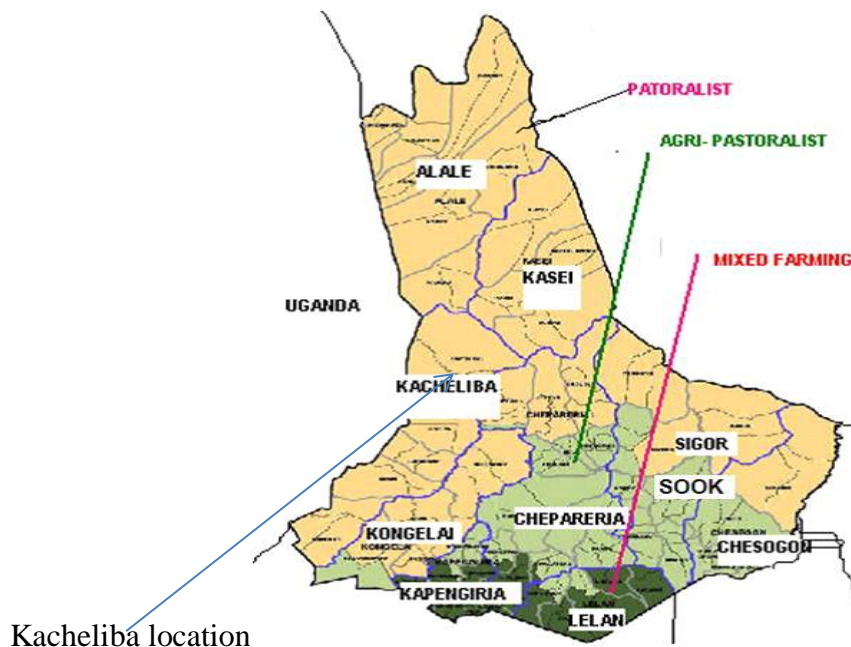


Figure 2: Map of West Pokot county and livelihood zones (KBS, 2019)

3.2 Target Population

The study target population was heads of households with children of 1-9 years in Kacheliba location, Suam Ward of Pokot North Sub-County. Studies had shown that

the burdens of chlamydia trachomatis was mostly found in young children of below 9 years of age, who acts as main reservoir of active trachoma infection (Ngondi et al., 2018).

3.3 Study Population

The study population was 326 households with an estimated population of 5,125 people (Kenya National census, 2019). The study subjects were drawn from 326 households within Kacheliba location. The respondents were heads of households living in Kacheliba location at the time of the study.

3.4. Study design

The community-based cross-sectional design that utilized convergent parallel mixed methods approach (quantitative and qualitative) was used to determine the knowledge, attitudes and practices on trachoma among the residents of Kacheliba location. This study used two mixed methods design; quantitative and qualitative.

3.4.1 Quantitative design

This method was used to determine the prevalence, knowledge and practices of the study participants on trachoma. Also quantitative method was used to know number of children of 1-9 years with active trachoma and in observational practices such as presence of latrine, use and utilization of latrines, availability of water use, presence of hand washing facilities, presence of flies in children faces, distance of animals' enclosure and households' garbage disposal methods applicable and garbage distance from homesteads.

3.4.2 Qualitative design

Qualitative methods focused on attitudes of the study participants through FGDs and KII that explained the variations in attitudes and behaviors of the respondents

associated with trachoma. For the qualitative analysis, the study population was key informants from community health care workers and local opinion leaders. Qualitative data was obtained using in-depth key informant interviews and FGDs from the study participants as follows; In-depth interviews was carried out with key informants living in the community who were local opinion leaders, health care workers and Community Health Volunteers while FGD was used for selected heads of households.

3.5 Sample Size Determination

The sample size was determined by the use of Fisher *et al* statistical formula:

$$n = \frac{Z^2 \times P \times q}{d^2}$$

Where:

n = desired sample size (when population was greater than 10,000)

Z = the standard normal deviate set at 1.96 which correspond to 95% confidence interval

P = prevalence of active trachoma in the study area (26% from trachoma Survey previous data)

q = 1 – p (in this case q=1.0 - 0.26)

d = the degree of accuracy desired, which was set at 5% or 0.05 corresponding to the 1.96

Therefore in substitution:

$$n = \frac{1.96^2 \times 0.26 \times 0.74}{(0.05)^2}$$

$$= 296 \text{ heads of households}$$

Adjusting for non-response rate (10%) gives sample size of 326 respondents

For qualitative method (FGD& KII), sample size of 24 informant participants was purposively selected from the study area. The sample size of 24 informant participants

was 20 health care workers and 4 community opinion leaders who were included in the study.

3.6. Sampling procedure

To obtain representative sample population in the study area. Among the six (6) administrative Wards found in Pokot North sub-county, one (1) administrative Ward was randomly selected.

Simple random sampling was used to select one location out of 19 locations by ballot method.

From within the selected location, three sub-locations were picked randomly. 2 villages were simple randomly picked from each of the three sub-locations.

In each village, randomly picked the starting households

In each village, went to the Centre of the sub location and spanned a bottle to randomly pick the starting households.

Eligible households were sampled consecutively until the desired sample was reached. Households without eligible children were skipped

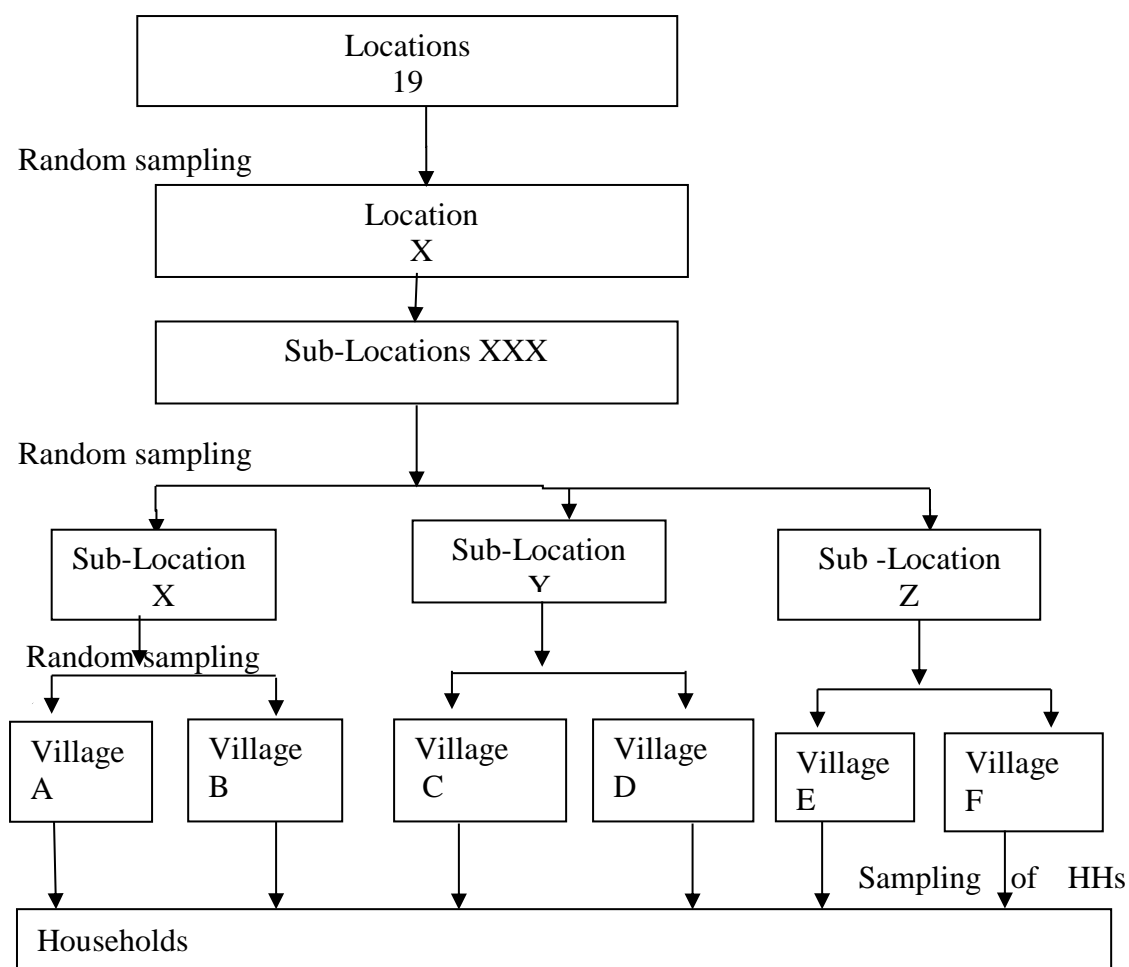


Figure 3: Flow chart of the study sampling procedure

At the picked location, the desired sample size was distributed proportionately to the three selected sub locations as per the table below;

Table 1: Pro rata allocation of estimated sample of 326 distributed by sub-location

Location X				
Sub-location	HH	POP	Proportionate sample	Pro rata sample allocation
X	287	1776	113	113
Y	261	1786	114	114
Z	255	1563	99	99
Total	803	5,125		326

Sampling interval was first calculated to determine a fixed and equal interval as follows;

$$K=N/n \quad \text{where } N = \text{size of Population}$$

$$n = \text{Sample size}$$

$$1436/326 = 4.40(\text{Rounded off to } 4)$$

First household was picked at random from the list provided by village elders or headmen from the centre of the first selected sub location and subsequent households were picked consecutively after every 4th household on the list.

FGD and KII were used in determining the attitudes of the community on trachoma. FGD was used to select heads of households while KII used for local opinion leaders in the selected location. One FGD was composed of 9-12 participants and KII consisted of 24 subjects.

3.6.1 Selection of key informants

Key Informants

Selection of key informants was done by purposive sampling technique depending on their positions and roles and responsibilities in the community. The category of KII were distributed as follows;-

Health Care Workers (HCWs)

From the list of Nurses, Clinical officers, PHOs and CHVs in the linked four (4) Government of Kenya (GOK) health facilities and community units were chosen purposively and consent sought for their participation. If the selected Nurse, Clinical officer, PHO and CHV did not consent, another Nurse, Clinical officer, PHO and Community Health Volunteer in the same area was chosen purposively. Nurses and clinical officers were used to collect prevalence data of trachoma among children 1-9

years while other health workers were used to collect data on the knowledge, attitudes and practices of the community on trachoma.

Community opinion leaders

Four community opinion leaders in the selected communities served by the location were included in the study and invited for participation. If the local opinion leader was not available, another local opinion leader from the neighboring sub location was selected purposively.

The KII was distributed as follows;-

Table 2: Distribution by KII

No	Position	No. of Respondents
1	Chiefs	4
2	CHEW/PHOs	4
3	CHVs	6
5	Nurses	5
6	Clinical officers(COs)	5
Total		24

4 community opinion leaders and 20 health care workers were selected purposively for participation in KII. The KII was used to confirm information obtained from the community on the prevalence, knowledge, attitudes and practices on trachoma and also the probable interventions that could be used in developing new trachoma interventional strategies.

3.7 Inclusion and Exclusion Criteria

3.7.1 Inclusion criteria

- Heads of households for the KAP study
- Children between ages of 1-9 years for prevalence baseline

- Community key informants in the study area

3.7.2 Exclusion criteria

- Households with children above 9 years of age
- Those heads of households who were mentally unstable

3.7.3 Recruitment and training of research assistants

Research assistants were recruited and trained on how to conduct interviews and administered the questionnaires and observed ethical issues.

3.8 Data Collection

Structured interviews was used to conduct face-to-face interviews with eligible heads of the households as principal household respondents and direct observational method was used to measure personal and households practices. This participant observation and structured interviews methods were used for collecting quantitative data.

Focused interviews were administered through FGDs for selected heads of households to collect qualitative data.

Structured key informants interview (KII) was administered to community opinion leaders and health care workers and therefore, this technique was used to obtain qualitative data.

Standard questionnaire was printed in English and an interview was conducted in both English and local vernacular language. Prior to the research, the standard questionnaire was piloted in the field by the selected interviewers who were familiar with both English and local language to ensure its accuracy and validity (Armstrong et al., 1992). Interviewers were trained to administer questionnaire effectively. The collection tool was then piloted in Masol location of Pokot Central Sub County having the same

geographical similarities as well as the prevalence of trachoma to validate questionnaire and observation checklists.

3.8.1 Data collection procedure

Data was collected using structured questionnaire which were administered to the heads of households.

Qualitative method was used to determine the attitudes of the community on trachoma. This included FGDs which was used for selected heads of households. KII was also administered to the local community opinion leaders (chiefs) and health care workers (Nurses, Clinical Officers, Public Health Officers, CHEWs and CHVs) to confirm the information obtained from the community.

The questionnaire contained sections on prevalence, knowledge, attitudes and practices which were administered to the heads of households and local opinion leaders.

Observational checklist was used to collect data on practices of the community on trachoma such as availability of latrine, availability of water use, availability of hand washing facilities, and presence of flies on children eyes by use of WHO classification grading system.

All the selected health care workers and Community opinion leaders were invited for key informants' interview at the Kacheliba Sub County hospital. Consent was obtained and questionnaires were administered to obtain confirmed information about the prevalence, attitudes and practices of the community on trachoma. FGD was then administered to the heads of the households from picked sub locations.

Objective assessments of children with active trachoma were done in households with children aged 1-9 years using simplified WHO grading system.

Examination of the eyes of the children for active trachoma was done clinically using torch. The study respondents at the households were diagnosed for TI. The Clinicians working within and outside targeted health facilities were used to carry out interviews in households with 1-9 years children. Before carrying out interviews for the respondents, the clinicians were trained on the research tools by the hired ophthalmologist at the Kacheliba sub county hospital and Ophthalmologic nurse attached to the eye operational clinic in the same sub county health facility. Data collection procedure is illustrated as follows:-

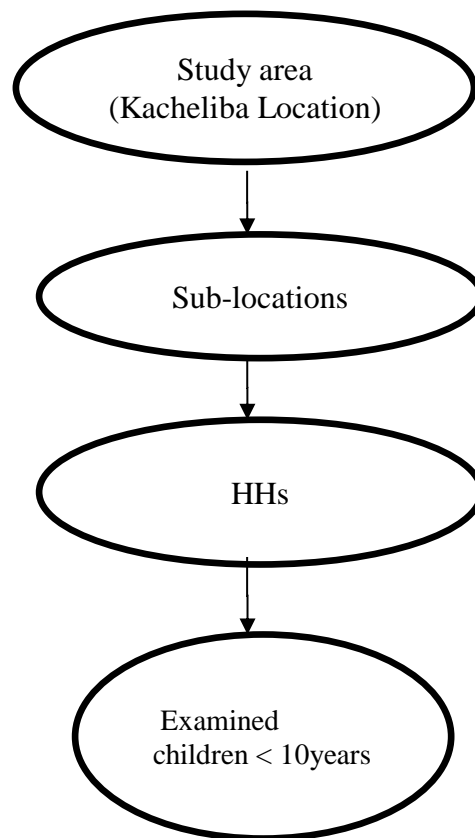


Figure 4: Diagram of the schematic data collection procedure

3.9 Data Management and Analysis

3.9.1 Descriptive statistics

Quantitative data were entered in Statistical Package for Social Scientist (SPSS) version 20, Continuous data was analysed using means and standard deviations

were used to find out the measures of association/relationship among the different variables. Descriptive data was presented in the form of frequency, tables and charts and chi square. Figures, tables and charts were used in data presentation.

3.9.2 Inferential statistics

For continuous data, mean was used while standardization of data was used to control confounders. For binary data, standard deviation was used for analysis.

3.9.3 Data Analysis Techniques

The data obtained was organized, coded appropriately and analyzed using Statistical Package for Social Scientists (SPSS) version 20. The results were presented in tables using descriptive statistics (frequency counts and cross tabulations). Inferential statistics were used to measure the association significance of knowledge and attitudes.

Recurrent common themes were grouped into codes, which were extracted and analyzed into concepts. Schematic analysis was used.

3.10 Data Management

The data cleaning was done to minimize errors from editing. Data storage was also done using flash disks and other devices to reduce erasing or loss of the data.

The minimization of bias was done by ensuring that information and selection process was clearly adhered to. This was achieved through adequate training of research assistants on the research collection tools.

3.11 Key Variables in the Study

Outcome variable of the study was Trachoma.

Independent variables were demographic data such as age, sex, levels of education, marital status and occupation of the study respondents. Knowledge was whether knew

or never knew about trachoma. Practices were personal hygiene, availability of water use, facial cleanliness, availability of hand washing facilities and average distances travel to fetch water from the main water sources for essential households use.

Dependent variables were Knowledge, Attitudes and Practices

Explanatory tool was FGD and KII

3.12 Limitations of the Study

The study had limited control on the weather patterns and insecurity situation during the time of the study.

Also there would be no long term follow ups of study participants may developed with long term morbidities, severe forms and eventually preventable blindness from the disease.

3.13 Ethical Considerations

The researcher keenly observed and maintained the fundamental research ethical issues. The major ethical issues considered during the research were approval from IREC, informed consent from the study participants, approval from Pokot North SCMOH and Deputy County Commissioner (DCC), anonymity and researcher responsibility was adhered to.

Participants who participated in the study were not coerced and no form of inducement as well. Informed consent from the study participants was sought before subjecting them to the interview process.

Privacy and Confidentiality of the study respondents were maintained by not recording the names or identity of the respondents.

Collected information following the study was given back to the community through community feedback meetings held with the local community stakeholders. A patent right of the author of materials used was protected by the researcher by making correct reference to materials used.

Community cases identified by the clinicians conducting the study were counseled and referred for eye care services in Kacheliba sub county hospital eye clinic.

CHAPTER FOUR

RESULTS

4.0 Introduction

A total of 325 respondents participated in the study, of which about half 164(50.6%) were males and 161(49.4%) were females, with ratio of 1:1. The response rate was 99.7%.

4.1 Demographic Characteristics of the Study Respondents

4.1.1 Distribution by age and sex

Table 3: Distribution of households heads by age and sex

Age (years)	Frequency			Percent %
	Male	Female	Total	
18-24	67	65	132	40.6
25-34	50	48	98	30.2
35-44	20	20	40	12.3
45 +	27	28	55	16.9
Total	164	161	325	100

132(40.6 %) of the respondents were aged between 18-24 years while the least, 40(12.3 %) were aged between 35-44 years. There were as much women 161(49.4 %) as households' heads as compared to households' heads who were men 164(50.6%).

4.1.2 Occupation of the heads of households

Few (3.7%) of the respondents were employed either in the government or private sector, 15.4% were self-employed, 20.5% had no occupation and more than half (60.4%) of them were livestock keepers.

4.1.3 Level of education

Majority 245(75.4%) of the respondents had not attended school, 54(16.6%) had attended primary education. 24(7.5%) and 2(0.5 %) of the respondents who had secondary and tertiary education respectively.

4.1.4 Distance from the nearest health facility

The distance travel between the households of the respondents to the nearest health facility is shown in the table 6 below;-

Table 4: Average distance travelled to access quality facility-based health care services

Distance category (Km)	Frequency	Percentage (%)
1-3 km	36	11.1
4-6 km	56	17.2
7-10 km	109	33.5
>10 km	124	38.2
Total	325	100.00

Less than half 124(38.2%) of the respondents travelled more than 10 kms to seek eye healthcare services. The least 36(11.1%) of the respondents travelled 1- 3Km to access quality eye care services. The WHO recommended average distance of 5 kilometers radius to the nearest health facility.

4.2 Prevalence of trachoma

Table 5: Distribution of examined children for trachoma by age and sex

Age Category (in years)	Frequency		Total	Percentage %
	Boys	Girls		
1	8	11	19	5.8%
2-3	34	39	73	22.5%
4-5	47	66	113	34.8%
6-7	28	42	70	21.5%
8-9	23	27	50	15.4%
Total	140 (43%)	185(57%)	325	100

More than half 185(57%) of girls as compared to 140(43%) of the boys was diagnosed with active trachoma.

Table 6: Prevalence of active trachoma by children 1-9 years

Characteristic	Frequency	Per cent %
Children with active trachoma	120	37
Children without trachoma	205	63
Total	325	100

More than half 205(63%) of examined children were without trachoma while 120(37%) of the children who participated had active trachoma (TF). This has shown that almost half of many numbers of children has high chances of contracting active trachoma in their lifetime.

Table 7: Distribution of examined children with active trachoma by age and sex

Age category in years	sex		Frequency	Percentage %	Chi square
	Male	Female			
1	5	7	12	3.7	
2-3	17	23	39	12	
4-5	14	17	31	9.6	8.582
6-7	11	13	24	7.4	
8-9	8	5	14	4.3	
Sub Total	55	65	120	37 %	

Age category 2-3 had a higher prevalence of TF compared to other age categories.

4.2.1 Sex and Active trachoma

Table 8: Distribution of children with active trachoma by sex

Sex	Frequency	Percent %
Female(Girls) children	65	20
Male(boys)children	55	17
Total	120	37 %

Girls had a higher prevalence of TF than boys $t=-3.86 < 2.57$ which was statistically significant (P value=0.00541)

4.3 Knowledge on Trachoma

4.3.1 Knowledge of respondents on trachoma

The knowledge of the respondents on the causes of trachoma is shown below;

Table 9: Causes of trachoma

Causes of trachoma	Frequency	Scores (%)
Poor facial cleanliness	100	30.8
Germs	91	28.2
Poor household sanitation	134	41
Total	325	100

Those respondents who had knowledge that trachoma was caused by poor household sanitation were scored 134(41%) than the rest with germs and poor facial cleanliness.

4.3.2 Transmission of trachoma

Table 10: Mode of spread of trachoma

mode of spread trachoma	Frequency	scores%
Through flies	153	47.2
Through fomites and clothing	132	40.5
By use of dirty traditional instruments	40	12.3
Total	325	100.0

Those respondents who had insufficient knowledge that trachoma was spread through flies scored almost half 153(47.2 %) than those with fomites and clothing and use of dirty traditional instruments.

4.3.3 Knowledge on Prevention of trachoma

Table 11: Knowledge on prevention of trachoma

Method of prevention	Number of respondents	Score %
Facial cleanliness	79	24.3
Safe disposal of faeces	87	26.8
Environmental improvements	150	46.2
community awareness and sensitization	9	2.8
Total	325	100

Less than half 150(46.2%) of the respondents were knowledgeable that trachoma could be prevented through environmental improvements while many were not knowledgeable on safe disposal of human faeces, facial cleanliness and community awareness combined.

4.3.4 Knowledge on the Treatment of trachoma

Table 12: Knowledge on methods of treatment of trachoma

Methods of treatment	Frequency of respondents	score%
By eye surgery	66	42
Through Administration of antibiotics	41	22
seeking traditional medicine	218	37
Total	325	100

Almost half 218 (37%) of the respondents knew little about eye surgery, while 41(22%) of the respondents did not know about mass administration of Antibiotics.

4.4 Community Attitudes on Trachoma

4.4.1 Poverty associated with trachoma by respondents

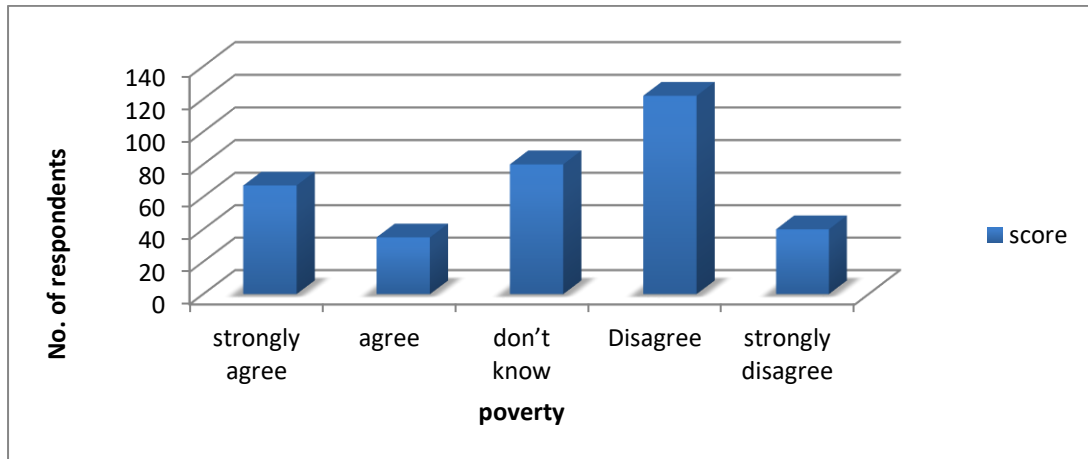


Figure 5: Poverty associated with trachoma

Less than half 119 (37.5%) of the respondents disagreed that poverty was associated with trachoma. while 80(24.6%) of the respondents did not know that poverty was associated with trachoma, 67(20.6%) of the respondents strongly agreed that poverty was associated with trachoma, 40(12.3%) of them strongly disagreed and the least 35(10.8%) agreed that poverty was associated with trachoma.

4.4.2 Witchcraft and Taboos of sharing toilets with in-laws

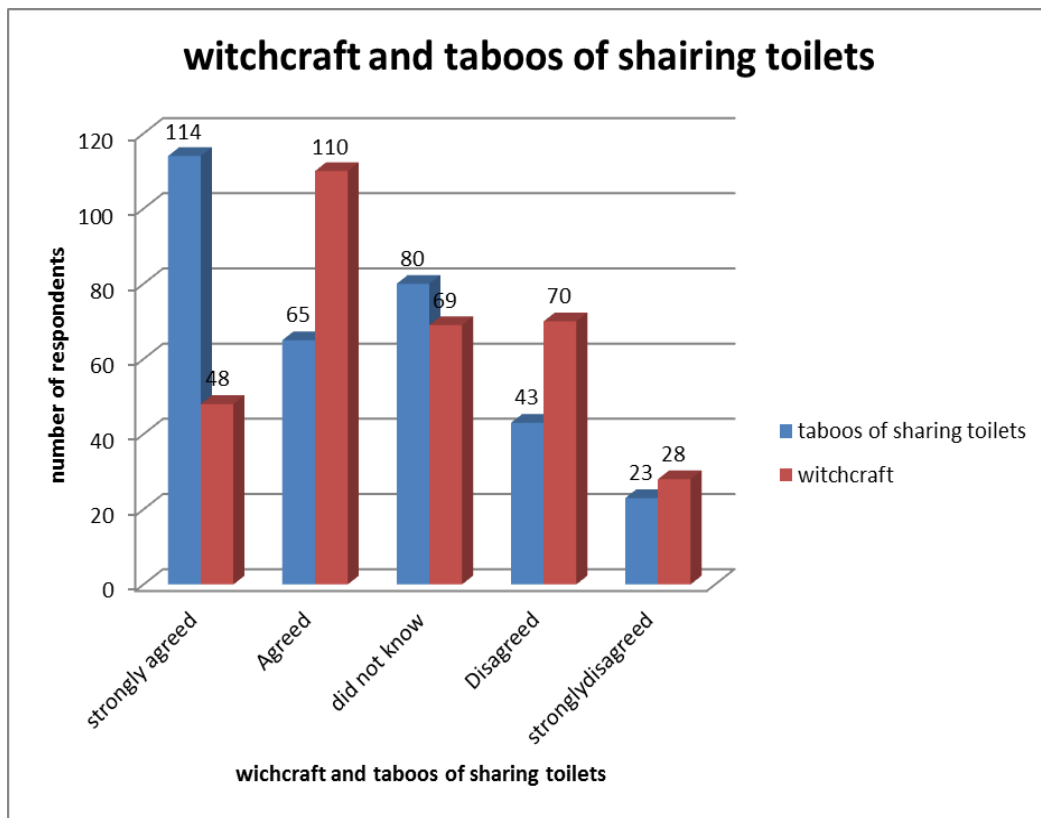


Figure 6: Witchcraft and Taboo of sharing toilets with in-laws

Less than half 108(33.2%) of the respondents strongly agreed that sharing of the toilets was taboos. 78 (27.7%) of them did not know whether sharing traditional toilets was a taboo. While 65(15.4%) of the respondents agreed, 43(12.3%) of them disagreed while the rest 23(11.4%) of them did strongly disagreed that sharing of toilets with in-laws was taboo. Less than half 110(33.8%) of the respondents agreed that trachoma was caused by witchcraft, 70(21.5%) of them disagreed that trachoma was not caused by witchcraft. While 69(21.2%) of the respondents did not know that trachoma was caused by witchcraft. 48(14.8%) of them

4.4.3 Traditional self-medication on trachoma

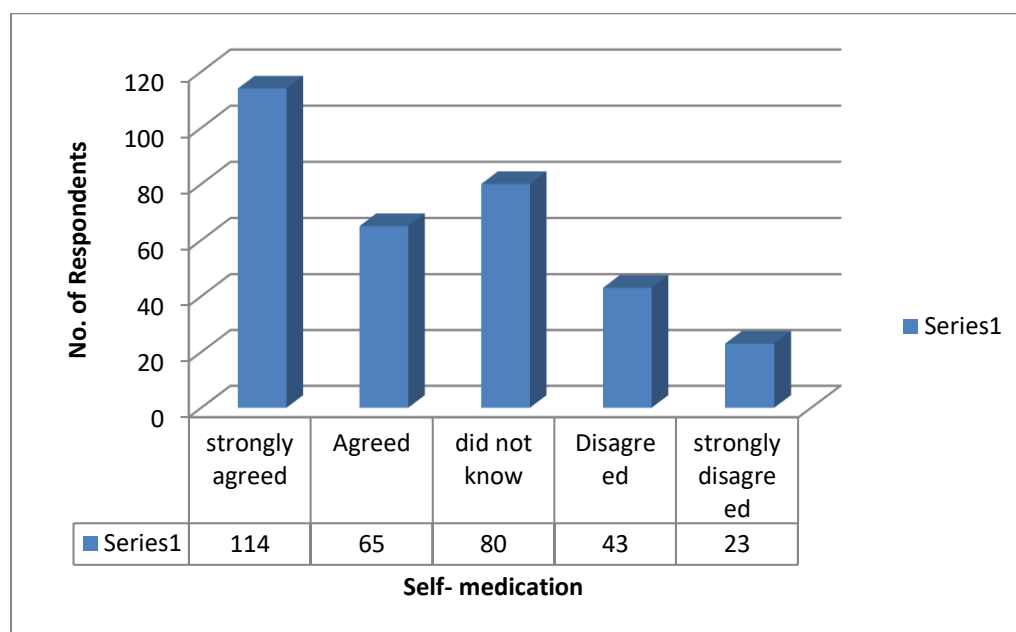


Figure 7: Harmful traditional eyes self-medication for trachoma

114(35.1%) of the respondents strongly agreed that traditional eyes self-medication treats trachoma, 80(24.6%) of them did not know. While 65(20%) agreed that self-medication cures trachoma, 43(13.2%) disagreed and the least 23(7.1%) strongly disagreed that harmful traditional eyes self-medication did not treats trachoma.

4.4.4 Flies on children faces

Table 13: Flies on children faces

Variable	Frequency	Mean score	Std deviation
Strongly agreed	53		
Agreed	89		
Did not know	56	2.3	0.05
Disagreed	49		
Strongly disagreed	78		

The mean score of those respondents believed that flies on children as a sign of wealth was 2.3, with a standard deviation of 0.05.

4.4.5 Overall sum scores of the responses

Table 14: Sum scores of the respondents' responses

Category	Frequency	Percent
0-14 (poor)	109	33.85
15-18 (Fair)	149	46.27
18(Good)	64	19.88
Total	322	100

Less than half 149(46.2%) of the sum scores fell in the category of fair attitude, 109(33.8%) was poor attitude, while the category above 18 with 64(19.9%) was classified as good attitudes

4.4.6 Focus group discussions (FGDs)

This section focused on interviewing the selected heads of households

Theme 1: Cultural beliefs

The FGD participants lamented that the government “*was not working for them and they were far away from them not having awareness on trachoma and this had not change our community cultural beliefs and has increased negative health seeking behavior*”. The two FGD groups expressed concerns that the majority of the community “*still continued to seek traditional cultural practices because they associated trachoma to witchcraft and other human influences*”.

Women exclaimed that “*most men, as heads of households, had sustained negative cultural behavioral practices towards disposing off human wastes and reluctance to make informed decisions for building household toilets for their families*”. The two FGD groups drew a concluded remark that “*the majority of the community still have poor attitudes towards seeking modern medicine but rather opted for traditional medicine before they went to the health facilities for modern treatment. However, they*

preferred seeking modern trachoma treatment and other health seeking behaviors interventions when their ill health conditions were turning extremely worse”.

The group participants expressed their major concerns on the disposal of human and animal wastes claiming that majority of their communities were extremely difficult, did not want discussion about human waste disposal and that it was not in their minds and they did not consider it a sanitation priority for healthy lives. Most of them said, *“Usually we did not like to build and share toilets with all family in-laws, it was a taboo and against our tradition of our forefathers”.* *“Even, in our culture, the married men were not allowed to share toilets with mothers-in-laws; also, even being seen going in and out of toilets by mothers-in-laws and children was serious taboo”.* They continued to say, *“Majority of their men, women and children prefers going to defecate in the bush while men pretend to look after animals or for women fetching firewood”.*

Further discussion on the toilet use, was seen as a great challenge to the community and one of the head of village strongly suggested that *“unless community were forced to dug toilet and sensitized them by moving from house to house strategy in order to remove their common negative practices and perceptions against constructing and use of toilets”.*

It was found out from the discussion that there were strong negative attitudes and beliefs among the community that cannot easily be wished away, which it may take over years to change gradually. The heads of households unanimously expressed their views that the best way to reduce and eliminate trachoma was to *“continuously carry out community education and awareness raising on the importance and benefits of controlling blinding trachoma through direct community engagements and meetings at*

water points where they regularly meet and fetched water for their animals and domestic uses”.

The participants from the two FGD groups believed also that the *“best approach to helping the infected and affected communities was to conduct regular mobile eye care outreaches to most prevalent areas and encouraged the sick to attend outreach screening clinics so as to received drugs and treatment promptly. Also to encourage CHVs to carry out routine active cases search and community referrals for the sick at home”*

Theme 2: Poor access to safe water

The participants appreciated that *“water scarcity might have contributed to the prevalence of active trachoma but they also thought that the high magnitudes of trachoma could be highly attributable to lacks of water for face washing.”*

The FGD groups commented that due to *“lack and shortage of essential water, which act as a source of life, the little water available was prioritized for cooking foods and drinking only rather than used for facial cleanliness”.*

Theme 3: lack of Community awareness raising and education on trachoma

The heads of households unanimously expressed their views that the community needs to be given *“continuously education and awareness on the dangers and signs and symptoms trachoma infection”.*

4.4.7 Key informants interview (KII)

Theme 1: poor access to health information systems

Assistant chief who participated in the KII said that *“our community walks long distance in seeking essential health care services whereby they stressed that the nearest*

health facility was more than 10 km away. This has created difficulties in accessing prompt eye care treatment services”.

The majority of the KII participants said that. *“Lack of vital health information among the community influenced negative practices and increased acceptance of traditional herbal medicine and all agreed that constant engagement of the community in the whole process could be of great importance in having informed choices on trachoma”.*

Another KII participant narrated how her relative first got sick, blinded and underwent surgery done on her right eye and he continued to say that, *“the eye first started itching seriously for long time, then she when to far hospital where she was diagnosed by the daktari and the doctor told her that she was infected with trachoma and that she would undergone eye surgery. Without further explanation the doctor told her that she would be coming for regular medical checkups every once a month in the eye clinic with clinic card”.* This was typical community scenario that is related to lack of informed information on trachoma, otherwise she could have saved her vital eyesight.”

Most of the informants agreed that *“the majority of our community members did not go to health facility immediately when they became infected with trachoma”.* During the informant session, the majority of the KII raised concerns that *“most of our local community lacked adequate health information about trachoma and always seeks first traditional medicine since it was most available”.*

The KIIs conclusively observed that *“In Pokot North Sub-County has had illiteracy level, which directly contributed to low health seeking behavior change among the community”.* This might have led to high trachoma prevalence in this community

Theme 2: Community cultural beliefs and perceptions on Trachoma

Some of the KII respondents agreed, *“Trachoma was a disease of the eyes which was associated with dirtiness and flies”*. This confirmed what the community through FGD groups said about trachoma, *“that it was disease of flies urinating on their eyes”*.

Most of the KII participants said that *“cultural beliefs dominance in the community was significant contributor associated with prevalence and incidences of trachoma disease”*. All of them agreed that *“lack of informed positive behaviors and cultural barriers were identified as bottlenecks to latrine use, facial cleanliness and going to hospital for treatment”*.

On their response to the availability of trachoma control strategies, they said that *“The community had strong beliefs that the varieties of traditional medicines cure many of diseases present including trachoma”*. Majority of the KII were not aware of the government interventions for the prevention and control of trachoma citing especially lack of awareness and inadequate health education of the community.

The KII participants were asked to suggest ways of improving trachoma interventions, majority of them suggested that *“there were greater need to initiate and organize community sensitization meetings; emphasized on sanitation and hygiene education; provide mobile eye outreach clinics; and provide community water supply services to increase households’ facial cleanliness”*.

4.5 Practices on Trachoma

4.5.1 Water and hygiene for trachoma control

Table 15: Main Water sources access by households for hygiene practices for trachoma control

Main water sources	Frequency	Percent %
River	213	65.5
water pan	26	8.0
Borehole	69	21.2
Tap	5	1.5
Well	12	3.7
Total	325	100

More than half 213(65.5%) of the respondents main source of water for domestic hygiene was rivers

4.5.2 Distance of water sources from households

Table 16: Distances travelled to get Water for households hygiene

Distance from water sources	Frequency	Percent %
Less than 1 km	14	4.3
Between 2-2.5 kms	82	25.2
More than 5 kms	229	70.5
Total	325	100

Majority 229(70.5%) of the respondents travelled longer distance of more than 5 kilometers to fetch water for their households hygiene use.

4.5.3 Quantity of water used by households in a day

Table 17: Litres of water used by households per day

Litres of water used by households in a day	Frequency	Percentage %
5 litres of water	9	2.8
5-10 litres of water	163	50.2
10-15 litres of water	104	32
Over 15 litres of water	49	15
Total	325	100

Half 163(50.2%) of the respondents households averagely used 5-10 litres of water on daily basis for hygiene and other domestic uses.

4.5.4 Time taken to fetch household water from main source of water

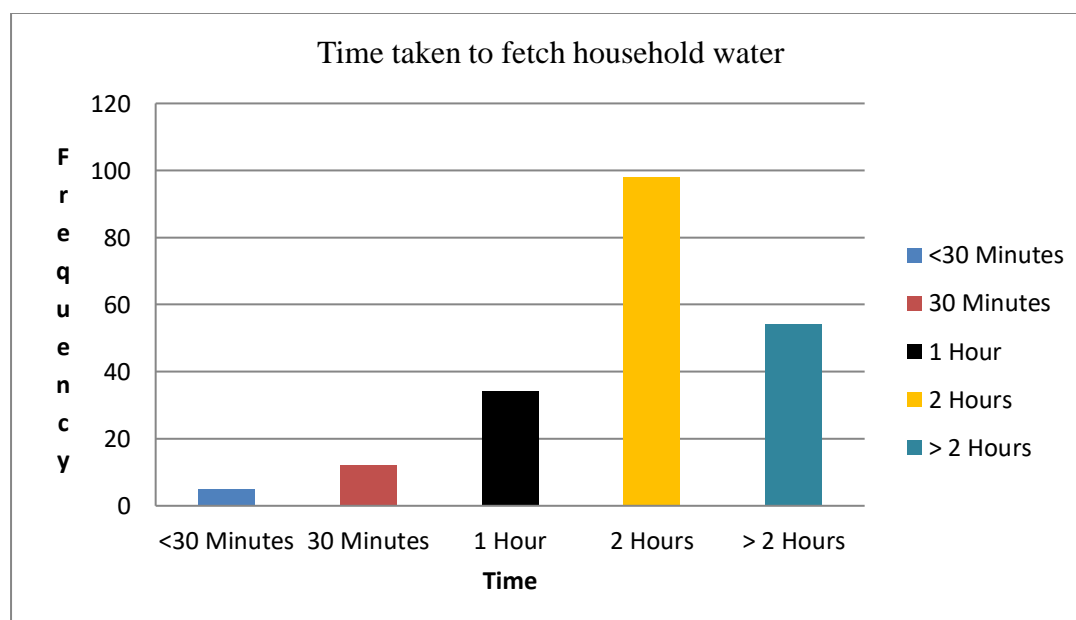


Figure 8: Time taken to fetch water for hygiene and domestic use

Majority (97%) of the respondents took time of 2 hours to fetch household water. Only 7 % said of them took less than 30 minutes to fetch essentials households' water.

4.5.5 Facial Cleanliness by Children

Table 18: Frequency of Washing Children Faces

Washing faces in a day	Frequency	Percentage %
Once	82	25.2
Twice	27	8.3
Thrice	3	0.9
None	213	65.5
Total	325	100

More than half 213(65.5%) of the children did not wash their faces at all in a day. Only 3 (0.9%) of them washed their faces thrice a day.

4.5.6 Garbage disposal at households' level

Table 19: Garbage disposal methods by households

Garbage disposal methods	Frequency	Percent %
Burning	40	12.3
Refuse pit	23	7.1
Composting for own garden	112	34.5
Crude dumping	53	16.3
Bush	97	29.8
Total	325	100

Less than half 112(34.5%) of the respondents disposed their households garbage by composting to their gardens. Only 23(7.1%) of them disposed of into refuse pits.

4.5.7 Distances of garbage disposal from the households

Table 20: Distances of households Garbage disposal

Distances of garbage site	No	Range	Minimum	Maximum	Mean	Standard deviation
Distances of garbage disposal from homesteads	324	196	4	200	36.19	23.09

Maximum distances of garbage disposal from homesteads were 200 meters and the minimum distances of garbage disposing sites were at 4 meters from households. The mean distances of garbage disposal sites from homesteads was at 36.19 meters

4.5.8 Availability of Household' Latrines

Table 21: Availability of Latrines by households

Latrines availability	Frequency	Percent %
Yes	47	14.5
No	278	85.5
Total	325	100

Majority 278(85.5 %) of the respondents had no latrines in their homesteads. This showed that majority (85.5%) of them defecate their faeces into open bushes or fields nearby households.

4.5.9 Observation of undisposed human faeces within households' compounds

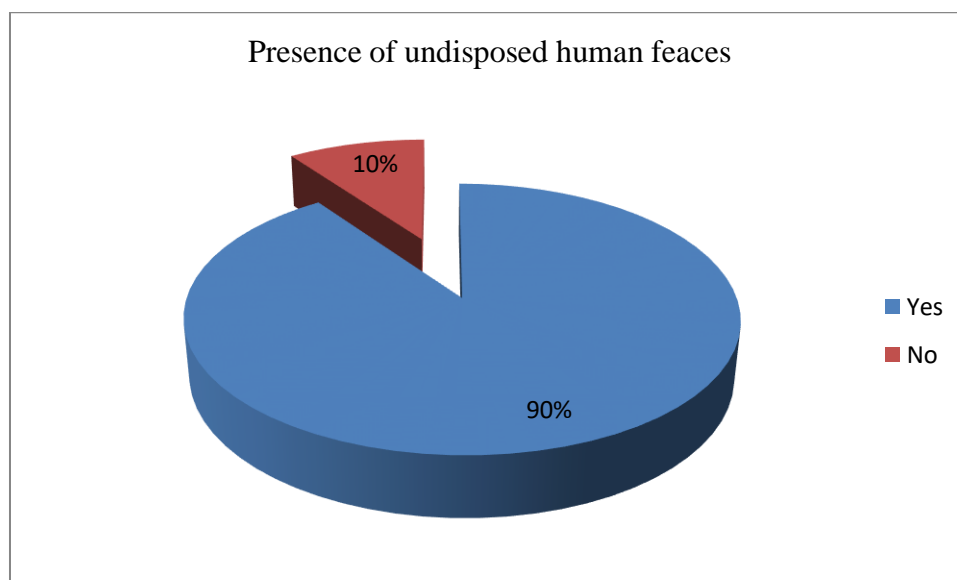


Figure 9: Presence of undisposed human faeces

Most 293(90.2%) of the respondents had observed presence of uncovered human faeces in their compounds.

4.5.10 Availability of Hand Washing Facility at households' level

Table 22: Availability of hand washing facilities by households

Presence of hand washing facility	Frequency	Percent %
Yes	32	9.8
No	293	90.2
Total	325	100

High proportion 293(90.2%) of the respondents had no hand washing facilities in their households.

4.5.11 Presence of flies in the eyes of children

Table 23: Presence of flies by children eyes

more than five flies in the eyes	Frequency	Percent %
Yes	195	60
No	130	40
Total	325	100

More than half 195(60%) of the examined children had more than five flies in their eyes.

4.5.12 Distance of domestic animals shed from households

Table 24: Distances by animals sheds

Distances of animals shed	Measure	Distance(M)
	Mean	39.30
	Median	40.00
Distances from animal shed	Std. Deviation	28.29
	Minimum	2
	Maximum	100

The average distance of animals cattle sheds from the households had mean average of 39.30 meters.

4.5.13 Enclosure of domestic animals

Table 25: Enclosure of domestic animals

Enclosure of animals	Frequency	Percent %
Yes	255	78.5
No	65	20.0
Not applicable	5	1.5
Total	325	100

Majority 255(78.5%) of the respondents had their animals enclosed in the cattle boma.

Only 5(1.5%) of them did not possess domestic animals in their homesteads.

4.5.14 Sharing sleeping houses with animals during the nights

Table 26: Sharing sleeping houses with animals at night

Sharing sleeping houses with domestic animals at night	Frequency	Percent %
Yes	153	47
No	164	50.5
Not applicable	8	2.5
Total	325	100

Almost half 153(47%) of the respondents shared their sleeping houses with their domestic animals.

CHAPTER FIVE

DISCUSSION

5.1 Prevalence of Trachoma

Majority (80.9%) of the respondents were unemployed and depended on livestock rearing as a main source of their livelihoods. Cattle dung, urine and milk were major attraction of flies and serves as habitats for breeding flies. This increases prevalence of trachoma at the households' level. This study concurred with the report by W.H.O, (2010) that indicated that families that rear cattle were more susceptible to trachoma infections.

According to this study, 71.7% of the respondents traveled more than 10 kms to reach the nearest health facilities to seek quality eye care services for themselves and their children. This study concurs with UNICEF (2018) report that poor access to quality community eye care services has a direct impact to prevalence of active trachoma among the communities living in trachoma endemic areas.

The study found that 37 % of children had active trachoma that was largely attributed to scarcity of safe water, poverty, absence of toilets, poor sanitation and facial hygiene in their households. This study agreed with MOH (2017) survey report which shown that in trachoma endemic areas children were infected at an early age below 9 years. With regards to distribution of examined children by sex for active trachoma, the study found that 56.4% of girls and 43.6% of boys had active trachoma .This implied that the girls were more susceptible than boys to get trachoma infection. The study resonates with Cromwell. E, Emerson P and Court right (2017) which shown that young children of ages between 1-9, has high prevalence of active trachoma and more pronounced in young girls than in young boys and therefore this could be attributed to the fact that girls spend a lot of more time helping their mothers with caring for younger children

and thereby increases their exposures risks to contracting trachoma. This study showed that majority of children that had poor facial hygienic behaviors had trachoma.

5.2 Knowledge of the Community on Trachoma

The study found out that (75.4%) of the respondents, representing the majority had not attended any school and only (16.6%) had attended primary education. This study concurred with Karimurio, J and Rono, H. (2016) that the prevalence of active trachoma in the households declined as the educational attainment of its heads of the households increased. This shown that households with heads who had limited knowledge had their families especially children at high risks of contracting trachoma illness compared to families with learned households heads. This study further agreed with UNICEF (2018) report that indicated that Trachoma was higher among households' heads with low level of formal education.

The results of this study showed that more than half (51.1%) of the respondents had no knowledge on the causes of trachoma. Only 46.2% of the study respondents had knowledge on the mode of spread of trachoma. This study is similar to Fred Hollows foundation (2015) KAP survey report conducted in East Pokot Sub-county of Baringo County which showed that communities in trachoma endemic areas had little knowledge on the causes and mode of spread of trachoma while almost half of them confused trachoma with other diseases like measles. Limited knowledge on the causes of the disease could be the reason behind the high prevalence of trachoma in Pokot north Sub County of west Pokot County. This study also concurs with Taylor, HR., Velasco, F., M., and Sommer, A. (2016) that majority of the respondents attributed trachoma disease to supernatural factors including and not limited to punishment by God and that it was inherited. Insufficient knowledge among most respondents contributed significantly to transmission of the trachoma disease.

Majority of the respondents did not have knowledge on how to prevent and treat trachoma. This might be due to the absence of community awareness raising, predominant cultural beliefs, poor health seeking behaviors and lack of government prioritizing eye care services that were geared towards prevention and control of trachoma in the affected communities.

KII conducted on community opinion leaders and health care providers in rural Pokot North communities observed that there were several major barriers which significantly contributed to the prevalence of active trachoma in the endemic communities of Kacheliba location. Some of these contributing barriers included poor community knowledge on trachoma, strong cultural beliefs, strong adherence to traditional medicine, Poor access to health care services and poor access to sustainable safe water, sanitation and hygiene facilities and poor facial cleanliness among vulnerable children aged 1-9 years.

On Community understanding of the causes and spread of trachoma, the study found that the majority of the rural people of Kacheliba location did not have adequate understandings and knowledge on the basic causes of trachoma in the community. This could be attributed to ignorance, lack of strong health information systems and inadequate key health education messages to the vulnerable communities. This study was similar with Taylor, HR., Velasco, F., M., and Sommer, A. (2016) which showed that there were insufficient understandings and limited knowledge among communities on the causes and spread of blinding trachoma. The community leaders agreed that *“there was still a big gap among the local communities on trachoma prevention and control approaches”*. This study also concurs with ministry of health, (2014) which showed that poor knowledge by the communities living in trachoma endemic areas influenced the spread of trachoma.

The community still valued their strong and deep rooted cultural beliefs that the presence of flies in their homesteads and in the eyes of children showed signs of wealth. The local opinion leaders agreed that “*the community required greater awareness raising and progressive community health promotion and education until the cultural beliefs and values fades away*”. This study concurred with Ministry of Health, (2017) that showed that the trachoma disease is commonly found in arid dry areas with poor quality of life and high anti trachoma practices which hinders elimination of trachoma.

On adherence to traditional cultural practices, negative community practices on trachoma were still more commonly manifested through poor face washing practices among young children, practices of open defecation, poor disposal of households’ garbage and animals’ wastes, and presence of animals’ enclosure in the homesteads which resulted into increased breeding of housefly population. This study concurs with Ajewole, J F., Faal, H., B, Johnson, G., and Hart, A. (2016) in a study conducted in the Gambia that concluded that for any intervention strategy to achieve the set goals of eliminating trachoma in spite of other constraints, community practices and participation and involvement is essential, and in order to achieve this, the healthcare providers needs to have a better understanding of the community cultural practices, negative attitudes and perceptions of the trachoma disease.

On poor health seeking behaviors of the community, adoption of positive health seeking behaviors by the communities living in trachoma endemic areas was still a major challenge. Poor health seeking behaviors of the community contributes exposures to trachoma. This study concurs to Fred Hollows foundation trachoma survey report (2015) conducted in East Pokot Sub County that stated that trachoma endemicity increases when communities have poor health seeking behaviors.

On poor access to water supply, sanitation and hygiene facilities, 70.5% of the respondents travelled long distances to fetch water from main water sources especially in seasonal rivers for domestic and hygiene use. Traditionally, in areas with poor access to water for life, women walks long distances of about 2-3 hours a day to fetch water for essential households such as washing young babies, cooking, cleaning family clothing, cleaning toilets and drinking. Levels of frequency of face washing among young children were determined by access to and quantities of safe clean water available at households. If there is scarcity of water available at households' level, then most families forgo face washing practices but use it purposefully for cooking and drinking. This study agreed with Negrel, (2015) that distribution of trachoma disease in the arid dry, dusty and hot environment in the sub Saharan Africa countries especially in semi-arid and arid regions of North Rift of Kenya led to general perception and beliefs that trachoma was linked with scarcity of essential water. Negative water use behaviors among affected communities' increases when there is increase in the scarcity of water. The community opinion leaders agreed that "*poor face washing among children and adults was attributed to difficulties to access to essentials water for personal facial hygiene*". Therefore this study concurs with West, S. M. and Stieren, J. A. (2016) that poor hygienic practices and behaviors among trachoma endemic communities were strongly linked to scarcity of essential water as a single contributing risk factor for the prevalence of trachoma.

Poor access to quality trachoma services was a major contributor to ill health behaviors among many communities living in trachoma endemic areas. This study found that 38.2% of respondents travelled more than 10 kms to seek essential integrated eye care services from the nearest health facilities. This study correlates with W.H.O, (2015) report which shows that WHO standards recommends that the nearest health facility be

of 5 km radius for better access and provision of quality health care services to the deserving endemic communities. This study also agrees with M.O.H, (2017) which showed that poor access to essential NTDs services was one of the major barrier to accessible, affordable and quality trachoma preventive and treatment services by many endemic communities of Kenya and other prevalent communities in Sub Saharan Africa countries as well.

5.3 Attitudes of the Community on Trachoma

Going to hospital for prompt eye care treatment services, the 4.1 mean scores of the responses from respondents showed that majority of the trachoma endemic communities have not embraced positive health seeking behaviors to prevent and eliminate trachoma. Poor health seeking habits of the community by not going to the hospital for appropriate eye care treatment influenced trachoma infections among vulnerable communities. This study concurred with MOH (2017) which found that trachoma is still endemic in 12 out of 47 counties of Kenya affecting over 6 million people due to poor health behaviors of the affected communities.

On taboos of sharing toilets with in-laws, this results showed that 108(33.2%) of the respondents strongly agreed that traditional taboos of sharing toilets still significantly plays a role in the spread of active trachoma in most arid communities. This study agrees with Kamurio and Rono .H (2016) that found out trachoma has been prevalent among the Maasai and other pastoral tribes of Eastern Africa communities for a number of generations and as a consequence of this the community attitudes such as taboos for women or children to observe men defecating or even entering into a shared toilet still a major contributor to trachoma continuity in many endemic communities of Kenya.

On witchcraft transmitting trachoma, this study findings showed that 110(33.8%) of the respondents agreed that trachoma was caused by witchcraft. Witchcraft believes by many affected communities living in trachoma endemic regions that it poses a major impediment to elimination of trachoma infections. Believes in witchcraft negates good prompt health seeking behaviors for treatable services among endemic communities thus resulting into increased avoidable blindness. This study concurs with Sil A.K. (2019) that argued that barriers to trachoma elimination such as ignorance, illiteracy and witchcraft beliefs could be contributing factors to avoidance of prompt health seeking behaviors in most trachoma prevalent communities.

On traditional eyes self-medication that believed to treats trachoma. This study find out that 114(35.1%) of the respondents strongly agreed that traditional eyes self-medication could treats trachoma. Harmful traditional eyes self-medication significantly contributes to poor preventable and treatable trachoma. This study agrees with Ayanniyi A.A. (2019) that noted that one-quarter of blindness were traceable to harmful traditional eyes self-medication. These harmful traditional eyes medication causes chemical burns in the eyes and introduces pathogenic organisms which could worsen eye conditions.

On flies on the children faces as a sign of wealth among most pastoral communities of Kenya, this study found out that the mean score of flies on children faces as a sign of wealth was 2.3, while 0.05 standard deviation among children having flies on their faces which was regarded as a wealth among nomadic communities of Kenya and other communities practicing pastoralism. This study agreed with Kamurio and Rono .H (2016) that argued that flies liked children faces. This was most common in most trachoma-endemic communities which regarded flies on human eyes as a sign of wealth creation.

Overall, the score of good attitudes among the respondents were 19.88 %. This showed that still most arid communities of Kenya have poor attitudes in regards to appropriate prevention and treatment approaches for trachoma. The average mean score of the attitudes of the community towards trachoma was 16.15, 95% Conf. interval and std. deviation of 3.15. The variance of the community attitudes was 9.95.

This study found that the majority of the communities sought traditional herbal medicine rather than modern medicine for the treatment of trachoma. Majority of the communities“ *who used traditional herbals often which develops ill health among affected individual persons whereby they seek convectional medicines when their eyes conditions have become worse and serious*”.

Majority of the participants have developed attitudes and beliefs that trachoma was as result of natural phenomena which occurs in the communities. This study relates to Taylor, HR., Velasco, F., M., and Sommer, A.(2016) that indicated that the perceptions of communities residing in trachoma endemic regions perceived trachoma as a ‘bad eye’ or ‘dirty’ disease caused by unknown natural event.

The study further sought out ways of changing community’s attitudes and beliefs in order to prevent or reduce significantly the dangers and burdens of trachoma prevalence. Majority of the respondents believed that intensive community sensitization and awareness creation through addressing prevailing community’s attitudes and perceptions that would result to stopping high risks of trachoma infections. This study results agreed with Haddad, Trimmel and Halmiton, (2015) that showed that in the absence of good services in health, poor community education combined with lack of community awareness raising and negative psychosocial effects on individuals

which propagates such cultural attitudes, beliefs, and perceptions of many communities would increase the incidences and prevalence of trachoma.

5.4 Practices Contributing to active Trachoma

This study found that 132(40.6 %) of the respondents were aged between 18-24 years. People of ages 18-24 years composed of youths and young mothers and men who have many young children to look after. This study also agreed with Beggs (2013) that showed that there was an association between age, poor practices and active trachoma as was well documented in other studies done in developing countries. Results from this study also concurred with Beggs and Johnstone, (2018) which showed that both age and poor practices were major contributing risk factors for trachoma infections.

The results from this study showed that 65.5% of the respondents' main water sources for personal facial hygiene practices were from mainly seasonal rivers. In addition, 70.5% of respondents traveled daily long distances of more than 5 kms to the main water source to fetch water for personal hygiene, cooking, drinking and washing clothing. The longer the distances to main water sources from households the lesser the practicing of facial hygiene behaviors among the community especially the vulnerable ones such as young children and women. In the event of scarcity of essential water in the households' level, single priority was given to water only for cooking and drinking with the absence of facial washing and hand hygiene practices.

Therefore beneficial facial hygiene behaviors and practices by the endemic communities increase considerably when their main source of essential water was closer to their homesteads. Majority (97%) of the participants took time of more than 2 hours distance travel from their households to fetch essential water for drinking, cooking and hygienic practices. Poor facial cleanliness practices among vulnerable

populations in the nomadic communities increases with long hours travel to fetch essential water for hygienic purposes. This study agreed with W.H.O, (2013-2015) which indicated that the distance travelled from the water sources to homesteads is a risk indicator for trachoma. This study is similar to Cain Cross and Feachem, (2018) that indicated that water scarcity has a negative outcome on trachoma reduction.

Results from this study showed that 50.2% of households used an average of 5-10 litres of water on daily basis for both hygiene and other domestic chores. These quantities of litres of water used per person per day was just below the WHO recommended amount of 15 litres of water per person per day. Further, the study showed that 54.2% of the majority of respondents, particularly women and girls took longer time of more than 2 hours distance travel to fetch water for essential domestic and hygiene purposes. This study agreed with Solomon A. W and Mobey D. C., (2015) that poor access to essential water makes it difficult to maintain regular personal washing and hygiene practices among many households' families living in water scarcity geographical regions.

The study also observed that 90.2% of households' compounds had presence of undisposed human faeces. This study concurred with Matende I., Kollman M., and Gaeckle M., (2017) that toilets were more uncommon in the most nomadic endemic communities. The undisposed human faeces attract house flies that breeds and feeds on dirty human faces especially the eyes causing trachoma infections.

The results of this study showed that only 34.5% of respondents disposed of their households' garbage through composting in their own gardens while 65.5 % had no proper garbage disposal mechanism. Also the maximum distances of garbage disposal were an average of 200 meters with mean of 36.9. This is contrary to the international standards which recommended that the appropriate distance of more than 200 meters

from homesteads was ideal for the minimization of flies which are vector transmitting trachoma. The distances of garbage disposal of less than 200 meters from homesteads contributes significantly to increased prevalence and incidences of trachoma infections. This study is in tandem with report by Forsey and Drougar (2016) that indicated that garbage and other decaying households' wastes attracts and provides good breeding grounds for flies which are vectors for trachoma disease.

Majority (85.5%) of the homesteads of the respondents had no pit latrines. Most of the households said that it was against their cultural beliefs and practices for the whole family to defecate on a common latrine. As a result of these cultural practices the respondents considered open defecation in the bushes and also along dry seasonal rivers. The human faeces attract flies which propagates trachoma to other non-infected persons. This study concurs with Matende I., Kollman M., and Gaeckle M, (2017) and Kamurio and Rono .H, (2016) that showed that exposure of human faeces attracts flies which become a risk factor for trachoma. The absence of homesteads latrines in the trachoma endemic communities has been contributed significantly by high illiteracy level, traditional cultural beliefs, poverty and common nomadic lifestyles.

On poverty associated with the prevalence of trachoma, the finding results showed that poverty was key factor in the occurrence and increased magnitudes of incidences of trachoma in hyper endemic communities. Poverty level increased with vulnerable communities living in arid dry, hot and dusty geographical environment conducive for active trachoma. This study agreed with Kurylo & Cross (2017) that showed that trachoma continues to be hyper endemic in many of the poorest and most remote poor arid rural communities of sub Saharan Africa and those communities in other endemic developing countries. Also, according to Sil A.K. (2019) found that critical barriers

such as poverty can play significant role in the spread of trachoma in communities with underlying socio-economic constraints.

The study found that the majority (90.2 %) of the households had no hand washing facilities within their homesteads. And this further explains the reasons why there was constant rising prevalence of trachoma illness among nomadic populations of Kacheliba location. This study concurs with Haddad, Trimmel and Hamilton, (2016) that indicated that lack of hand washing facilities favors the transmission of trachoma since human hands acts as main asymptomatic carriers for trachoma. This study also further agrees with Fred Hollows foundation (2015) that showed that there were huge gaps in the provision of hand washing facilities in the rural nomadic communities in semi-arid and arid regions of Kenya, West Pokot County included. Environmental improvements including hygiene promotion behavior change model was essential in such nomadic communities in order to sensitize and educate these vulnerable communities on the greater need of practicing personal hygienic behaviors effectively in order to stop the incidences and prevalence of active trachoma.

The results from this study further demonstrated that slightly more than half (54.8%) of children had more than five flies on their eyes. This was a clear indication that the prevalence of trachoma among young children was still common and most worrying. The results from this study showed that there were still big gaps in children' facial hygiene practices that needed greater attention of policy and decision makers. This study concurs with Emerson, P., M., Bailey, R., Walraven, GEL and Lindsay S. W., (2019) that flies feeds on the eyes and nasal discharges and were attracted by a dirty faces and therefore high fly density were known to be associated with high prevalence and more severe form of trachoma.

Majority (78.5%) of the respondents indicated that they lived in enclosure with their domestic animals such as sheep and goats. The situation was further worsened that more than half (68.6%) of the respondents shared housing with their small domestic animals such as calves, goats and sheep during the nights. This was evidenced with most of the households having animal dung and urines on the house floors that which attracts many flies for feeding and breeding. This study is in agreement with the work of Robbins, (2015) which showed that animals dung and urines attracts population of flies and hence increases chances of the transmission of trachoma infection to most vulnerable populations among nomadic endemic communities of sub-Saharan Africa. Therefore in the absence of trachoma targeted actionable approaches which focus on addressing burdens of trachoma may pose great dangers of persistent prevalence and causing more blindness to vulnerable communities of Kenya.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Conclusion

This study concluded that;

1. The prevalence of trachoma in Kacheliba location of Pokot North Sub County was still high. The prevalence factors that influenced active trachoma were; scarcity of essential water, arid dry, hot and dusty geographical environment, poor access to latrines and predominantly harmful traditional cultural practices and beliefs.
2. The level of education attainment and knowledge of the communities on the transmission and prevention of trachoma was relatively low. This was indicated by the high proportions of respondents who had insufficient knowledge on the transmission and prevention of endemic trachoma.
3. The proportions of the study participants who sought traditional medicine (herbal) as alternative option were still higher.
4. Most households of the respondents had generally poor access to improved safe water, sanitation and hygiene social behavior change practices. These unmet needs had negative impacts to face washing practices among vulnerable groups in the endemic communities of Pokot North.

6.1 Recommendations

1. Establish and conduct an integrated community eye care outreaches, active case findings and promote Mass Administration of Antibiotics (MDA) campaigns in the trachoma endemic communities by all actors including national, development partners and county primary health care systems.

2. Promote and implement SAFE strategies of Global Elimination of Trachoma (GET) through effective regular community engagement/meetings, educating the high risks populations on the greater need for effective facial hygiene behaviors change practices and improvement of basic safer water, sanitation and hygiene practices, including availability and regular use of soap and water, providing hand washing facilities and observe sanitary environment especially on safe latrines use at households level.
3. Conduct further research on community socio-cultural and perceptions on trachoma in the similar pastoral rural communities living in trachoma endemic regions. This will determine if the findings can be applied more broadly across the country of Kenya.

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APPENDICES

Appendix 1: Introductory Letter

David Kirop Kudoo,
P. O. Box 301-30600,
Kapenguria,

RE: REQUEST FOR PARTICIPATION IN THE STUDY

I am a post graduate student at the Moi University undertaking a Masters' degree in Public Health. I am undertaking research study on "*knowledge, attitudes and practices on trachoma among residents of Kacheliba location in Pokot north sub-county of west Pokot County.*"

I kindly request you to assist to participate in interviewed on Focused Group Discussion (FGD) or interviewing key informant interview (KII) for this study as well. The information you provide will be treated with utmost confidentiality and will only be used for the purpose of this particular study only. Please tick or fill in the required information on the spaces provided in the questionnaire.

Thank you for your sincere cooperation.

Yours faithfully,

David Kirop Kudoo

Appendix 2: Research Acceptance Letter County Government of West Pokot

Department of Health



COUNTY GOVERNMENT OF WEST POKOT DEPARTMENT OF HEALTH

Telephone: 0724414772
E-mail: scmohpokotnorth@gmail.com

When replying please quote.

OFFICE OF SUB COUNTY MEDICAL OFFICER OF HEALTH,
POKOT NORTH SUBCOUNTY,
P.O BOX 63-30600,
KAPENGURIA

15TH June, 2016

To
Kudoo david
School of public health,
Moi University

RE: ACCEPTANCE LETTER TO CONDUCT RESEARCH ON KNOWLEDGE, ATTITUDES AND PRACTICES ON TRACHOMA IN KACHELIBA LOCATION, POKOT NORTH SUB COUNTY OF WEST POKOT COUNTY

This is to inform you that the SCHMT of pokot North Sub County has unanimously agreed to allow you to carry out your research titled: assessment of knowledge, attitudes and practices on trachoma among the residences of kacheliba location, west Pokot County, within the parameter of institutional research ethics.

The SCHMT has proposed that provide feedback on your research findings to both sub county health management team and the community if possible.

We therefore wish you all the best as you conduct your research in the community.

Yours faithfully,

SUB-COUNTY MEDICAL OFFICER OF HEALTH
MINISTRY OF HEALTH
POKOT NORTH
P.O BOX 63-30600, KAPENGURIA
DATE

Dr. Solomon Kokwe
Sub County Medical Officer of Health

Pokot North Sub County

Ministry of Health

WEST POKOT COUNTY

Appendix 3: Institutional Research and Ethics Committee Approval Letter



MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471/1/2/3



MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

Reference: IREC/2015/186
Approval Number: 0001626

12th May, 2016

Mr. David Kirop Kudoo,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.



Dear Mr. Kudoo,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"Knowledge, Attitude and Practices Associated with Trachoma among Adults in Pokot North Sub-County, West Pokot County."

Your proposal has been granted a Formal Approval Number: **FAN: IREC 1626** on 12th May, 2016. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 11th May, 2017. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc CEO - MTRH Dean - SOP Dean - SOM
 Principal - CHS Dean - SON Dean - SOD

Appendix 4: Consent of Participation

Consent to participate in the study

Study No.....

PART 1: CONSENT

Study Title: Knowledge, Attitudes and Practices on Trachoma among residents in Kacheliba Location of Pokot North Sub-County, West Pokot County.

To you study Participants,

Foreword

Investigator: David Kudoo (Masters of Public Health Student), Moi University

Contact: Telephone Number: 0711516486 Email:kudoloritong@gmail.com

Purpose of study: The present study will determine the knowledge, attitudes and practices on trachoma. Your taking part in this study will help to determine which factors influences trachoma among the community in order to find out effective trachoma interventional approaches by addressing needs identified.

How to participate: this questionnaire will be administered approximately 20 minutes

Right to refusal or withdrawal: Taking part in this study is your choice; you may choose not to participate in it. Your participation is entirely voluntary and you are free to agree or disagree to participate in this study. You may withdraw from the study at any time even after signing this form. Your care will not change in any way if you choose not to take part in this study.

Confidentiality and the privacy of your records: We will keep your involvement in this study research confidential by identifying you in the study records by a code/unique number. Paper and computer records will be kept under lock, key and security code

respectively. Study results that will be used in final publication (thesis) will not use your name.

Risks and benefits: There are no risks or discomforts associated with this study and neither there are any direct benefits to you for taking part in.

For further clarifications or questions on this study please contact:

The chairman,

Institutional Research and Ethical Committee (IREC),

Moi University Teaching and Referral Hospital

P.O.BOX 3-30100, Eldoret,

Tel :(+ 254) 2033471/2/3

Appendix 5: Research Questionnaire

Dear respondent,

I am David Kudoo, pursuing a Master of Public Health (MPH) in School of Public Health at Moi University. I am conducting a research to determine the knowledge, attitudes and practices on Trachoma among residents of Kacheliba location in North Pokot Sub County of West Pokot County, Kenya. I have selected you as my study respondent. I request you to spare a few minutes to answer this questionnaire. Your responses will be kept confidential and privacy and will be used for academic purposes only. Your participation in facilitating this study is highly appreciated. Thank you

1. Sub county: _____
2. Division/Ward _____
3. Sub-location: _____
4. Village: _____
5. Household No _____ 6. Team number: _____
7. Date of visit: _____

Tick [] against each response indicated below. Fill one form per household/Manyatta/ or isolated household.

DEMOGRAPHIC INFORMATION

1. Age of the respondent []
2. Gender of the respondent Male [] Female []
3. Respondent Level of education
None [] primary education [] secondary education [] college [] university []
4. Socio economic status/occupation of the respondent
Employed [] self- employed [] livestock keeper/herder []
5. What is distance between your home and the nearest health facility?
1-3km [] 4-6km [] 7-10km [] >10km []

PART 1: Prevalence Assessment of Children 1-9 Years

No	Child No	Age(Yrs)	Sex(F,M)	TF present (Y =1, N=0)	TI present (Y=1,N=0)
1					
2					
3					
4					
5					

PART 2: Knowledge of the Respondent on Trachoma

6. What causes trachoma?

1. Unsafe drinking water []
2. Change of environment []
3. Poor sanitation []

7. How is trachoma spread?

1. Through flies []
2. Through touching of sick person []
3. By dirty water []

8. How is trachoma prevented?

1. By facial cleanliness []

2. Through use of personal clothing []

3. By environmental cleanliness []

4. Through safe drinking water []

9. How is trachoma treated?

1. By washing eyes []

2. Through administration of antibiotics []

3. By seeking traditional medicine []

PART 3: Community Attitudes on Trachoma

1. Poverty brings about trachoma in my community

Strongly agree(5)[] Agree(4) [] Don't know(3) [] Disagree(2) [] Strongly disagree(1) []

2. Sharing of toilets with mothers' in-laws and fathers in-laws is a taboo, therefore we should not share toilet

Strongly agree(5)[] Agree(4) [] Don't know(3) [] Disagree(2) [] Strongly disagree(1) []

3. Trachoma is caused by witchcrafts

Strongly agree(5)[] Agree(4) [] Don't know(3) [] Disagree(2) [] Strongly disagree(1) []

4. Self-medication using traditional medicine treats trachoma

Strongly agree(5)[] Agree(4) [] Don't know(3) [] Disagree(2) [] Strongly disagree(1) []

5. Flies on children faces is a sign of wealth in my community, therefore we should not chase away flies

Strongly agree(5)[] Agree(4) [] Don't know(3) [] Disagree(2) [] Strongly disagree(1) []

PART 4: Practices on Trachoma**(Ask head of household and observations)****A. Water and Hygiene**

10. What is the main source of water for domestic use during the dry season?

1=River [] 2= water pan [] 3=borehole [] 4=spring [] 5=tap [] 6=wells [] 7=water trucks [] 8= rain harvesting [] others specify.....

11. How far is the water source from your household? 1=Less than one km [] 2=2-5 km [] 3= more than 5 []

12. How many litres water do you use in household in a day? 1=5 litres [] 2=5-10 litres [] 3= 10-15litres [] 4=over 20 litres [] others specify

13. How many times do your children wash their faces in a day? Once [] Twice [] thrice [] None (do not wash) [] others specify

B. Garbage disposal

14. How do you dispose your domestic waste? 1=by burning [] 2=refuse pit [] 3=composting for own garden [] 4= disposal thrown to the compound (crude dumping) [] 5=bush []

15. How far is the garbage disposed of from household? (Estimate)_____ Meters

C. Latrine

16. Is there a latrine in the compound? (Ask and observe)? 1=Yes [] 2=No []

17. If No, why? (Tick maximum 1 reason) 1=Plenty of bushes around [] 2=Fear that children might fall into it [] 3=no money [], 4=we have never used one [] 5 Nomadic life style []

18. Is the latrine in use? (Ask and Observe) 1=Yes [] 2=No [], 9=Not applicable []

19. Is the latrine clean? (Observe)? 1=Yes [] 2=No [] 9=Not applicable []

20. Any hand washing facilities in the household's compound (Observe)? 1=Yes []

2=No []

21. Are there uncovered human faeces in the compound? (Observe) 1=Yes [] 2=No []

]

D. Flies

22. Is there a child with more than five flies on the face in the compound? (Observe)

1=Yes [] 2=No []

E. Animals

23. How far are animals kept from the door of the house? (Estimate): _____Meters

24. Are the animals enclosed? (Observe)

1=Yes [] 2=No (animals loiter all over the compound) [] 9=Not applicable (does not keep domestic animals []

25. Any animals kept in the house at night? (Ask) 1=Yes [] 2=No [] 9= Not applicable

[]

Appendix 6: FGDs for Selected Heads of Households

Moderator.....

Secretary.....

venue.....date.....

Group No..... No. of people.....

Dear participant

I would like to inform you that your participation will be tape recorded. However, the information obtained will be treated with absolute confidentiality and will be used only for the purpose of this study. No individual names will be mentioned.

Theme: Community Attitudes on Trachoma.

1. What are the commonly preferred methods of treating trachoma in your community?
2. What are the common attitudes of the community that contribute to prevalence of trachoma?
3. Give reasons why do the community attitudes on trachoma still common?
4. Are there ways of changing community attitudes in order to prevent or reduce the prevalence of trachoma?

Thank you for your participation

Appendix 7: Key Informant Interview (KII)

Good morning/afternoon, my name is David Kudoo (Master of public health student) who is conducting research on Knowledge, attitude and practices associated with active trachoma as part of my studies.

Based on your knowledge, expertise and interaction with the subjects of this research, I have selected you as an informant in this study and that is why I am sharing this questionnaire. Some of the questions may require you to divulge some information that may be confidential but I assure you that your answers will be used for the purposes of this research only and will not be shared with anyone else other than the researcher. Your honest response to these questions will help me better understand the knowledge, attitudes and practices of people towards trachoma and I would greatly appreciate your help. This interview will take about 20 minutes to complete this questionnaire.

Would you be willing to participate? Yes No

Questionnaire code..... Interviewer.....

Date of Interview.....

Interviewee Title.....

Please answer the questions below

1. What are the main reasons that contribute to the prevalence of trachoma in the community?
2. Suggest ways of changing community approaches in regards to ending trachoma?

Thank you for your participation

Appendix 6: For the Study Participant

Your signature indicates that this research study has been explained to you, that you've been given the opportunity to ask questions, and that you agree to take part in this study.

Agree []Disagree []

If you agree to participate in this study, append your signature below

Signature of Subject/Participant

Thumbprint.....

Date.....

Appendix 6: Operational Variables

Objective	Variable	Indicators	Data collection tool	Measurement	Data analysis
To determine knowledge of the community in relation to trachoma prevalence	Knowledge	Percentage of those who have acquired tertiary education	Questionnaire	Ordinal	Descriptive statistics
		-Understanding on the cause of trachoma	Focused discussions	Nominal	Inferential statistics
		-Understanding on the treatment of trachoma	Interviewing informants	key	
To determine practices of the community in relation to trachoma prevalence	Practices	-Number of times children faces are washed in a day	Questionnaire	Ordinal	Descriptive statistics
		-Availability of the pit latrine	Focused discussions	Nominal	Inferential statistics
		-Availability of the hand washing facility	Interviewing informants	key	
			Observation	Scalar	
To determine attitude of the community in relation to trachoma prevalence	Attitudes	The extent to which the pit latrine are clean	Questionnaire	Ordinal	Descriptive statistics
			Focused discussions	Nominal	Inferential statistics
	Interviewing informants	key			