KNOWLEDGE, ATTITUDES AND PRACTICES OF SOMALIA NATIONALS WHO HAVE MIGRATED TO NAIROBI WITH RESPECT TO TUBERCULOSIS TRANSMISSION, PREVENTION AND CONTROL.

BY

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DECLARATION

I hereby declare that this dissertation is my original work and has not been presented to any other university for award of a degree.

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DEDICATION

I would like to dedicate this dissertation to my late father Robert Nephat Marubu, who was a Chemist by profession and a holder of a Masters Degree whom I have always strived to emulate. He was a source of inspiration and motivation to me and worked on sharpening me academically right from my formative years, and I am sure that he would be very proud of my achievement. This one is for you Dad.

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LIST OF ABBREVIATIONS:

- **ACSM-** **Advocacy, Communication and Social mobilization**
- **CDC-** **Centers for Disease Control & Prevention**
- **CNR-** **Case Notification Rate**
- **DLTLD-** **Division of Leprosy, Tuberculosis and Lung Disease**
- **DOTs** **Directly Observed Treatment– Short Course.**
- **DTLC-** **District TB and Leprosy Coordinator**
- **FBO** **Faith based Organization**
- **GOK-** **Government of Kenya**
- **IEC** **Information, Education and Communication**
- **IOM-** **International Organization for Migration**
- **KAP-** **Knowledge, Attitudes and Practices**
- **M.tuberculosis** **Mycobacterium tuberculosis**
- **MHAC-** **Migration Health Assessment Centre**
- **MHD-** **Migration Health Division**
- **MOPHS** **Ministry of Public Health and Sanitation**
- **NLTP-** **National Leprosy & Tuberculosis control Program**

- **PTLC- Provincial TB and Leprosy Coordinator**
- **TB- Tuberculosis**
- **UN- United Nations**
- **UNHCR United Nations High Commissioner for Refugees**
- **WHO- World Health Organization**

DEFINITION OF TERMS:

Asylum Seeker-One whose official refugee status is yet to be granted pending verification for recognition of protection needs and processing of documentation to confirm full refugee status

Attitude- a complex mental state involving beliefs and feelings and values and dispositions to act in certain ways.

Awareness- is the state or ability to perceive, to feel, or to be conscious of events, objects or sensory patterns**.**

Health seeking behavior- personal actions to promote optimal wellness, recovery, and rehabilitation.

Knowledge- the fact or condition of knowing something with familiarity gained through experience or association, acquaintance with or understanding of a science

MDR TB-Multidrug resistant Tuberculosis i.e. tuberculosis resistant to the two first line anti-TB drugs, Rifampicin and Isoniazid

Migrant- a person who moves from one region, place, or country to another by chance, instinct, or plan.

Migration

- Is physical movement by humans from one area to another, sometimes over long distances or in large groups. The movement of populations in modern times has continued under the form of both voluntary migration within one's region, country, or beyond, and involuntary migration. (Population reference bureau 1996)

- Can also be defined as the long-term relocation of an individual, household or group to a new location outside the community of origin(Population reference bureau 1996)

Migration typologies- different types or categories of migrants

Practices- what is done or performed often, customarily, or habitually

PTB- Pulmonary tuberculosis is tuberculosis disease affecting the lungs

Refugee

The 1951 United Nations (UN) convention on the status of refugees to which most western countries are signatories considers a refugee as "any person who is outside any country of such persons nationality and who is unwilling or unable to return because of persecution or a well-founded fear of persecution on account of race, religion, nationality, membership in a particular social group or political opinion" (UN High Commissioner for refugees (UNHCR 2003). This is just one typology of migrants

Somalia Nationals- persons born in Somalia

Urban Area- the United Nations classifies settlements of over 20,000 inhabitants as urban(UN 1995)

Urban Migrant- a person who moves from one region, place, or country to an urban area by chance, instinct, or plan.

ABSTRACT:

Introduction: The population of Somalia nationals who have migrated to Nairobi contributes significantly to the high prevalence of TB in Nairobi. This group may often have been left out of various studies done because of their 'invisible' nature in terms of access to health services. This justified carrying out a study on their knowledge, attitudes, practices and health seeking behavior with respect to tuberculosis transmission, prevention and control, and from the findings come up with recommendations on what advocacy, communication, educational, prevention and control strategies need to be put in place.

Objectives: The main objective of the study was to assess their KAP on TB transmission, Prevention and Control. The study also aimed at determining the methods of communication that were the best suited sources of information on TB, for the Somalia nationals who had migrated to Nairobi.

Methods: It was a clinic based cross-sectional KAP study carried out in IOM's two clinics in Nairobi. The main data collected for the study was quantitative in the form of a semi structured questionnaire which was also translated into the Somali language, and completed by the Somali speaking research assistants while interviewing the study participants. Qualitative data was also collected in the form of Focus group discussions to complement the quantitative data.

Results: The majority of the respondents (68.1%) had average knowledge while 27.8% had good knowledge and 4.1% poor knowledge. The awareness of the majority (57.3%) was average with 42.7% having poor awareness and none having good awareness.93.1% had good attitude while 6.9% had poor attitude. The majority (87.5%) had good practices or health seeking behavior

while for 12.5% it was poor. There was a statistically significant relationship between the migration status of the Somalia nationals and their Knowledge (p=0.000), attitudes (p=0.009) and health seeking behavior and practices (p=0.000).There was also a statistically significant relationship between knowledge and household size(p=0.006) Their most preferred source of information on TB was through health care workers(85%), followed by family, friends and neighbors (34.7%) ,community or religious leaders(34%) and electronic media(33%).However, there was no statistically significant relationship between level of knowledge and the most preferred source of information, which is health workers(p=0.933),but there was a statistically significant relationship between level of knowledge and choice of family or relatives, friends and neighbors as preferred source of information on TB(p=0.000) ,community or religious leaders (p=0.007) and Electronic media-Radio, TV(p=0.000).There was also no statistically significant relationship between the choice of health workers as a source of information and any of the socio-demographics. There was a statistically significant relationship between practices and level of knowledge (p=0.009) and Overall attitudes (p=0.006).

Conclusion & Recommendations: Migration status is a key factor in determining the KAP on TB of the Somalia nationals who have migrated to Nairobi. Information on TB would best be disseminated through community or religious leaders, family friends, neighbors or the community in general, and electronic media. Their practices and health seeking behavior are determined by their knowledge and attitudes. Some misconceptions or negative attitudes do exist among this group with regard to various aspects of TB. In addition to this, the minority of study participants who had poor Knowledge, Awareness, Attitudes and Health Seeking behavior also need to be targeted for an effective and successful TB prevention and control program to be realized.

Based on the findings, registration of migrants should be speeded up, so that all Somalia nationals who have migrated to Nairobi are at par, in as far as access to TB services is concerned. The TB educational sessions should be held at the community level or in the mosques facilitated by religious or community leaders. Educations programs on TB should also be aired on IQRA FM, the Somali language radio station. This will help sensitize the Somalia nationals on TB, deal with the negative attitudes that they have on TB and improve their practices and health seeking behavior.

CHAPTER ONE: INTRODUCTION & BACKGROUND

1.1 INTRODUCTION

The World Health Organization (WHO) declared TB a global health emergency in 1993 following dramatic changes in the magnitude of the problem. However, the number of new cases continues to increase and without a coordinated control effort, it is estimated that TB will infect an estimated one billion more people by 2020 with an overall mortality of 36 million. This resurgence is due to several interrelated factors, including the HIV epidemic, ineffective control-programs, population growth, and the increasing geographical movement of people either already with the disease, or those at risk of contracting and developing TB. The growing international migration is thought to be one of the greatest factors contributing to the rise in cases and changes observed in the epidemiology of TB, which remains a leading cause of morbidity and mortality in developing countries. (Davies et al., 2000)

Migration can be defined as "a process of moving, either across an international border, or within a State" It is a population movement, encompassing any kind of movement of people, whatever its length, composition, and causes" (IOM, 2010). This comprises a host of overlapping categories of people, including labour migrants and their families, irregular migrants, internally displaced populations, asylum-seekers and refugees, immigrants, trafficked persons, and mobile populations such as sex workers. The current study was on Somalia nationals who have moved across the borders due to conflict in Somalia and migrated to Nairobi where they live. This group may be at high risk of developing tuberculosis due to a host of factors which include lack of specific health services targeting migrants, and the migrants' lack of proper documentation to be

in the country and therefore fear of arrest. For there to be proper prevention and control of Tuberculosis there needs to be proper diagnosis and treatment of TB among the migrants.

A Knowledge, Attitudes and Practices (KAP) survey is a representative study of a specific population to collect information on what is known, believed and done in relation to a particular topic-in this case TB (WHO, 2008). The Knowledge, Attitudes and Practices (KAP) of the Somalia nationals who have migrated to Nairobi, regarding tuberculosis was seen to hold the key to how these aspects of TB could be effectively managed. However, it was unclear to what extent the KAP affects diagnosis, treatment, prevention and Control of TB among this group. This was hoped to be conclusively answered by the findings of the study.

1.2 BACKGROUND TO THE STUDY

Tuberculosis or **TB** is a common and often deadly infectious disease caused by various strains of Mycobacteria, usually Mycobacterium tuberculosis in humans. Tuberculosis usually attacks the lungs but can also affect other parts of the body. It is spread when the bacteria get into the air, and when people who have the disease cough, sneeze, or spit. A person can become infected with tuberculosis bacteria when he or she inhales minute particles of infected sputum from the air. People who are close to the infected person, are more likely to be infected when they breathe the bacteria into their lungs. Most infections in humans result in an asymptomatic, latent infection, and about one in ten latent infections eventually progresses to active disease, which, if left untreated, kills more than 50% of its victims. (Mims, 1993**)**

Persons with latent TB infection do not feel sick and do not have any symptoms, but usually have a positive reaction to the tuberculin skin test. They are infected with Mycobacterium tuberculosis, but do not have active TB disease. Those with latent TB infection are not infectious and cannot spread TB infection to others. However, persons with latent TB infection may develop active TB disease at some time in the future. About 10% of infected persons will develop active TB disease at some time in their lives, but the risk is considerably higher in the first two years of infection particularly for persons whose immune systems have been weakened by HIV infection. Persons with latent TB infection should be treated in good time, in order to prevent the infection from progressing to active disease. Those with active TB disease are considered infectious and can spread TB bacteria to others. The classic symptoms are a chronic cough with blood-tinged sputum, fever, night sweats, and weight loss. Infection of other organs causes a wide range of symptoms. Tuberculosis is diagnosed definitively by identifying the

causative organism (Mycobacterium tuberculosis) for example in sputum or pus. When this is not possible, a probable - although sometimes inconclusive diagnosis may be made using imaging such as X-rays or scans and/or a tuberculin skin test (Mantoux test).Treatment is difficult and requires long courses of multiple antibiotics. Contacts are also screened and treated if necessary. Antibiotic resistance is a growing problem in (extensively) multi-drug-resistant tuberculosis. Prevention relies on screening programs and vaccination, usually with Bacillus Calmette-Guérin vaccine

With the discovery of chemotherapy in the 1940s and adoption of the standardized short course in the 1980s, it was believed that TB would decline globally. Although a declining trend was observed in most developed countries, this was not evident in many developing countries (Chadha, 2009). In developing countries; about 7% of all deaths are attributed to TB which is the most common cause of death from a single source of infection among adults. (Kaye et al., 1996). It was estimated that there were 9.27 million incident cases of TB, 13.7 million prevalent cases globally, 1.32 million deaths from TB in HIV-negative and 0.45 million deaths in HIV-positive persons (WHO Report, 2009). Asia and Africa combined constitute 86% of all TB cases globally(WHO Report, 2009).Kenya is among the world's 22 countries with a high tuberculosis burden. TB is a disease of poverty with major emphasis being on prevention and control efforts in the slums and remote rural areas. The number of reported TB cases has increased tenfold from 11,625 in 1990 to 110,251 cases in 2008 (NLTP report, 2008). The average annual increase is 10% for all forms of TB. However, in the last 5 years the annual increase of notified TB cases has slowed down to an average of 4%. Case Notification Rates (CNR) increased from 53/100,000 population for all forms of TB and 32/100,000 population for sputum smear-positive

PTB cases in 1990 to 329/100,000 population and 98/100,000 population respectively in 2008. Between the year 2000 and 2008, a total of 49478 individuals were screened for TB at the IOM Eastleigh Community Wellness Centre , out of which 79 were smear positive, 23 were relapses, 320 were smear negative and 21 extra-pulmonary cases.(IOM, 2009).A total of 80 TB patients at the clinic were cured, 306 completed treatment, 1 died, 3 failed treatment, 2 were transferred, and 2 defaulted.

In Nairobi at Eastleigh Health Centre(GOK), 101 TB cases were reported during the period Jan-Mar 2011 of whom 61 (60%) were non-Kenyans (Ogaro, 2011) . In another facility at Eastleigh (FBO), 127 TB cases were reported during the period January-March 2011 of whom 40 (31%) were non-Kenyans. In North Eastern province, 442/2504 (18%) and 482/2280 (21%) of all TB cases in 2009 and 2010 respectively were refugees (Non-Kenyans). Tuberculosis and MDR TB is one of the major health risks for new Somali immigrants or refugees (Hawn et al., 2003; Kemp, 2002). In 2006 the TB program in Somalia determined that the incidence rate of tuberculosis was 162/100 000 population per year for sputum smear-positive cases and 324/100 000 population per year for all forms of TB (WHO report, 2007) .This was above the Case notification rates for sputum smear positive cases in Kenya, but slightly less for all forms of TB.

The International Organization for Migration (IOM) as an inter-governmental Migration agency established in 1951, and with over 120 member states, is committed to the principle that humane and orderly migration benefits both migrants and the society. Kenya became a member state in 1985.It has its mission with regional functions (Regional Office) for East and Central Africa in Nairobi. In the Organization, the Migration Health Department is charged with the responsibility

of doing the Health Assessments and screening for immigrants/refugees who have secured resettlement destinations, at its Migration Health Assessment Centre on 4th Ngong Avenue in Nairobi. It also runs the Eastleigh based Community Wellness Centre which serves both the urban migrants and the local/host community, as part of its urban migrant health program.

CHAPTER TWO: LITERATURE REVIEW

2.1 Knowledge

Various surveys have been conducted to understand the knowledge of migrants and other communities on tuberculosis transmission, prevention and control.

A study carried out in Pakistan by Mushtaq et al., (2009) revealed that there was low level of knowledge about TB among people, especially those living in the rural areas. It reflected the ineffective communication strategy of Pakistan's National Tuberculosis Program to reach all the people despite the fact that two-third of Pakistan's population resides in the rural area.

A study done by Bhatta et al., (2009) in Nepal showed that the overall knowledge about TB was low in communities and people also had misconceptions about the disease

A study done by Wang et al., (2008) in rural china to determine the gender difference in TB knowledge concluded that knowledge and awareness of TB are still unsatisfactory in rural Chinese population. Compared with men, women had less knowledge on the current TB service policy and were reluctant to actively acquire information about TB. Though they were likely to seek health-care after the onset of prolonged cough, women usually visited village clinics or drugstores whilst men preferred to seek health-care in upper level hospitals. The study concluded that gender issues should be considered in promoting patients' health-care seeking behavior and to shorten the delay of diagnosis.

A study by Nkulu et al., (2010) on immigrant students indicated that despite exposure to the Swedish healthcare system during a routine screening process, basic knowledge related to TB in general was poor, with several misconceptions and negative attitudes.

These findings are similar to that of previous qualitative and quantitative studies conducted among high-risk populations, including migrant groups in different settings. The most common

misconceptions about TB among respondents in this study concerned transmission, contagiousness, differentiation of TB infection and disease, and prevention.

However, this study failed to look at how the highest level of education attained affects level of knowledge and awareness. This is because all the study participants were in either college or university and therefore had attained the same level of education. It also looked at immigrant students of different nationalities and therefore failed to centre on one particular nationality or group. All respondents were of the same age group and therefore no relationship between overall knowledge and age could be determined.

A community participatory study was conducted by Gerrish et al., (2010) on the socio-cultural factors influencing an understanding of TB within the Somali community in Sheffield England. It sought to gain insight into the socio-cultural influences on how TB is perceived within the Somali community and how these perspectives affect the prevention, diagnosis and treatment of the disease. The study also gained an understanding of healthcare practitioners' perceptions of TB among the Somali community and their experiences of providing TB services to Somalis. The findings of this study identified a general awareness of TB among the Somali community in terms of the signs and symptoms of pulmonary TB, its treatment and prognosis. There was less understanding of non-pulmonary TB among Somali participants and some healthcare practitioners. Many Somalis lacked detailed understanding of how the disease was spread. Established community beliefs, for example that TB was a hereditary disease, or that it could be acquired by sharing eating utensils proved difficult for healthcare practitioners to challenge.

The main recommendations arising from this study addressed the importance of increasing an understanding of TB within the Somali community and among healthcare practitioners working in primary care. In addition, healthcare services needed to be responsive to cultural needs of

Somali people and healthcare practitioners equipped with the knowledge and skills to provide culturally appropriate care. There was also found to be a need for the health authorities to address the wider public health agenda of social disadvantage in order to overcome health inequalities experienced by many Somalis. Several avenues through which culturally appropriate strategies targeted at minimizing the spread of the disease, ensuring timely diagnosis and effective management of TB were also identified.

A London-based study carried out by Shetty et al., (2004) among Somali TB patients, contacts, and lay community members found that knowledge of symptoms was high. It concluded that uncertainties in core TB knowledge needed to be addressed with direct educational input, especially in women and recent entrants into the country. Volunteers from the established Somali community could play a valuable part as links in the community to fight TB.

Though these studies were carried out on Somalis, unlike the current study they failed to identify the best methods of disseminating information on TB to this community. (Gerrish et al., 2010; Shetty et al., 2004) .They also failed to critically assess the level of knowledge and awareness of study participants with respect to tuberculosis transmission, prevention and Control. These studies did not look at the relationships between overall knowledge and socio-demographics like highest level of Education attained. They also failed to look at Migration status and its relationship with knowledge, because they were carried out in a setting where all the study participants had official refugee registration or resident documents.

Therefore ,this study sought to address all these areas which these previous studies on Somalis failed to research on.

A KAP survey regarding TB conducted in Northern Bihar India revealed that most people (93.2%) had heard of TB, yet (86%) did not know the true cause of TB, while 52% have a significant knowledge of predisposing factors. Only 21% of people knew how TB is spread. Knowledge of preventative measures was very low. Only 25% of people demonstrated a sufficient overall knowledge of TB. (Devey J, 2001).This study employed an essentially quantitative tool for data collection in the form of a pre-coded structured questionnaire. It didn't use any qualitative tool like FGDs or key informant interviews which could have helped gather qualitative data which when analyzed would complement or be compared with the quantitative data.

A KAP cross sectional community based survey on enhanced response to TB ACSM in Iraq aimed to document knowledge and to have the baseline to understand and measure the attitudes, and practices surrounding a diagnosis of tuberculosis **(**Kadum et al., 2008) .The sampled population was predominantly lacking proper knowledge about tuberculosis in general. The response about nature and mode of transmission among respondents was not based on reality and scientific knowledge as a significant number of the respondents did not correctly identify the fact that it is an infectious disease; its mode of transmission, seriousness, cost of treatment and how to prevent infection. The results show that knowledge is not the only determinant of health-seeking behavior.

A study done in Mpwapwa district Central Tanzania, on the KAP with regards to TB and its treatment determined that the knowledge of the community on causation was poor.

A KAP survey conducted in Romania by raised several important issues related to patient understanding about TB, systemic barriers to complete care, and the role of providers in improving or reducing adherence (Berger et al., 2004) .While TB patients who were respondents

reported that they received ongoing education during their hospitalization period, there was a significant decline in patient education during the continuation phase of treatment, which is also the period when patients are at greatest risk of defaulting. Further, healthcare workers in the study reported a need for more educational materials to support patient education. The study also found that healthcare workers needed additional training on TB, in order to improve the quality of care they gave to patients.

2.2 Attitudes

Various studies have been carried out that have looked at the cultures, attitudes and beliefs of migrants and other communities with regards to Tuberculosis, and how it affects their health seeking behavior and ultimately transmission, prevention and control.

In their study, Gerrish et al., (2010) determined that Somali people spoke of how TB was perceived and those with the disease stigmatized within the Somali community. Whereas a person suffering from TB would generally share the diagnosis with their immediate family, concerns remained about the possibility of being ostracized by members of the wider community if knowledge of the disease became more widespread. This carried implications for contact tracing. However, attitudes towards TB were changing. Community leaders emphasized that as people became more knowledgeable about TB then the stigma would diminish but it was acknowledged that deeply held beliefs about the causes and consequences of TB would take some time to change

In recognition of the role that culture plays in shaping people's attitudes towards illness and their compliance with medical treatment, six focus group discussions were held among members of the Seattle Somali community. (Citrin et al., 2006). Tuberculosis, health seeking behavior,

treatment, social meanings and consequences of the illness were discussed in depth. It was established that beliefs about what causes TB may conflict with the biomedical understanding of the cause of this disease, but may not necessarily be mutually exclusive. The most prominent belief expressed was that the contraction of TB is a result of "God's will." The study further concluded that, it is common for a Somali to believe that TB is a hereditary disease, while also believing that TB is evidence of a curse inflicted as punishment by God for a dishonest or unethical action. This same person may further acknowledge that TB can be passed through the air from a sick person coughing. Another study, described misconceptions and stigma associated with TB as 'cultural barriers that provide a fertile ground for nurturing the persistence and spread of the disease' (Yadav et al., 2006) .In their study, Kan et al., (2008) also stressed that TB stigma and cultural barriers might explain at least part of the poor outcome of case holding and contact investigation. This study further concluded that these negative attitudes and cultures are detrimental, not only to the health of diseased people, but also to that of family members, close friends and the whole community. These two studies recommended that attitudinal problems obviously need to be addressed with repeated education. A similar study done in Pakistan recommended that population-wide health education campaigns were required to decrease stigmatization and discrimination associated with TB (Mushtaq et al., 2009) .The study further recommended television as a suitable medium for future campaigns provided that information should be tailored according to the needs of all people, and health workers can be involved in this regard especially in the rural areas

2.3 Practices & Health seeking behavior

A study by Rundi et al., (2010) explored healthcare- seeking behavior with regard to TB among the people of Sabah in East Malaysia and the impact of TB on patients and their families. In the study patients with TB and their relatives were interviewed. It determined that TB affected life-styles of the people and emphasized the need to understand the reasons for misconceptions about TB and to address it through health education.

A number of barriers that hinder Somali people accessing TB services were identified by (Gerrish et al.,(2010) in their study in England. Some, like stigma, are embedded in cultural beliefs or are linked to socio-cultural activities such as chewing khat. A lack of trust and confidence in healthcare providers, especially some General Practitioners arose from the protracted time it often took to diagnose TB. Healthcare practitioners lack of understanding of the Somali community and language barriers also hindered the uptake of health care services.

With regard to the Somali community, Citrin et al., (2006) in their study established that the social isolation can be so profound that the stigma of tuberculosis in Somali culture can be as severe as that of AIDS in Western culture. Many of the Somalis interviewed referred to TB as "the worst disease in the world." Persons with symptoms of tuberculosis may avoid seeking health care, or once the diagnosis is known, deny their illness to themselves or others. Children who are known or suspected to have TB will often not be allowed to go to school, which is increasingly the vehicle through which health education about diseases like TB is taught. Another implication of this stigma for immigrants to the U.S. concerns contact investigations: a family sharing a house or an apartment with other families may be reluctant to share information with public health authorities to avoid disclosure of their tuberculosis infection status to their housemates and the community.

In their studies, Gibson et al., (2005); West et al.,(2008) also showed that fear of stigmatization in the community may also result in delays in seeking care, as well as poor treatment adherence. Furthermore, as highlighted by Citrin et al., (2006), contact investigations amongst immigrant communities may be challenging if a diseased person or family with TB (that is sharing a dwelling with friends or other families) is unwilling to seek professional help for fear of rejection by their housemates and the wider community. It would be difficult, if not impossible, to trace failed asylum seekers or undocumented migrants, who have no access to healthcare services and who fear being reported to the migration authorities.

Lack of awareness is an important risk factor for exposure to TB and it not only affects health-seeking behaviors but also the control strategy, thereby sustaining transmission of disease within the population (Mushtaq et al., 2009) .This study further concluded that many people do not seek early diagnosis and treatment especially in the rural areas because they may not suspect TB upon appearance of early symptoms (cough, fever, etc.) unless severe symptoms (hemoptysis, weight loss, etc.) set in. The health-seeking behavior was better in the urban communities; the reasons for this could be attributed to ease in access to the health facilities and better knowledge about the disease. Community stigma stems from a perceived risk of infection and perceived link between TB and poverty, low caste, disreputable behavior and divine punishment. It can be further explained by the values deep rooted in the cultural fabric of South Asia, where a TB patient has long been condemned, disgraced and marginalized by the society. Social stigma adversely affects the sufferers and the impact is felt at home, in the workplace and the community. It results in delay in seeking treatment and poor treatment compliance.

CHAPTER THREE: STATEMENT OF RESEARCH PROBLEM

3.1 Research Problem

Tuberculosis is perhaps the most important public health challenge in urban centres hosting migrants in many African cities.(IOM MHD, 2009) Tens of thousands of international migrants of Somali, Ethiopian and Sudanese origins reside in Nairobi with the majority being of Somali origin residing in the Eastleigh area. Statistics indicated that there were 46,487 registered refugees in Nairobi of which 23,182(49.9%) were those from Somalia who have formal recognition as registered refugees and asylum seekers (UNHCR,2010).However, this figure does not include undocumented or irregular migrants. It is therefore important to view the undocumented Somalia nationals as in a real sense "invisible" in terms of health systems in Kenya, which further marginalizes them from services. Surveillance data is also not yet disaggregated by immigration data or nationality, and therefore it was imperative to do a study on all Somalia nationals of different migration typologies, who have migrated to and are residing in Nairobi.

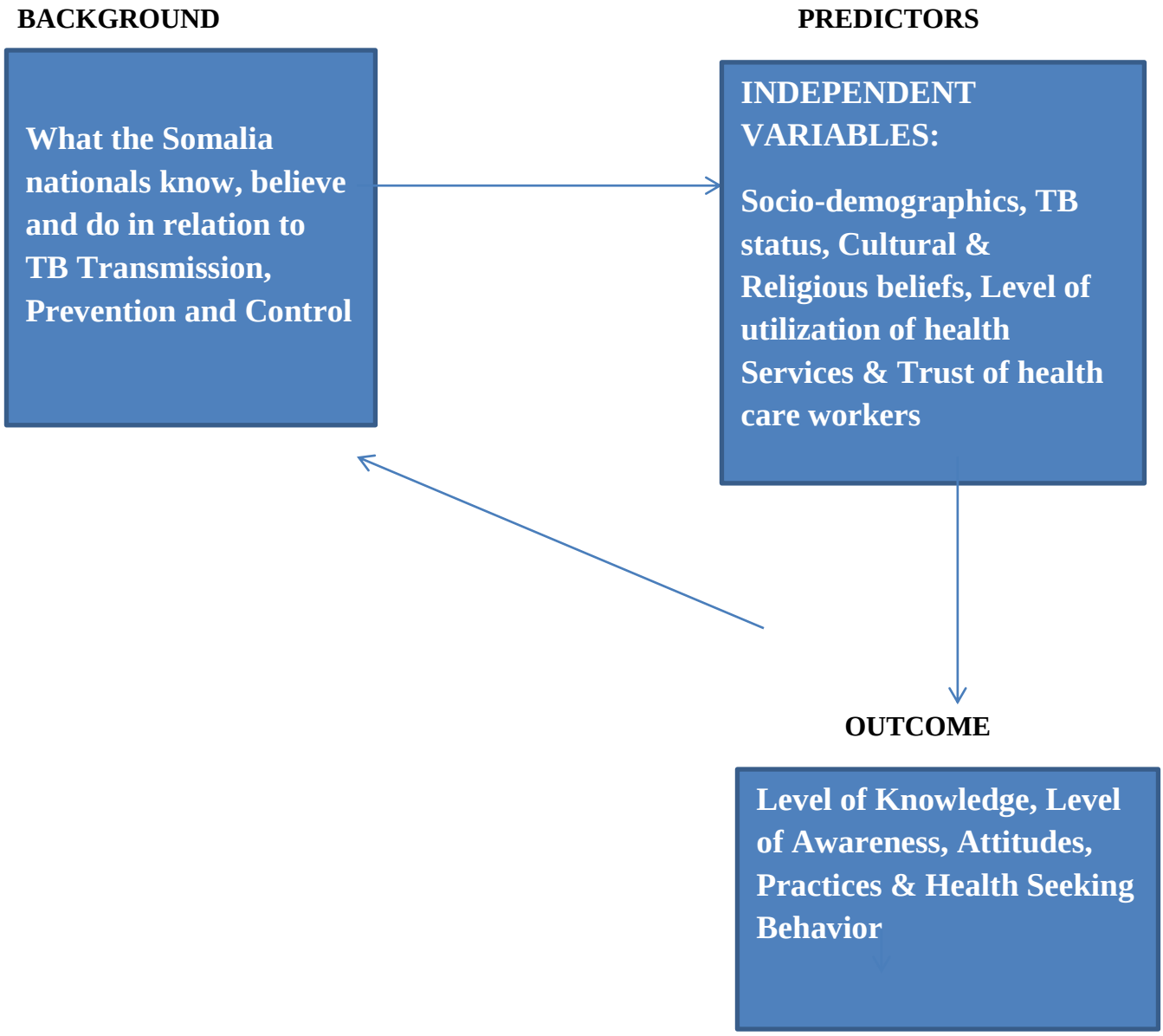
Research on the KAP of the Somali nationals of all migration typologies with respect to tuberculosis transmission, prevention and control has not been adequately carried out. There is therefore a gap in information in terms of the migrants' knowledge, attitudes and practices regarding tuberculosis. There are global public health implications due to the assumed clandestine international mobility of the Eastleigh population, and it is a real public health concern especially with the crowded conditions and potential emergence of MDR TB (IOM, 2009) .Health authorities are challenged in offering quality TB services to migrants, and these authorities note that access to healthcare is limited in part due to incapacity to offer "migrant-

friendly" services. Other obstacles migrants face in accessing services include fear of arrest, religious and cultural differences, language barriers, poor rights awareness and literacy and low social status of women. .

1n 2010 more than 17,000 TB cases were reported in Nairobi but proportion of non-Kenyans is not known (Ogaro, 2011) .In Eastleigh Nairobi, more and more cases of multidrug-resistant TB (MDR-TB) are being diagnosed among immigrants who are very difficult and expensive to treat. At one MDR TB treatment centre at Eastleigh Nairobi, out of the 33 patients on MDR TB treatment, 20 (60%) were non-Kenyans of Somali origin (Ogaro, 2011) .These statistics are of major public health concern and underscored the need for research on knowledge, attitudes and practices or health seeking behavior in relation to the prevalence of tuberculosis especially among the Somalia nationals in Nairobi. They accounted for the majority of the cases with most of them residing in the Eastleigh area of Nairobi. There is also no policy or strategic action plan in place to deal with the problem of rising prevalence of TB among the Somalia nationals who have migrated to Nairobi, from the perspective of their knowledge, attitudes and practices. The studies that have been done have looked at the biological/ host or environmental factors pre-disposing entire Somali refugee populations concentrated in refugee camps to tuberculosis infection. Therefore, unlike previous studies this study aimed at determining the Socio-cultural and demographic factors with respect to their KAP on TB, as opposed to the cause effect relationship of host/environmental factors to TB infection.

3.2 Conceptual Framework

Figure 1:



3.3 Justification

The significance of this study was to provide information necessary for planning on Advocacy, Communication and Social Mobilization (ACSM) by stakeholders. It should also add on to the wealth of knowledge and information from other studies already available to decision makers in formulating policy, regarding control and prevention of the spread of tuberculosis among Somalia Nationals. The study was expected to tell us where we are currently in terms of Knowledge, attitudes and practices and what interventions need to be put in place. The consequences of poor knowledge and attitudes would be poor control and prevention of tuberculosis. It was also important to identify the adverse practices which aid transmission of TB. This study also hoped to serve as a model and be replicated elsewhere in a different study population or group of people.

In addition to this, the study generated information on the following which should contribute to the information base that would guide policy makers for the Urban Migrant health program.

- Levels of Knowledge on Tuberculosis and its mode of transmission in Somalia nationals residing in Nairobi and its impact on Prevalence of Tuberculosis
- The attitudes and Cultural practices of these migrants and its effect on control and prevention of tuberculosis
- The extent to which the health seeking behavior of the migrants influences their access to and Utilization of TB clinic Services and ultimately effective TB Control
- The Socio-demographics of the study participants including TB status

The above information generated from the study would not only assist IOM and its partner agencies like WHO in formulating policy, but would also assist other stakeholders in structuring their urban migrant health programs related to tuberculosis prevention, control and Health Education.

3.40 Research Questions

The study sought to answer the following questions:

- How does the level of Knowledge of the Somalia nationals on TB impact on prevention, control and ultimately prevalence?
- What are the best modes of communication to use to disseminate information on TB to the Somalia nationals?
- What are the culture specific concepts that impact TB control either negatively or positively?
- Is there an association between the Somalia nationals' practices and Health seeking behavior and the failure to adequately control TB in this group?

3.50 Objectives

3.5.1 Broad Objective

- To assess the Knowledge, Attitudes and Practices among Somalia nationals regarding transmission, prevention and control of Tuberculosis

3.5.2 Specific Objectives

- To determine the level of Knowledge on transmission, prevention and control of TB of the Somalia nationals

- To determine what methods of communication are best suited as sources of information on TB for the Somalia nationals
- To identify specific attitudes or beliefs in this population that impact TB Control
- To identify the practices and health seeking behavior of the Somalia nationals in relation to the proper diagnosis and effective treatment of TB

3.6 Research Hypothesis

Null Hypothesis:

1. There is no association between the level of Knowledge, and the socio-demographic characteristics of the Somalia nationals.

2. There is no association between the choice of best suited methods of communication on TB information and the level of knowledge the Somalia nationals.

3. There is no association between the attitudes and cultures of the Somalia nationals and their socio-demographic characteristics.

4. There is no association between the health seeking behavior of the Somalia nationals and their knowledge and attitudes.

CHAPTER FOUR: STUDY DESIGN AND METHODOLOGY

4.1 Study Design

The study was a Cross-Sectional Clinic based KAP study, which combined both quantitative and qualitative methods of data collection. The cross-sectional design was employed because this is the standard design for KAP studies. The quantitative element was through a semi structured questionnaire completed by the principal investigator with the assistance of four research assistants who also served as interpreters. The questionnaire was divided into three sections; namely general and socio-demographics,TB knowledge, awareness, and sources of information, and TB attitudes and health seeking behavior The qualitative method which was to complement the quantitative was through four focus group discussions.

4.2 Variables

The dependent or outcome Variables were knowledge,awareness,attitudes and practices and health seeking behavior, with respect to TB transmission, prevention and control. These were further categorized as being good, average or poor based on the scoring. The Independent variables or predictor variables included socio-demographics-Highest level of education, Age, Gender, Migration Status, Duration of stay in Nairobi and Household size. Others were TB Status, Cultural or religious beliefs, level of utilization of health services and trust of healthcare workers.

4.2.1 Scoring for Dependent Variables

Knowledge:

The maximum possible score was 15 Marks, from a total of 15 correct responses to knowledge variable questions. The cut off for Good Knowledge was 11marks (73%) .The scoring was as follows:

Good Knowledge-11-15 marks

Average Knowledge-6-10marks

Poor Knowledge-<=5

Awareness:

The maximum possible score was 3 marks, from a total of 3 awareness variable questions, with each question carrying 1 mark. The scoring was as follows:

Good Awareness-3

Average Awareness-2

Poor Awareness-1

Attitudes:

The scoring was first done separately for the two strata; TB negatives and TB positives because both groups had a section of the questionnaire with questions targeting the attitude variable that was reserved for them.

The maximum possible score for the TB negatives was 13 from a total of 5 attitude variable questions with each question being allocated specific marks based on the number of correct responses and weighting, and a cutoff of 7(60%) set for good attitude. For the TB positives the maximum possible score was 10 from a total of 3 attitude variable questions and a cut of 6(60%)

set for good attitude; and specific marks for each question being assigned similarly. The scoring was as follows:

Good Attitude-TB Negatives-8-13marks;TB Positives 6-10 marks

Poor Attitude- TB Negatives-0-7marks;TB Positives 0-5 marks

The Overall attitude was then computed after combining both groups.

Practices & Health seeking behavior

The TB Negative respondents were assessed based on scores attained on responses to specific questions, with a maximum possible score of 9,and a cut off of 6marks(67%) for Good Seeking behavior. Similarly, The TB Positive respondents were assessed based on scores attained from responses to specific questions, with a maximum possible score of 6,and a cut off of 4marks(67%) for Good Seeking behavior.

Scoring:

Good health seeking behavior-TB Negatives-6-9marks;TB Positives-4-6marks

Poor health seeking behavior- TB Negatives-0-5marks;TB Positives-0-3marks

The Overall health seeking behavior was then computed after combining both groups

4.3 Study Area

The study was carried out in IOM's Migration Health Assessment Centre (MHAC) on 4th Ngong Avenue and the Eastleigh Community Wellness Centre, in August and September 2011

4.4 Study Population

This included Somalia nationals who came to either the Eastleigh clinic or MHAC for Community TB Services and Health Assessment respectively, but who do not necessarily have

TB infection, but also included those who had been diagnosed with TB infection and were on DOTS treatment.

4.5 Sampling

4.5.1 Sampling Procedure

Sampling frame:

- All migrants of Somali origin coming into the Migration Health Assessment Centre for Health Assessment Services on appointment
- All walk-in migrants visiting the Eastleigh clinic for the first time for TB or related services
- Clients who have been diagnosed with TB and are receiving daily DOTS treatment in the Eastleigh Clinic or Migration Health Assessment Centre
- All of the above were identified and cleared to participate in the study after completing an identification form which was verified.

Sampling Technique:

The total number of study participants was divided equally between the two clinics to give two study samples. This was based on the total calculated study sample size.

The two samples were then first stratified by TB status i.e. TB positives and TB Negatives, then further stratified by Gender for both clinics; i.e. male and Female in equal proportions.

Simple random sampling within the strata was then used to select the participants. This was done using the lottery method, where coupons were either marked 'Yes' or 'No', with those who picked the former being interviewed. Both sets of coupons were prepared on a daily basis in equal numbers to give each individual an equal chance of being selected to participate in the study.

4.5.2 Sample Size Determination:

Sample Size Calculation:

The following formula for descriptive studies was used to calculate sample size(John Wiley and sons Woolson,1987):

$$n = \frac{(Z_{1-\alpha/2})^2 \, p(1-p)}{(d)^2}$$

Where n=sample size, p-Proportion of those with good Knowledge on TB =25%(Devey, 2001) ,$Z_{(1-\alpha/2)}$ -Critical Value associated with a 95% confidence interval corresponding to $\alpha = 0.05$) = 1.96. d=degree of precision desired, set at $\pm$5%(0.05)

Substituting in the formula:

$$n = \frac{(1.96)^2 \; 0.25(1-0.25)}{(0.05)^2}$$

This gave sample size of **288.**

4.5.3 Inclusion criteria

All Somali migrants who were not Kenyan nationals and were above 18 years of age and visited the two clinics.

4.5.4 Exclusion criteria

- All clients of Somali origin who were Kenyan nationals
- Those clients who were below 18years of age

- Eligible respondents who were unwilling to consent to be included in the study.

4.6 Data collection

Quantitative

Data was collected using a semi-structured questionnaire with both close and open ended questions aimed at gathering information on the Knowledge, attitudes and practices regarding TB, transmission ,prevention and control. This were completed with the help of four interpreters/Research assistants; with two each being from each gender.

Qualitative

Four focus group discussions; two male and two female comprising of six individuals each were held to complement the quantitative data. Different participants from those who participated in the quantitative data collection were selected using the same sampling technique and eligibility criteria after completing the identification form.

The FGDs were conducted separately for males and females, due to their culture which enabled all participants to discuss the topics more freely. The FGD sessions were guided by topics and were facilitated by the principal investigator with the assistance of the research assistants, and the sessions were all voice recorded.

4.7 Data Processing & Analysis

The data in the completed questionnaires was checked for accuracy before entry into the computer. The data was then entered and analyzed using Statistical Product and Service Solutions (SPSS) version 16.0, and cross-tabulations were done and statistical inferences made. Chi-square tests were

performed to determine the association between the dependent variables and independent variables. A qualified statistician was consulted during the exercise for expert opinion in the interpretation and representation of the results.

The qualitative data was analyzed manually by reviewing the participants' statements using the transcribed data and notes, and emerging themes drawn up and conclusions made from these themes and from the different statements or quotes of the participants, in both the male and female focus group discussions.

4.8 Minimization of Errors and Biases

The following was adopted to minimize errors or biases:

1. Proper selection of study participants based on the inclusion/exclusion criteria from whom complete and accurate information was to be obtained
2. Respondent-interviewer bias-this was minimized by using non IOM interviewers/interpreters as using those from the organization would have resulted in respondents answering the questions in a way that they felt would please the organization
3. Used a standardized protocol for data collection that was to be strictly adhered to by all the interviewers, in addition to proper training for all the research assistants before the data collection proceeded
4. Performed a pilot study using the data collection instruments two days before carrying out the actual research

5. Used a Standard criteria for defining the outcomes of interest and subsequently analyzing the data
6. No incentives were given to the respondents
7. Questionnaires were translated and administered in Somali
8. All Interviewers were Somali speakers

4.9 Ethical considerations

Ethical clearance was obtained from the University of Nairobi ethical research Committee Kenyatta National Hospital /College of Health Sciences. Clearance was also obtained from the Head of IOM'S Migration Health Division in Kenya who is also the Regional Migration Health Assessment Coordinator to undertake this study, because the migrants who use IOM's services formed the basis of this study. Consent was also sought from the study participants before including them in the study.

4.10 Limitations of the study

This study focused on a population of Somalia nationals who had migrated to Nairobi which may not necessarily be representative of a similar population in a refugee camp e.g. Dadaab. The study also used all Somalia nationals of different migration typologies i.e. irregular migrants, asylum seekers and some bonafide refugees whom IOM is helping resettle. Therefore, there was lack of disaggregation based on migration status .In addition to this, this study focused on Urban Migrants who are nationals of Somalia and therefore the information generated cannot be generalized for any other urban migrant group of different nationality.

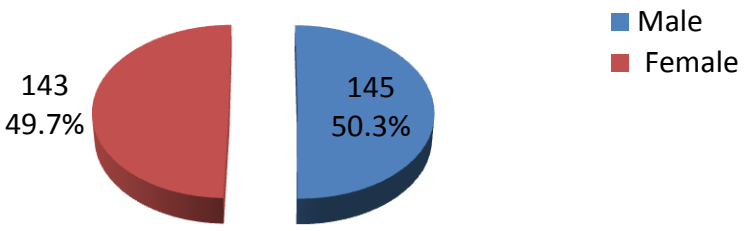
CHAPTER FIVE: STUDY RESULTS

5.1 Socio-Demographics

Gender

A total of 288 respondents participated in the study, out of which 145 were male and 143 were female.

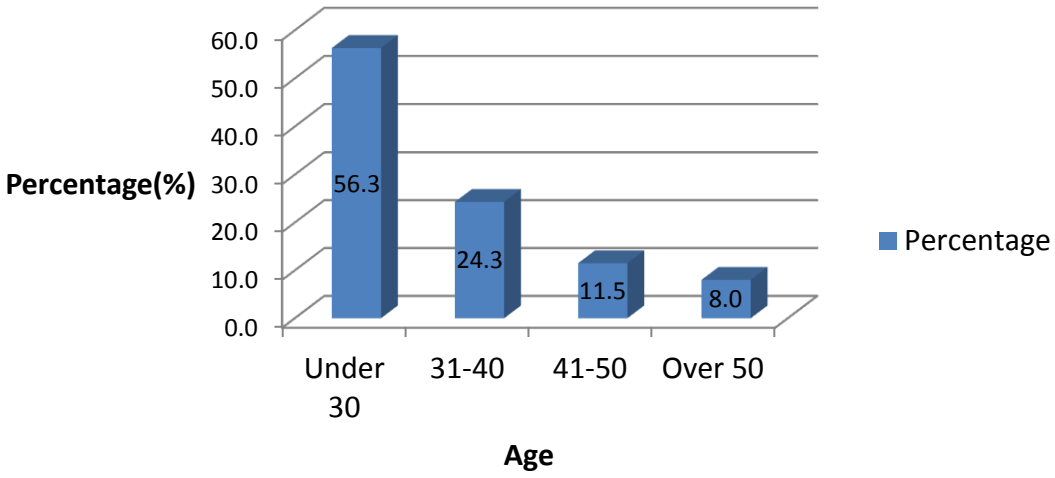
Figure 2: Gender



Age

Over half of the respondents (56.3%) were below 30 years of age and cumulatively the majority (80.6%) was below 40 years of age. The mean age was 32 years, median 29 years and standard deviation 10.9.

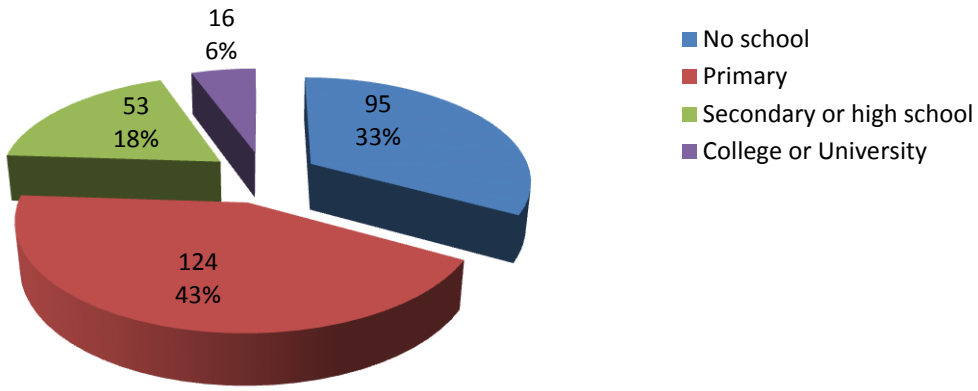
Figure 3: Age Distribution of Respondents



Level of Education

Most of the study participants were educated up to primary school level (43%), with 33% having received no formal education, and 18% and 6% Secondary and college education respectively.

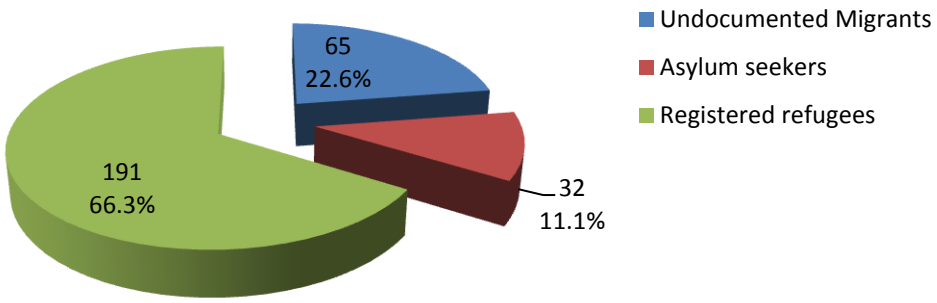
Figure 4: Level of education



Migration Status

From the study population (n=288) 66.3% were registered refugees, 22.6% undocumented migrants and 11.1% asylum seekers. Of the registered refugees 39.4% had UNHCR ration cards, while 60.6% did not have.

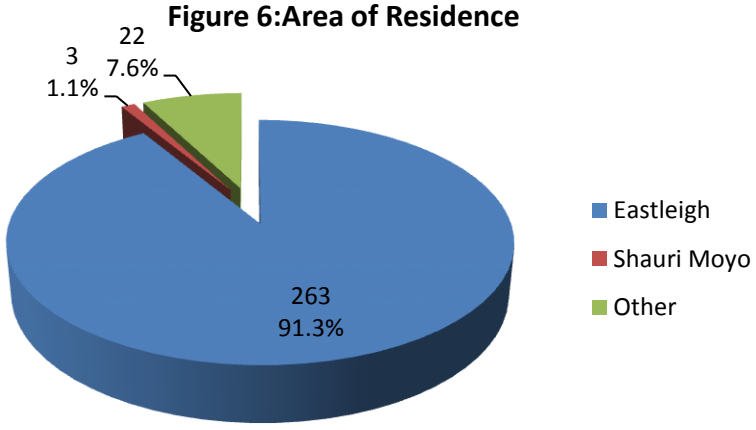
Figure 5:Migration Status



Area of residence

The majority of the respondents resided in Eastleigh (91.3%) with the rest residing in Shauri Moyo and other residential areas. This is due to the fact that most of the locals of Somali origin reside in eastleigh and thus they get assimilated more easily into the eastleigh community.

Figure 6:Area of Residence

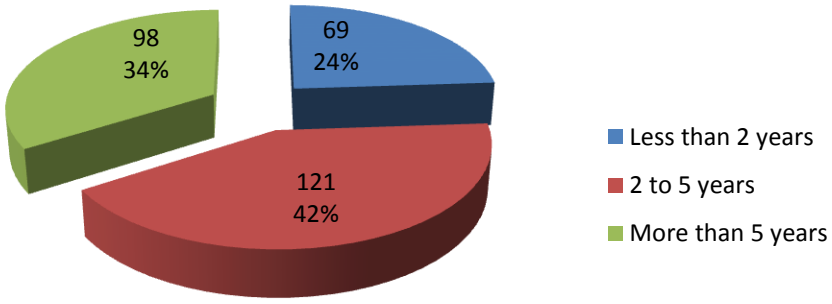


Other Socio-demographics:

Length of Stay in Nairobi

Less than half of the respondents (42%) had lived in Nairobi for between 2-5 years, 34% for more than 5 years while 24% had lived in Nairobi for less than 2years.

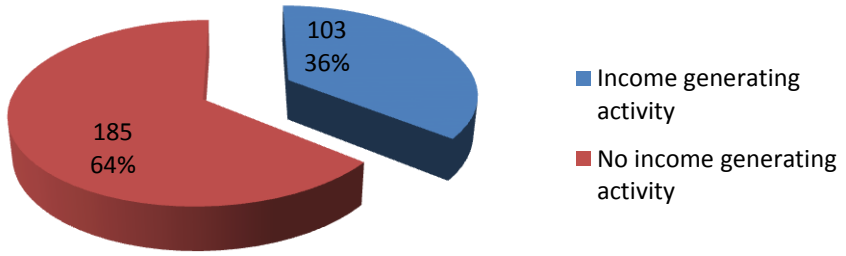
Figure 7: Length of Stay in Nairobi



Income generating activity

The majority of respondents (64%) had no income generating activity and relied on relatives, friends and members of the community for their upkeep

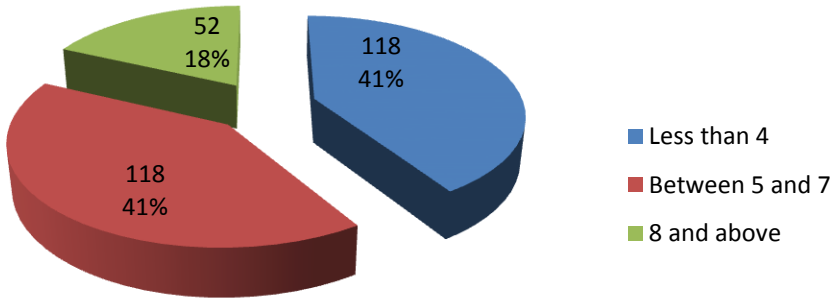
Figure 8: Distribution of respondents by income generating activity



Household Size

Less than half of the Somalia nationals (41%) lived in households of less than 4 individuals and 5-7 individuals, while only 18% lived in households of 8 individuals and above.

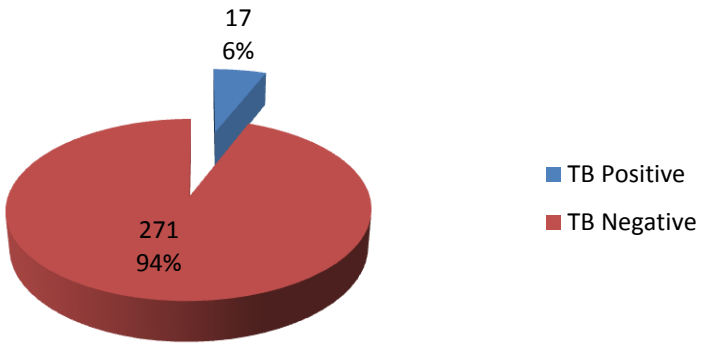
Figure 9: Distribution of respondents by household size



5.2 TB Status

The study population was also divided into two categories those who do not have TB and those who have or had TB infection in the past.

Figure 10: TB Status



Of the 288 respondents 17(6%) had TB disease presently and were on treatment or had the disease and were cured in the past. Out of these 10 were male and 7 were female. The majority of the study participants 271(94%) did not have TB disease.

5.3 Knowledge

Their Overall Knowledge on transmission, prevention and control was assessed, and their level of knowledge determined using a scoring system based on their responses to specific questions for the Knowledge variable. The scoring was as follows with a total maximum score of 15 marks:

Good Knowledge-11-15 marks

Average Knowledge-6-10marks

Poor Knowledge-<=5

The results are shown in table 1:

Table 1: Level of Knowledge

Level of Knowledge	Frequency	Percent
Good knowledge	**80**	**27.8**
Average knowledge	196	68.1
Poor knowledge	12	4.1
Total	288	100.0

The mean knowledge score was 9.30(62%) and 68.1% of the respondents attained an average score (6-10 marks) for level of knowledge, whereas 27.8% attained a good Score (73%and above >=11 marks) and 4.1% attained a poor score. (5marks and below)

5.3.1 Cross-tabulations

The following table summarizes the cross tabulations that were done to determine the relationship between level of Knowledge and different independent variables under socio-demographics and including TB status:

Table 2: Comparison of Socio-demographic characteristics and level of Knowledge

Characteristics	**Level of Knowledge**			**Total**	**Chi square X^2**	**Significance(p Value)**
	Good Knowledge	**Average knowledge**	**Poor knowledge**			
	n(%)	**n(%)**	**n(%)**	**n(%)**		
Sex Male	33(22.8)	107(73.8)	5(3.4)	145(100)	**4.423**	**0.110**
Female	47(32.9)	89(62.2)	7(4.9)	143(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Age						
Under 30	45(27.8)	109(67.3)	8(4.9)	162(100)	**2.111**	**0.909**
31-40	21(30)	48(68.6)	1(1.4)	70(100)		
41-50	8(24.2)	23(69.7)	2(6.1)	33(100)		
Over 50	6(26.1)	16(69.6)	1(4.3)	23(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		

TB Status TB +Ve	8(47.1)	9(52.9)	0(0)	17(100)	**3.777**	**0.151**
TB -Ve	72(26.6)	187(69.0)	12(4.4)	271(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Migration Status Undocumented	27(41.5)	38(58.5)	0(0.0)	65(100)		
Asylum seeker	17(53.1)	15(46.9)	0(0.0)	32(100)	**27.701**	**0.000**
Registered refugee	36(18.8)	143(74.9)	12(6.3)	191(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Education Level No school	32(33.7)	56(58.9)	7(7.4)	95(100)		
Primary	29(23.4)	92(74.2)	3(2.2)	124(100)	**10.110**	**0.120**
Secondary or high school	17(32.1)	35(66.0)	1(1.9)	53(100)		
College or University	2(12.5)	13(81.3)	1(6.2)	16(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Household size <= 4	19(16.2)	91(77.8)	7(6.0)	117(100)	**14.357**	**0.006**
5-7	44(37.3)	70(59.3)	4(3.4)	118(100)		
>=8	17(30.8)	35(67.3)	1(1.9)	53(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Length of stay in Nairobi <2years	16(23.2)	48(69.6)	5(41.7)	69(100)	**3.167**	**0.530**
2-5 years	35(28.9)	83(68.6)	3(2.5)	121(100)		
>5years	29(29.6)	65(66.3)	4(4.1)	98(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		

There was a statistically significant relationship between level of knowledge and Migration Status($p=0.000$, $X^2=27.701$) and household size($x^2=14.357, p=0.006$), but no relationship with the other socio demographic variables. There was notably no statistically significant association between TB status and knowledge ($x^2=3.777, p=0.151$) and also no relationship with Gender ($x^2=4.423, p=0.110$) and education level($x^2=10.110, p=0.120$). This means that their migration status affects their level of knowledge, and so does the size of the households they live in.

Among the registered refugees 18.8% had good knowledge,74.9% average knowledge and 6.3% poor knowledge.41.5% of the undocumented migrants had good knowledge,58.5% average and none had poor knowledge. Among the asylum seekers 53.1% had good knowledge,46.9% had average knowledge and none had poor knowledge. It is evident that the undocumented migrants and asylum seekers are not disadvantaged in terms of acquiring knowledge with an almost even distribution in the good and average knowledge groups and none with poor knowledge. However, the registered refugees formed the majority of the study participants, with a considerable number cumulatively possessing average and good knowledge, as compared to a very small percentage, with poor knowledge This confirms that even though their unregistered counterparts possessed good knowledge on TB, registration as a refugee does indeed enable a Somalia national to be in a position to possess the required knowledge on TB.

In terms of the household size the larger household sizes of above 5 had higher percentages within their groups of those with good knowledge and fewer individuals with poor knowledge as compared to the small household size of less than 4.This means that the bigger the household size the more the Somalia nationals were able to better share and impart knowledge on TB amongst themselves.

5.3.2 Knowledge on Transmission

Table 3 summarizes the multiple responses to the question 'How can one get TB?

Table 3: Responses to the question 'How can one get TB?

Responses		Frequency (n)	Percentage (%)
1.Through the air when a person with TB coughs or sneezes	Yes	259	89.9
	No	29	10.1
	Total	288	100.0
2.Through sharing dishes	Yes	99	34.4
	No	189	65.6
	Total	288	100.0
3.Through eating from the same plate	Yes	53	18.4
	No	235	81.6
	Total	288	100.0
4.Through touching items in public places	Yes	18	6.3
	No	270	93.8
	Total	288	100.0
5.Through shaking hands	Yes	2	0.7
	No	286	99.3
	Total	288	100.0
6.Spitting in public places	Yes	4	1.4
	No	284	98.6
	Total	288	100.0
7.Lack of proper hygiene	Yes	1	0.3
	No	287	99.7
	Total	288	100.0
8.Do not Know	Yes	7	2.4

	No	281	97.6
	Total	288	100.0

Most of the study participants selected the correct mode of transmission as through the air when a person with TB coughs or sneezes (89.9%) but a good number of them also selected the response through sharing dishes(34.4%),and through eating from the same plate(18.4%).Notably only 1.4% and 0.3% specified spitting in public places and lack of proper hygiene respectively. Only 2.4% did not know how TB was transmitted.

Focus group Discussions:

This more or less agrees with the discussions from the FGDS though a few misconceptions still exist

Examples of responses to the discussion question how can a person get TB?

'Through the air when a person with TB coughs or sneezes and through touching items in public places'

'A person can get it through sharing dishes and place of sleep with a person who has TB and is not under medication'

Although there was consensus among both the male and female focus group discussion participants on the correct mode of spread of TB, most of them still had additional misconceived ideas of how TB can be spread. This basically confirms general average knowledge with majority of the Somalia nationals having some facts on transmission right, but some wrong or misconceived.

5.3.3 Knowledge on Prevention

Table 4 summarizes the multiple responses to the question, how can a person prevent getting TB?

Table 4- Responses to the question, how can a person prevent getting TB?

Responses		Frequency (n)	Percentage (%)
1.Covering nose and mouth when coughing or sneezing	Yes	214	74.3
	No	74	25.7
	Total	288	100.0
2.BCG vaccination in childhood	Yes	46	16.0
	No	242	84.0
	Total	288	100.0
3.Avoid sharing dishes	Yes	117	40.6
	No	171	59.4
	Total	288	100.0
4.Washing hands after touching items in public places	Yes	17	5.9
	No	271	94.1
	Total	288	100.0
5.Good Nutrition	Yes	49	17.0
	No	239	83.0
	Total	288	100.0
6. Enough Ventilation	Yes	2	0.7
	No	286	99.3
	Total	288	100.0
7.Do not Know	Yes	8	2.8
	No	280	97.2
	Total	288	100.0

To the question how can one prevent getting TB,74.3% answered 'Covering nose and mouth when coughing or sneezing,16% selected BCG vaccination in childhood, and 40.6% selected avoid sharing dishes. Only 0.7% of the respondents specified enough ventilation, and 8% did not know how to prevent getting TB.

Even though a majority selected the correct responses to the prevention questions in the questionnaire, misconceptions and cultural concepts which are not factual or based on science still do exist.

Focus group discussions:

Some of the responses or comments to the theme on prevention in the FGDs are below:

'*By covering nose and mouth when sneezing or coughing and vaccination of children'*

'*The disease can be prevented by treating those who already have it and keeping distance from him/her before treatment. And it's also not advisable to share a bed or room with an infected person or even in public places where people are crowded. It is advisable to cover your nose and to stay away from those who are coughing, and those are the only ways you can prevent the disease'*

'My opinion is, TB can be prevented if for example if in a family of twelve, one of them gets infected, that person should be isolated and given a private room and eventually treated well'

'Prevent by avoiding people who have TB, because their breath can infect you'

'Prevent it by not sharing utensils and a bed with the person who has the disease'

Consensus may have been arrived at during the group discussions on the best ways to prevent getting or spreading TB, but additionally wrong information on the mode of spread was still evident.

5.3.4 Knowledge on Control

The selected multiple responses to the question how can TB be cured are summarized in table 5:

Table 5: Responses to the question, how can TB be cured?

Responses		Frequency (n)	Percentage (%)
1.Specific drugs given by the health centre)	Yes	283	98.3
	No	5	1.7
	Total	288	100.0
2.Early diagnosis(in infected)	Yes	63	21.9
	No	225	78.1
	Total	288	100.0
3.Initiation of treatment (in infected)	Yes	57	19.8
	No	231	80.2
	Total	288	100.0
4.Adherence to treatment(in infected)	Yes	22	7.6
	No	266	92.4
	Total	288	100.0
5.Herbal Medicine	Yes	6	2.1
	No	282	97.9
	Total	288	100.0
6.Do not know	Yes	1	0.3
	No	287	99.7
	Total	288	100.0

To this question 98.3 % selected the response, specific drugs given by the health centre),with only 2.1% selecting herbal medicine. Early diagnosis was selected by 21.9% of the respondents with 7.6% selecting adherence to treatment and 19.8% selecting initiation of treatment in the

infected, as what can lead to the cure and control of TB. Only 0.3% did not know how TB can be cured.

5.3.5 Knowledge on Symptoms of TB

A summary of the multiple responses for the symptoms of TB , is given in table below:

Table 6: Knowledge of Symptoms of TB

Symptoms	Frequency	Percentage(%)n=288
☐ Rash	**3**	**1.0**
☐ Cough	**227**	**78.8**
☐ Cough that lasts longer than 3 weeks	**69**	**24.0**
☐ Coughing up blood	**46**	**16.0**
☐ Severe headache	**89**	**30.9**
☐ Nausea	**69**	**24.0**
☐ Weight loss	**201**	**69.8**
☐ Fever	**186**	**64.6**
☐ Chest pain	**154**	**53.5**
☐ Fatigue	**47**	**16.3**
☐ Shortness of Breath	**20**	**7.0**
☐ Do not Know	**7**	**2.4**
☐ Lack of Appetite	**9**	**3.1**

The majority of the respondents mentioned cough, weight loss, fever and chest pain as the main symptoms of TB. Cough was a symptom mentioned by the majority(78.8%) of the respondents, while only 24% mentioned the symptom of cough that lasts longer than 3 weeks.

5.4 Awareness

5.4.1 Assessment of Awareness variables:

Level of Awareness:

The level of awareness was scored using three questions with a possible maximum score of 3 based on desired responses ,with score of 1=Poor awareness, 2=Average awareness,3=Good awareness

The three questions on the questionnaire included:

- Do you know about TB?
- Do you feel well informed about TB?
- Do you wish you could get information about TB?

Table 7: Level of Awareness

Awareness	Frequency	Percent
Poor awareness	123	42.7
Average awareness	165	57.3

Even though 98.6% of the study participants had heard about TB, when the overall assessment was done, none of the study participants had good awareness.

Table 8: Level of Awareness Vs. Level of Knowledge

Awareness	Level of Knowledge			Total	Chi square X^2	p Value
	Good n(%)	Average n(%)	Poor n(%)			
Poor	40(50.0)	76(38.8)	7(58.3)	123(42.7)	4.175	0.124
Average	40(50.0)	120(61.2)	5(41.7)	165(57.3)		
Good	0(0.0)	0(0.0)	0(0.0)	0(0.0)		
Total	80(100)	196(100)	12(100)	**288(100)**		

This cross tabulation showed no statistically significant relationship between level of awareness and level of knowledge (p=0.124, x2=4.175).This means that the level of awareness did not significantly affect the level of Knowledge of the Somalia nationals.

5.5 Sources of information

The table 9 shows the preferred sources of information on TB, selected by the respondents:

Table 9:Preferred sources of information on TB

Source of information	Frequency	Percentage(%) n=288
Newspapers and Magazines	68	23.6
Posters, brochures and other printed material	16	5.6
Billboard	7	2.4
Electronic media-Radio, TV	95	**33.0**
Health workers	245	**85.1**
Family or relatives, friends, neighbors	100	**34.7**
Community or religious leaders	98	**34.0**
Other(internet,Seminars,Drama,Other TB Patients	14	4.9

The respondents were to select what they believed to be the three most effective sources of information. The source of information most preferred by the Somalia nationals is through Health workers (85.1%), with the second most preferred being family or relatives, friends and neighbors (34.7%) and the third being Community or religious leaders (34.0%).This was followed closely by Electronic media-Radio, TV(33%)

Focus group discussions

This more or less agrees with the discussions coming out of the FGDs. The following are some comments from participants to the theme on sources of information on TB:

'What are the sources of information on TB that you think can most effectively reach people like you?'

'The only way a person can get information about TB,is by visiting hospitals and dispensaries, participating in health education programs and any other places where issues about it are being

discussed. Not only that, if you have TB you should seek information but also when you are not infected so as to prevent from getting TB'

'TV, Radio, through Health workers educating patients, through relatives and friends who have knowledge of TB'

Consensus was arrived at during these discussions on their most preferred sources of information on TB.

5.5.1 Cross-Tabulations

Table 10: Comparison of Preferred Source of Information (Health Workers) Vs. Socio-demographics

Independent Variable	**Respondents who selected Health workers as Preferred source of information(Dependent Variable)**		**Total**	**Chi square X^2**	**Significance (p Value)**
	Yes **n(%)**	**No** **n(%)**			
Gender					
Male	121(83.4)	24(16.6)	145(100)		
Female	124(86.7)	19(13.3)	143(100)	**0.604**	**0.509**
Total	245(85.1)	43(14.9)	288(100)		
Highest Level of education					
No School	80(84.2)	15(15.8)	95(100)	**1.602**	**0.659**
Primary	107(86.3)	17(13.7)	124(100)		
Secondary or High School	46(86.8)	7(13.2)	53(100)		
College or University	12(75.0)	4(25.0)	16(100)		
Total	245(85.1)	43(14.9)	288(100)		
Age					
Under 30	134(82.7)	28(17.3)	162(100)		
31-40	59(84.3)	11(15.7)	70(100)	**3.654**	**0.301**
41-50	30(90.9)	3(9.1)	33(100)		
Over 50	22(95.7)	1(4.3)	23(100)		
Total	245(85.1)	43(14.9)	288(100)		
Migration Status					
Undocumented	54(83.1)	11(16.9)	65(100)		

Asylum seeker	27(84.4)	5(15.6)	32(100)	**0.310**	**0.856**
Registered Refugee	164(85.9)	27(14.1)	191(100)		
Total	245(85.1)	43(14.9)	288(100)		

There was no statistically significant relationship between the most preferred source of information (health workers) and any of the socio demographic variables.

Table 11: Level of Knowledge Vs. Sources of information

Sources of information	**Level of Knowledge**			**Total**	**Chi square X^2**	**Significance (p Value)**
	Good Knowledge n(%)	**Average Knowledge n(%)**	**Poor knowledge n(%)**			
Health workers Yes	69(28.2)	166(67.8)	10(4.1)	245(100)	**0.138**	**0.933**
No	11(25.6)	30(69.8)	2(4.7)	43(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Community or religious leaders Yes	38(38.8)	58(59.2)	2(2.0)	98(100)	**9.797**	**0.007**
No	42(22.1)	138(72.6)	10(5.3)	190(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Family,relatives,friends,neighbours Yes	40(40.0)	60(60.0)	0(0.0)	100(100)	**16.082**	**0.000**
No	40(21.3)	136(72.3)	12(6.4)	188(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		
Electronic Media Yes	44(46.3)	51(53.7)	0(0.0)	95(100)	**27.747**	**0.000**
No	36(18.7)	145(75.1)	12(6.2)	143(100)		
Total	80(27.8)	196(68.1)	12(4.1)	288(100)		

There was a statistically significant relationship between level of knowledge and choice of family or relatives, friends and neighbors as preferred source of information on TB(p=0.000) community or religious leaders (p=0.007) and Electronic media-Radio, TV(p=0.000).There was however no statistically significant relationship between level of knowledge and the most preferred source of information, which is health workers. This means that the three sources of information which showed a significant association with knowledge, would be the most suited to relay information on TB to the Somali urban migrants and have an impact on their knowledge.

5.6 Attitudes

5.6.1 Assessment

The attitudes were first assessed separately in two categories, TB negatives and TB positives. The TB negatives were assessed according to their score on questions targeting attitude with a maximum possible score of 13,and a cut-off of 8marks(60%) and above set for good attitude. The TB positives were assessed similarly, according to their score on specific questions for those who have/had TB in the past targeting the attitude variable. The maximum possible score was 10,with a cut off of 6marks(60%) for good attitude

The results for the two categories were then combined to come up with the overall attitude:

Table 12:Attitudes

Category	Attitude	Frequency	Percentage
TB Negatives	Poor attitude	17	5.9
	Good attitude	254	88.2
	Total	271	94.1
TB Positives	Poor attitude	3	1.0
	Good attitude	14	4.9
	Total	17	5.9
Combined	**Poor attitude**	20	6.9
	Good attitude	268	93.1
	Total	288	100.0

These results are supported by most of the responses or comments from respondents in the focus group discussions, to the theme questions on attitudes or beliefs, where consensus was arrived at. The following are some of the comments to the theme questions:

Focus group discussions:

What worries you the most when you think about TB?

'*I think that the disease is very serious and one can die soon'*

'My worries are, as it is common in Somali community, there is fear of isolation when one is known to be having TB. They discriminate the person by telling others that so and so has TB and should stay away from him/her. One may also worry of getting HIV, since their symptoms are almost alike

'death and weight loss and that people will tell me that I have TB and that I will die soon'

Results from similar questions asked on the questionnaire confirmed that 38% feared death and rejection, and 26% would feel sadness or hopelessness if diagnosed with TB.

Do you think you can get TB?

'Yes because I am human but I will pray to God not to get TB'

'*Since I am a human being and those who are infected are also like me, I think there are possibilities that I can get it. I have no guarantee from God that I will never be infected with TB, so possibilities are there'*

This is supported by responses from the questionnaire, where 92.4% of respondents mentioned that anybody can get TB

How serious a problem do you think TB is in your community or area of residence?

In fact it is very serious since most of the people hide that they have the disease and that is the biggest problem'

Yes the disease is having greater problems to the community as the ones infected may fear being isolated or discriminated'

In your community, how is a person who has TB usually regarded or treated by others?

'*Others isolate the infected persons and others are willing to assist them and take them to the nearest health centre. But the majority isolate them and make them feel hopeless'*
'The community is divided into two, some help and support them while others reject and fear them'

Their feelings in terms of the closest statement towards those with TB were also analyzed in the questionnaire, with (49.1%) saying they feel compassion but tend to stay away from those with TB, while 42.1% felt compassion and a desire to help and 1.1% felt no compassion because it was a punishment from God. The study also confirmed that 52% of the respondents mentioned that fear of death was what worried them the most about TB, while for 21.9% it was the fear of isolation or rejection in the community that worried them the most. 47% of the respondents who did not have TB believed that they could get TB because they were human and God had control over the disease.

5.6.2 Cross tabulations

Table 13: Comparison of Socio-demographic characteristics and Overall attitudes

Characteristics	**Good Attitude n(%)**	**Poor Attitude n(%)**	**Total**	**Chi- square X^2**	**Significance(p Value)**
Sex Male	138(95.2)	7(4.8)	**145(100)**	**2.025**	**0.171**
Female	130(90.9)	13(9.1)	143(100)		
Total	**268(93.1)**	**20(6.9)**	288(100)		
Age Under 30	151(93.2)	11(6.8)	162(100)	**1.778**	**0.620**
31-40	66(94.3)	4(5.7)	70(100)		
41-50	29(87.9)	4(12.1)	33(100)		
Over 50	22(95.7)	1(4.3)	23(100)		
Total	**268(93.1)**	**20(6.9)**	**288(100)**		
TB Status				**3.202**	**0.104**

TB +Ve	14(82.4)	3(17.6)	**17(100)**		
TB -Ve	254(93.7)	17(6.3)	271(100)		
Total	**268(93.1)**	**20(6.9)**	**288(100)**		
Migration Status					
Undocumented	56(86.2)	9(13.8)	**65(100)**		
Asylum seeker	28(87.5)	4(12.5)	32(100)		
Registered refugee	184(96.3)	7(3.7)	191(100)	**9.498**	**0.009**
Total	**268(93.1)**	**20(6.9)**	**288(100)**		
Education Level					
No school	83(87.4)	12(12.6)	95(100)		
Primary	118(95.2)	6(4.8)	124(100)		
Secondary or high school	51(96.2)	2(3.8)	53(100)		
College or University	16(100)	0(0.0)	16(100)	**7.624**	**0.054**
Total	**268(93.1)**	**20(6.9)**	**288(100)**		
Household size					
<4	113(96.6)	4(3.4)	117(100)	**5.735**	**0.057**
5-7	109(92.4)	9(7.6)	118(100)		
>8	46(86.5)	7(13.5)	53(100)		
Total	**268(93.1)**	**20(6.9)**	**288(100)**		
Length of stay in Nairobi					
<2years	66(95.7)	3(4.3)	69(100)	**1.685**	**0.431**
2-5years	110(90.9)	11(9.1)	121(100)		
>5years	92(93.9)	6(6.1)	98(100)		
Total	**268(93.1)**	**20(6.9)**	**288(100)**		

There was no statistically significant relationship between Overall Attitude and Age, Gender, highest level of education, household size, length of stay in Nairobi, and also TB status. However, there was a statistically significant relationship between Overall attitude and Migration status($p=0.009, X^2=9.498$).This means that the migration status of the Somalia nationals influences their attitudes on TB.

Among the registered refugees a higher percentage had good attitude as compared to the undocumented migrants who had lower percentages. In addition to this, the undocumented migrants possess the highest percentage of those with poor attitude, closely followed by asylum seekers with registered refugees having the least. This means that a registered refugee status positions a Somalia national to possess better attitudes and beliefs regarding tuberculosis than their counterparts who are not registered.

5.7 Practices and Health seeking behavior

The Overall health seeking behavior and practices was assessed using specific questions targeting the practices variables, and scores awarded. This was done first separately for the TB Negatives and TB positive groups then combined to get the score for the overall health seeking behavior or practices.

5.7.1 Assessment

The scoring was as follows:

Good health seeking behavior-TB Negatives-6-9marks;TB Positives-4-6marks

Poor health seeking behavior- TB Negatives-0-5marks;TB Positives-0-3marks

The Overall health seeking behavior was then computed after combining both groups

The majority of the respondents(87.5%) were found to have good health seeking behavior and practices. This is summarized in table 14:

Table 14: Health Seeking behavior

Category	Health seeking behavior	Frequency	Percent
TB Negatives	Poor seeking behavior	32	11.1
	Good seeking behavior	239	83.0

	Total	**271**	**94.1**
TB Positives	Poor seeking behavior	4	23.5
	Good seeking behavior	13	76.5
	Total	**17**	**100.0**
Combined	Poor seeking behavior	36	12.5
	Good seeking behavior	252	87.5
	Total	**288**	**100.0**

Focus group discussions:

The FGDs as evidenced from below responses/comments to health seeking behavior and practices theme questions, concur with these results:

What would you do if you thought you had symptoms of TB?

'*As soon as I realize I have symptoms of TB I will go to a health facility'*

'If I suspect that I have symptoms of the disease, I will go to the nearest hospital or clinic and inform them that I have the disease and seek medication'

'Thanks to God that I know more about the disease and if I suspect that I have symptoms I will rush to the hospital to see doctors and seek for medication'

Whom would you talk to about your TB infection?

'First I will talk to my family and then the doctor'

'I would have gone to the nearest health facility where I believe they can do something about my infection'

'*I would have informed my family and expect that they would accompany me to the hospital'*

The FGD participants were more or less in agreement on these discussion topics.

This is further supported by findings from responses to questions targeting practices/health seeking behavior variables in the questionnaire. The findings confirmed that 96% of the

respondents would go to a health facility if they thought that they had symptoms of TB out of which 83.4% would go to a health facility as soon as they realize the symptoms they have might be related to TB, and 7% would go to a health facility after they had TB related symptoms for 2 weeks, and 6% would go to a health facility when drugs they buy from a pharmacy do not work.94% would talk to a doctor or health care worker about their TB infection whereas 24% would talk to a family member or close friend.

5.7.2 Cross tabulations

Table 15: Comparison of Socio-demographic characteristics and health-seeking behavior/Practices

Characteristics	**Good Health seeking behavior n(%)**	**Poor health seeking behavior n(%)**	**Total**	**Chi square X^2**	**Significance(p) Value)**
Sex Male	130(89.7)	15(10.3)	145(100)	1.240	**0.289**
Female	122(85.3)	21(14.7)	143(100)		
Total	**252(87.5)**	**36(12.5)**	288(100)		
Age Under 30	139(85.8)	23(14.2)	162(100)	**6.107**	**0.107**
31-40	59(84.3)	11(15.7)	70(100)		
41-50	33(100)	0(0.0)	33(100)		
Over 50	21(91.3)	2(8.7)	23(100)		
Total	**252(87.5)**	**36(12.5)**	**288(100)**		
TB Status TB +Ve	13(76.5)	4(23.5)	17(100)		
TB -Ve	239(88.2)	32(11.8)	271(100)	**2.009**	**0.245**
Total	**252(87.5)**	**36(12.5)**	**288(100)**		
Migration Status					
Undocumented	44(67.7)	21(32.3)	65(100)		
Asylum seeker	27(84.4)	5(15.6)	32(100)		
Registered refugee	181(94.8)	10(5.2)	191(100)	**32.818**	**0.000**
Total	**252(87.5)**	**36(12.5)**	**288(100)**		

Education Level					
No school	78(82.1)	17(17.9)	95(100)		
Primary	111(89.5)	13(10.5)	124(100)		
Secondary or high school	48(90.6)	5(9.4)	53(100)	**4.016**	**0.260**
College or University	15(93.7)	1(6.3)	16(100)		
Total	**252(87.5)**	**36(12.5)**	**288(100)**		
Household size					
<4	106(90.6)	11(9.4)	117(100)	**2.462**	**0.292**
5-7	99(83.9)	19(16.1)	118(100)		
>8	47(88.5)	6(11.5)	53(100)		
Total	252(87.5)	36(12.5)	288(100)		
Length of stay in Nairobi					
<2years	63(91.3)	6(8.7)	69(100)	**1.543**	**0.462**
2-5years	103(85.1)	18(14.9)	121(100)		
>5years	86(87.8)	12(12.2)	9)8(100		
Total	**252(87.5)**	**36(12.5)**	**288(100)**		

There was a statistically significant relationship between health seeking behavior/practices and migration status ($p=0.000, X^2,=32.818$) but no association with the other socio-demographics and TB Status. This means that the migration status of the Somalia nationals influences their practices and health seeking behavior. The registered refugees possessed the highest percentage within their group of those with good seeking behavior and the least with poor seeking behavior, as compared to their unregistered counterparts. On the other hand the undocumented migrants possessed the lowest percentage within their group of those with good practices and health seeking behavior, and the highest percentage of those with poor practices and seeking behavior as compared to the registered refugees and asylum seekers. It is evident that a registered refugee

status has a positive effect on health seeking behavior whereas an irregular migration status has a negative effect on health seeking behavior.

Table 16: Practices/Health-seeking behavior vs. Level of Knowledge

Practices and health seeking behavior	**Level of Knowledge**			**Total**	**Chi square X^2**	**p value**
	Good n(%)	Average n(%)	Poor n(%)			
Good	63(78.7)	177(90.3)	12(100)	252(87.5)	8.725	0.013
Poor	17(21.3)	19(9.7)	0(0.0)	36(12.5)		
Total	80(100)	196(100)	12(100)	288(100)		**100**

Table 17: Practices/Health-seeking behavior vs. Overall Attitude

Practices and health seeking behavior	**Overall Attitude**		**Total**	**Chi square X^2**	**p value**
	Good n(%)	Poor n(%)			
Good	239(89.1)	13(65.0)	252(87.5)	9.948	0.006
Poor	29(10.9)	7(35.0)	36(12.5)		
Total	268(100)	20(100)	288(100)		**100**

There was a statistically significant relationship between practices and level of knowledge(p=0.013) and Overall attitudes(p=0.006).This means that good attitude and good knowledge on TB translates into good practices and health seeking behavior

5.8 Hypothesis testing:

The following conclusions were drawn from the study hypothesis at 95% confidence interval:

1.The hypothesis stated that, there is no association between the level of Knowledge, and the socio-demographic characteristics of the Somalia nationals. This null hypothesis was rejected

because there was found to be a statistically significant association between knowledge and migration status(x^2=27.701,p=0.000) and household size(x^2=14.357,p=0.006)

2. The hypothesis stated that, there is no association between the choice of best suited methods of communication on TB information and the level of knowledge of the Somalia nationals. This null hypothesis was rejected as there was found to be an association between knowledge and choice of family or relatives, friends and neighbors as preferred source of information on TB(x^2=16.082,p=0.000) ,community or religious leaders (x^2=9.797,p=0.007) and Electronic media-Radio, TV(x^2=27.747,p=0.000).

3. The hypothesis stated that, there is no association between the attitudes and cultures of the Somalia nationals and their socio-demographic characteristics. This null hypothesis was rejected because there was found to be a statistically significant relationship between attitudes and migration status (x^2=9.498, p=0.009).

4.The hypothesis stated that, there is no association between the health seeking behavior of the Somalia nationals and their knowledge and attitudes. This null hypothesis was rejected as there was an association between overall practices or health seeking behavior and knowledge (x^2=8.725, p=0.013) and attitudes (x^2=9.948, p=0.006).

From the above, it is evident that the migration status is a determining factor in the KAP of the Somalia nationals.

CHAPTER SIX: DISCUSSION

The study results point towards certain aspects of the Somali nationals' Knowledge, Attitudes and Practices and how this ultimately affects, transmission Prevention, and Control of TB. The socio-demographics of the study population also provided vital information on the study population in this regard.

6.1 Socio-Demographics

Out of the study population of 288, an almost equal number 50.3% male and 49.7% female participated in the study. The respondents were predominantly young, with 50.3% being under 30yrs and cumulatively 80.6% being under 40 years of age. This accounts for the main age group of the Somalia nationals who have migrated from Somalia and are living in Nairobi. This is comparable to a study conducted on immigrants in Norway where the median age for Somali immigrants at the time of TB registration was 26years (Farah et al;2005) .In a study in India, the participants were in the age bracket of 19-45 years with a mean age of 29.55yrs (Sagare et al.,2012)

In the present study, the majority of Somali nationals (66.1%) were registered refugees and only 22.6% were un-documented refugees. This points to the fact that most of them either acquired their refugee status in a refugee camp setting before eventually migrating to Nairobi, or obtained their UNHCR mandate once in Nairobi after first migrating here as irregular or undocumented migrants. Only a fairly small percentage(35.8%) were either employed or engaged in an income generating activity.

This is comparable to a study carried out in India, where agriculture was found to be the chief occupation among men (45%) whereas majority of the females(49%) were housewives, and more than 70% of the respondents belonged to the low income group (Kar et al., 2010).

In the current study, majority of the study participants 271(94%) did not have TB infection, while 17(6%) had TB infection presently or in the past. Most of them, (66%) had lived in Nairobi for between two to five years, with the majority residing in the Eastleigh area of Nairobi. Primary school was the level of education attained by the majority of study participants(76%),with a further 33% having not received any formal education. This is consistent with results from a study by Khalil et al., (2011) which established that out of 88 TB patients surveyed 31.8% were illiterate.

6.2 Knowledge

The majority of respondents had an average level of knowledge on TB, with mean knowledge score of 9.3 out of 15 (62%). However, there were still a lot of incorrect responses to key knowledge variable questions, pointing towards misconceptions still held in the community on how TB can be transmitted. This compares with a mean score for knowledge of TB and DOTs of 6.58 out of ten in another study (Sagare et al., 2012) . The current study confirmed that there was a statistically significant association between knowledge and migration status and household size, but no statistically significant relationship with the other socio-demographics like, gender, age, length of stay in Nairobi and highest level of education attained. Other studies carried out on Somali immigrants in Norway and England, could not use the demographic of migration status as a testing variable as all the participants were legal and registered immigrants(Farah et al;2005; Gerrish et al., 2010) .A study in Pakistan, established that good knowledge was associated with

better education, high income and good housing (Mushtaq et al., 2009) .In the current study, 89.9% correctly stated the correct mode of transmission of TB which was a good majority as compared to other studies. In their study, Khalil et al., (2011) reported that only 27.3% stated that TB is transmitted through the air, and only 20% in the study by Kar et al.,(2010).This may be attributed to the fact that these two studies were carried out in rural India while the current study was conducted on urban migrants in an urban area, Nairobi. In the current study, as regards the knowledge on prevention, 76% of those who attained a good knowledge score did not know that BCG vaccination in childhood could protect one from getting TB. This compares with the findings of the study by (Khalil et al., (2011) where only 9.1% knew about BCG vaccination. This study also established that (22.7%) of respondents cited food and utensils as the route of spread of TB. This compares with the current study, where 34.4% thought that TB was spread through sharing dishes, while 18.4% thought that it was spread through eating from the same plate. Somalis have a culture of eating together from one large plate, encouraging spread of M.tuberculosis droplets and possibly TB infection. This concurred with a study on Somalis living in Sheffield, England by Gerrish et al., (2010) in which most of the respondents held the view that TB could be spread through sharing utensils with someone with TB, and most could not drink out of the same cup even if it was washed thoroughly. From this and the current study ,it is evident that even if residing in an urban setting or exposed to an urban set up misconceptions still do exist with regards to TB among the Somali Community. It is clear from the current study that a majority of the Somali nationals know how TB is transmitted and prevented, but in addition to the correct biomedical information and understanding of these topics they also have wrong information on the same centered on misconceptions and beliefs.

In the current study, only a small percentage of the respondents demonstrated knowing the importance of initiation of treatment in the infected for better control of TB.Only a very small percentage of the Somalia nationals in the current study demonstrated knowing the importance of adherence to treatment for better control of TB in their community. This therefore has to be factored into the TB education programs for the Somalia nationals who have migrated to Nairobi, to fill this knowledge gap in this very critical aspect in the control of TB. This level of knowledge may also have been informed to some extent by having an account of those who had suffered from TB in the past, and also because some of the respondents were currently on TB treatment. This compares with the study findings of Khalil et al., (2011) in India, where almost all the respondents were aware that if the anti TB medication was not taken, it could adversely affect their health. In the same study only (32.9%) of the respondents who were TB patients correctly stated the duration of treatment to be 6 – 9 months.

6.3 Awareness

The awareness of the Somalia nationals on TB was generally average, as evidenced through the scoring system used. Most of the respondents had heard about TB(98.6%) but at the same time the majority did not feel well informed about TB and felt that they needed to get more information on TB. This explains the average level of awareness among most of the study participants which was also expected given that the highest level of education attained by most of them was primary school and no school(76%).In the current study, another contributory factor for their level of awareness could be due to lack of formal health education programs or sessions. These may not be easy to organize because they all live in different houses and are not confined in one place like the refugees in a refugee camp.

In their study in rural India, Kar et al., (2010) established that 56% of respondents had heard about TB,80% were not aware of the cause or the mode of spread of the disease, of which 39% of the study population was illiterate. This compared with another study in India, which established that 91.1% of the study population was aware that TB can infect any person irrespective of socio-economic status or HIV status (Sagare et al., 2012).Similarly, Kar et al.,(2010) reported that 44% of the respondents had never heard about TB. This was a predominantly rural population with 39% being illiterate. This is in contrast to the current study on Somali nationals who have migrated to an urban area, where only 1.4% had not heard about TB.

6.4 Sources of information

The current study confirmed that the most preferred source of information on TB for the Somalia nationals is through health care workers. The second most preferred is through family,friends,relatives or neighbors. Community or religious leaders came in as the third most preferred source of information, closely followed by electronic media. However, the choice of health workers as a source of information showed no statistical significance with level of knowledge and thus would not be a recommended source of disseminating info on TB to the Somalia nationals. There was statistical significance between level of knowledge and the choice of family,friends,relatives or neighbors. Community or religious leaders and electronic media which makes them the most suitable methods of disseminating information on TB to the Somalia nationals who have migrated to Nairobi. This compares with another study where the most preferred sources of information on TB were television. friends, health care providers and family members in that order of preference (Kar et al.,2010).Similar findings were reported in a

study in Pakistan where Television (69.4%) and health workers (43.6%) were the main sources of information (Mushtaq et al., 2009) Another study established that mass media and IEC activities should be continued to disseminate information on importance of BCG vaccination in infants as a mode of prevention of TB (Khalil et al., 2011).

A baseline KAP study done in India confirmed hospitals, television and friends as the most preferred sources of information. This compares with a study done in Philippines where 41% listed mass media(newspapers, television and radio) as their most common or preferred sources of information on TB(Christina et al., 2009)

6.5 Attitudes

In the present study, there was a statistically significant relationship between attitude and migration status. The undocumented refugees had the highest number with poor attitude, while the registered refugees had the highest number with good attitude. Being a Somalia national without documentation, perhaps denies them the opportunity to get all the health services and to be part of the mobilization programs, that their registered counterparts are privileged to get. Due to fear of arrest when accessing this services as well as other factors they may not have had a chance to benefit from the TB education mobilization programs to get more enlightened on TB and therefore gradually change their mindset

The current study confirmed that most of the Somalia nationals had a good attitude when assessed individually. This may boil down to the fact that most of the study participants were young, had lived in Nairobi for between 2-5 years and were exposed and a bit more enlightened. They may have been influenced by the locals in the area they reside in. However, overall as a

Somali community people with tuberculosis are still viewed negatively by the community in general or a poor or bad attitude still exists. This compares with the findings of a study in England where most of the respondents confirmed that they would only share their TB diagnosis with immediate family for fear of being ostracized in the community and confirmed that TB was still perceived to be stigmatized in the Somali community (Gerrish et al.,2010) .Both this and the present study concur that with increased knowledge and awareness this stigma was likely to diminish, but the deeply held beliefs would take time to change. In the present study, this attitude towards those with TB was also quite evident from the focus group discussions with comments like, *'People with TB are isolated and neglected by others and they avoid them'; 'others isolate the infected persons and others are willing to assist them and take them to the nearest health centre. But the majority isolate them and make them feel hopeless'.* There were no differences observed or different themes identified between males and females during their focus group discussions that were held separately. While a small section of the community may be sympathetic and willing to help, the majority choose to be judgmental and isolate these people. This compares with a study on a rural Indian population which confirmed that 7% of the respondents said they would prefer to maintain confidentiality if they contracted TB for fear of isolation or discrimination (Kar et al.,2011). The same study confirmed a statistically significant association between this attitude and literacy levels. Another study on accredited social health activists in India confirmed good attitude towards TB patients with the majority(90.7%) who stated that they feel compassion and a desire to help (Sagare et al.,2012). This study painted a similar picture to the current study, where 47% were of the opinion that the community supports TB patients whereas 38% thought that the community is friendly but tends to avoid them. This is

in contrast to a study in Punjab Pakistan which reported that nearly half of the respondents believed that the community rejected people with TB (Mushtaq et al., 2009).

In the current study, attitude was also looked at in the context of whether one thought they could ever get TB infection, for the respondents without the disease, with 92.3% thinking that they could get the disease and 7.7% saying that they do not think that they could ever get the disease. The greatest fear for most of them when they thought about TB is death, and for the majority of the TB negative individuals their reaction to a positive TB diagnosis would be that of fear. Most of those with the disease or who had it in the past, had thought that they could get TB because they are only human and their immediate reaction once diagnosed was fear. Therefore, it is imperative that any advocacy or communication strategy should be geared towards sensitizing the Somalia nationals on the seriousness of TB but at the same time emphasize on its curable nature. This will deal with the apprehensive mindset which comes with any positive diagnosis of TB or thought of the disease among Somalia nationals. This in the long term will go a long way in improving case detection rates and better control of the spread TB infection.

6.6 Practices and Health-seeking behavior

In the present study, no statistically significant relationship was found to exist between health seeking behavior and most of the socio-demographics, i.e. age, gender, highest level of education, household size or length of stay in Nairobi. However, there was found to be an association between health seeking behavior and migration status ($p=0.000$).More of the migrants who were registered refugees had better practices and health seeking behavior than their undocumented or non-registered counterparts. In the present study, fear of arrest could explain poor health seeking behavior among many of the Somalia nationals who were

undocumented or irregular migrants. This concurs with findings from a study done on Urban refugees in Nairobi where fear of arrest and being returned to the refugee camps were found to be the main reasons that would result in poor seeking behavior and access to health services(Pavanello et. al.,2010) However, this fact was not evident in the focus group discussions where there was consensus among all the participants on seeking treatment when they have TB like symptoms irrespective of migration status. Therefore, the information education and communication approach adopted should cut across the entire population of the Somalia nationals irrespective of migration status, but most importantly it should be migrant friendly. The current study also confirmed an association between health seeking behavior and practices and knowledge and also attitudes. Good knowledge and attitudes led to good practices and health seeking behavior of the Somali urban migrants. This compares with a study done in Pakistan by Mushtaq et al.,(2009) which reported that intended health-seeking behavior was determined by good knowledge about TB ($P < 0.001$) ,better education ($P = 0.011$) and good housing ($P = 0.004$) . A study in China established that more women than men sought health-care for the current prolonged cough with a significant gender difference (women 79.2% vs. men 58.6%, $p = 0.005$ (Wang et al.,2008)

In the current study, the majority of study participants (87.5%) had good health seeking behavior and practices. Most of the study participants (83.4%) said that if they thought they had TB, they would go to a health facility and this is as soon as they realize that the symptoms could be related to TB .However, a small percentage would first go to a pharmacy (6%) and if the medicines do not work, then go to a health facility while others would go to a health facility after having the symptoms for two weeks (7%).

Even though they are the minority, this group is a crucial group to target to effectively control TB in the Somalia nationals. At this point when using ineffective drugs purchased in the pharmacy or when waiting for two weeks for the symptoms to go way, they are quite infectious and this is how TB is spread. These findings of the present study indicated better seeking behavior compared to findings from a study in china indicating that 67.3% of TB suspects sampled went to a health facility for current cough episode at the time of sampling, but 59.6% of them had firstly visited village clinics and drug stores at the onset of cough(Wang et. al.,2008) Another study in India by Sagare et al.,(2012), where 95% of the participants reported that they would go to a health facility if they had TB like symptoms, compares with the current study. In the present study, out of the seventeen TB positives interviewed, eight were diagnosed as an incidental finding during health assessment while nine were diagnosed after having TB related symptoms out of which 40% went to the health facility as soon as they realized that they had symptoms related to TB while another 46.7% did so after the symptoms had lasted for two weeks. For there to be adequate control of TB it is therefore very important for there to be timely initial diagnosis, which ultimately translates into better case detection rates. Failure to have most of those Somalia nationals suspected to have TB related symptoms promptly diagnosed could lead to the rapid spread of the disease.

This compares with a study on the Somali community in Sheffield England which established that barriers to seeking TB health services included language barriers and lack of confidentiality especially when using interpreters who needed to be trustworthy (Gerrish et al., 2010).

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

The following conclusions were drawn from the study:

1. There was an association between level of Knowledge and Migration status and also household size. Migration status was key in determining the Knowledge of the Somalia nationals living in Nairobi on TB transmission, prevention and control. In addition to this, participation of everybody in the community was key in sharing of information on TB which they had with family, relatives, friends or neighbors. This may have been through experiences of knowing people who have had TB in the past, or from knowledge acquired from other sources. This was further supported by the fact that more knowledge on TB was seen in larger households, due to this sharing of knowledge. The areas where knowledge gaps were identified included knowledge on transmission, prevention and control, with the majority having an average level of knowledge.
2. There was an association between level of knowledge and the sources of information on TB of family, relatives, friends or neighbors, community or religious leaders and electronic media. This makes them the most preferred and effective sources of information on TB for the Somalia nationals, which are therefore key for TB education programs to be carried out successfully.
3. There was an association between overall attitude and migration status. Migration Status was key in determining the attitudes of the Somalia nationals who have migrated to Nairobi, with respect to TB transmission, prevention and control. The majority of the Somalia nationals had good attitudes with most of them either feeling compassion and a

desire to help those who had TB, or feeling compassion but tending to stay away from those who had TB. In addition to this, the fear of death and fear of isolation or stigmatization remain the major fears or attitudes towards a positive TB diagnosis, among the Somalia nationals who have migrated to Nairobi.

4. There was an association between Migration status and health-seeking behavior and practices. Migration status was key in determining the practices and health-seeking behavior of the Somalia nationals who have migrated to Nairobi. The majority of the Somalia nationals had good health-seeking behavior and practices and would go to a health facility as soon as they realize that they have symptoms that may be related to TB. There was also an association between health seeking behavior and practices and both knowledge and attitudes. Their improved health seeking behavior will depend a lot on their knowledge and attitudes. Therefore, making all possible efforts to ensure that they have good knowledge and attitudes will be key in maintaining good practices and health seeking behavior.

   There were also no differences seen between males and females in terms of their knowledge, attitudes and practices with respect to tuberculosis transmission, prevention and control.

7.2 Recommendations

A lot of emphasis should therefore be placed on ensuring equal migration status in as far as is possible. Dissemination of information on TB should target the mosque or community setting and be spearheaded by the community and religious leaders. These dissemination activities should also be organized bearing in mind their culture bringing about the need to have separate sessions for men and women to encourage more openness and better interaction and thus more effective relay of information. The use of electronic media should also be targeted to disseminate information on TB to the Somalia nationals, who have migrated to Nairobi. The Somalia nationals should be encouraged to share any information or experiences on TB with family, friends, relatives and neighbors, to reach out to a bigger number of them in Nairobi.

The effective control of TB in the Somalia nationals who have migrated to Nairobi should have the input of all stake holders. IOM as a major stake holder in partnership with others should therefore all partner in facilitating and supporting TB advocacy and education initiatives by providing the necessary material and financial support through various donors.

The following are specific recommendations for IOM and other stakeholders:

1. Formalization of registration status as refugees for all eligible unregistered Somalia nationals should be facilitated and fast tracked by UNHCR. This should be done through laying of a policy framework by IOM based on the study findings, for adoption , development and implementation in collaboration with UNHCR.
2. TB education programs facilitated by IOM and targeted at the Somalia nationals who form the urban migrant population, should make use of the mosque setting or community

meetings specifically in the eastleigh area of Nairobi through effective community mobilization where TB education messages can be relayed by the community or religious leaders. They should make use of IEC materials and dissemination tools to include short audio and video sessions, simple and realistic illustrations, and pictorial booklets, brochures or pamphlets. All of these should be developed bearing in mind that the majority in the target audience would be those who are either educated up to primary school level, or have not received any formal education. These education materials should be pre-tested to ensure suitability and also guide in making the necessary revisions before the full roll out. In addition to this, the identified community and religious leaders should receive training before they embark on dissemination of information on TB using these tools. These education materials should focus on the following areas where gaps were identified; TB Transmission, Prevention and Control. These materials should also disseminate information on facts about the TB disease to deal with fears of death and Stigma, the importance of timely diagnosis and initiation of and adherence to treatment of those infected with TB, and good health seeking behavior and Practices. These activities should be spearheaded by IOM's Migration Health Division with the study findings as its basis to build partnerships with other stake holders and ensure actualization, implementation and sustainability of this education program. A supervisory monitoring and evaluation system should be put in place to ensure that the education materials are being used correctly and relaying information successfully.

3. The International Organization for Migration- IOM should partner with the department of health promotion in MOPHS so as to come into a formal agreement with IQRA FM the Somali language radio station, and be allocated sufficient programming time to

disseminate information on TB focusing on the above key areas where gaps and key areas of emphasis were identified through short advertisements and call in discussion programs that would educate and sensitize the listeners. The formal agreement would spell out the terms of engagement and the slots that would be allocated to IOM/MOPHS on the radio stations' daily programming schedule.

A follow up study should be done after implementation of these recommendations to gauge their success, and to evaluate changes in the KAP of the Somalia nationals who have migrated to Nairobi with regards to tuberculosis transmission, prevention and control with this study as the baseline. Due to rapid urbanization, another study should also be done to determine whether overcrowding and poor living or environmental conditions may be some of the main causes of high incidence of tuberculosis among Somalia nationals who have migrated to and are residing in Nairobi or neighboring urban settlements.

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APPENDICES

APPENDIX 1:

IDENTIFICATION FORM(FOOMKA AQOONSIGA)

Name of Respondent(Magaca ka jawaabaha)……..

Age…(Da'da)…….

Gender Male(rag)□ Female(dumar)□

Country of Birth(wadanka aad u dhalatay). Somalia □ Kenya □ Other Specify(ama wadan kale) □

Migration Status(nooca qaxooti ee aad tahay). Registered Refugee(ma qaxooti diiwaan gashan baad tahay□ Awaiting Resettlement(mise sugaya dib u dajin□ Irregular/undocumented migrantqaxooti aan diiwaan gashanayn□ Asylum seeker mise mid inuu dhiibo raadinaya□

If registered do you have a UNHCR ration Card?(hadaad diiwaan gashan tahay ma haysataa karaka raashiinka? Yes (haa) □ No(maya)□

If due for resettlement. State your case no(haddii ay dib dajintaada ay dhow tahay xus lambarka diiwaankaada……..

APPENDIX 2:

CONSENT FORM(foomka tashiga)

PART 1:INFORMATION SECTION(Qaybta Akhbaaraatka)

Introduction(Horudhac ama Arar)

I Dr.Curtis G.Marubu work for the International Organization for Migration (IOM) and are the main investigator for this study, which I am carrying out as a thesis for award of a Masters of Public Health degree from the University of Nairobi. The study is on the Knowledge,attitudes and Practices of Somalia nationals regarding tuberculosis transmission, prevention and control..

Dr Curtis G Marubu wuxuu u shaqeeyaa Hay'adda caalimiga ee Socdaalka ee marka la soo gaabiyo loo yahaan (IOM) waana khabiirka ku hawlan baaritaankan cilmiga ah, wuxuuna ku doodayaa in baaritaankan uu qayb ka yahay buugayga qalin jabinta jaamacadda is aan u helo shahaadada mastastarka ah ee caafimaadka guud ee ay bixiso Jamacadda Nayroobi. Baritaankaan cilmiyeed wuxuu ku salaysan yahay aqoonta , iyo qaabka ay ula tacaalaan soomalidda qaxootiga ah ee dedgen magaalooyinka waaweyn cudurka qaaxadda iyo sida ay u koontoroolaan fiifida cudurk qaaxadda.

Purpose of the Research (ujeedooyinka baaritaankaan cilmiyadeed)

We are doing the study so that we can be able to help the urban migrant community who are Somalia nationals better control and Prevent TB,through the assistance of concerned stakeholders

Waxaan doonaynaa in baaritaankaan cilmiyadeed uu wax ka taro soomaalida qaxootiga ee degen magaalooyinka waaweeyn sida ugu fiican oo ay ula tacaali karaan faafidda cudurka qaaxadda iyagoo gacan ka helaya dadka ku hawlan dabargoyinta cudurka qaaxadda.

Type of Research method (qaabka iyo nooca baaritaanka)

This research will involve completing a questionnaire and thereafter group discussions involving some of the participants. You will be assisted by research assistants. Completing the questionnaires should take about 1 hour but you are allowed to complete it at your own pace.

You are free to stop the interview at any stage and ask for clarification. The group discussions will be recorded to assist the research team to remember what was discussed

Baaritaanka wuxuu noqon doonaa qaab su,aalo qoran ah oo laga jawaabi doono, iyo doodo ku saabsan cudurka qaaxada oo ay ka qayb qaadan doonaan qaar ka mid ah ka qayb qatayaasha baaritaankaan cilmiyadeed. Waxaana gacan buuxda idin siin doona kalkaaliyaal ku hawlan baaritaankaan. Suáalaha qoran waxay idinku qaadanaysaa inaad ka jawaabtaan mudo hal saac ah, laakiin waxaad ku dhamayn kartaa waqtigii aad adiga firaaqo leedahay oo kuu sahlan.

Xaq baad u leedahay in aad istaajiso suáalaha lagu weydiinaa si ay kugu cataato suáasha lagu weydiinaa qudheeda. Doodadaha furan ee baaritaankaan waa la duubayaa, si dadka ku howlan baaritaankaan ay u xuusuustaan wixii laga dooday.

Participant Selection(qaybta ka qaybgalayaasha baartitaankan cilmiyadeed)

You meet the criteria for selection and are hereby invited to participate in this study.

Qaabka xulushadda iyo dadka ka qayb qaadanaa baaritaankan cilmiyadeed waa mid ku salaysan

Benefits (faaíido)

There will be no direct benefits to individuals, but this study will assist healthcare providers to work towards improving access to TB services for Urban Migrants who are Somalia nationals such as you.

M,a jirto faaíido toos ah oo uu ka helayo qofka ka qayb qaadanaya baaritaankan cilmiga ah, lakiin baaritaankan wuxuu kaalmaynayaa shaqaalaha ku hawlan cudurkan qaaxadda si ay sare ugu qaadaan la dagaalanka cudurkani dilaaga ah, si la markaana ay helaan soomaalida qaxootiga ah ee degen magaalooyinka waaweyn addeg hufan oo ku aadan cudurkan qaaxadda.

Risks (qatarta)

There will be no risks for participating in this study

Baaritaankani wax dhib ah oo uu ugaysaanaa ma laha ka qaybqaatayaasha.

Confidentiality (sirta)

All information collected will be kept confidential and only for use by the research team

Dhamaan akhbaaraadka la ururiyey waxaa sir ,waxaana isticmaalaaya oo kaliya kooxda ku hawlan baaritaankaan.

Results (natiijadda)

The results of this study will be shared with your community through IOM and other stake holders.

Natiijadda ka soo baxda baaritaankani waxaa lala wadaagi doonaa mujtamacaaga iyadoo loo soo marinaayo Hayádda Socdaalka Caalamiga ee ma la soo gaabiyo loo yaqaan (IOM) iyo intii kale oo ku hawlan barnaamijkani.

Who to Contact (Yaa lala xiriiraa)

If you have any questions or concerns you need addressed about the study, you can contact Dr. Curtis G. Marubu at the IOM Migration Health Assessment Centre on (020) 2720060/1 ext 120 or on 0722995716, or. University of Nairobi Ethical Research Committee Kenyatta National Hospital /College of Health Sciences P.O Box 20723 Nairobi. Tel :(020)2726300-9

Hadii aad suáala ka qabtid baaritaankaan ama aad xiisaynaysid fadlan kala xiriir Dr Curtis G Marubu oo laga heli karo waaxda caafimaadka ee Hayádda Socdaalka Caalimigga ee marka la soo gaabiyo loo yaqaan (IOM) telefoonka lambarkiisu yahay (020)2720060/1 ama 0722995716 ama Jammacadda Nayroobi kuluyadda caafimaadka oo cinwaankeeda yahay P.O.Box 20723Nairobi ama Telefoonka (0202726300-9.

PART 2: CONSENT FORM :(qaybta labaad ee foomkaan)

I have read and fully understood the information section of this consent form, and do hereby give consent voluntarily to be included by the investigator as a respondent for this Research survey. I am also aware that this research is a thesis for award of a University's Masters degree. I am further aware that my name will not be used anywhere in the study and complete confidentiality will be maintained. The results and findings generated from the study will be shared by IOM with the urban migrant population for our benefit. Also queries or doubts that I may have about the research have been cleared before hand

Waan akhriyey waana fahmay waxa ku qoran foomkaan, tala bixintaydana waa mid aysan cidi igu qasbin. Waxaan kale oo aan ogahay in baaritaankani uu yahay mid cilmi ah oo shahaado lagaga doonaayo jaamcadda Nayroobi si ay u guddonsiiso baaraha cilmigani shahaada mastarka. Waxaan kale oo aan fahamsanahay in magacaygu aan lagu xusi doonin baaritaankan,.natiijada kaa soo baxdana lala wadaagi doono soomaliada qaxootiyadda ah ee degen magaalooyinka waaweyn si ay ugu faaídaan baaritaankan iyadoo hayádaa(IOM) loo soo marin doona.

Wixii su,aalo ah ama shaki ah ee kuu saabsan baaritaankaan way kuu caddahay.Participant's Name:…….

Magaca ka qayb galaha

Signature:……

Saxiixa

Interviwer's Signature:…….

Saxiixa su,aal weydiiyaha

Date:……

Taariikhda

Verbal Consent:

Talo bixinta afka ah

I have read out the contents of the consent form to the participant, and he/she has given informed voluntary consent to participate in the study

Waxaan u akhriyey talo bixinta foomkaan ku qoran ka qaybqaatayaash baaritaankaan cilmiga ah waxayna si xor ah ugu talo bixiyeen baaritaankan.

Interpreters name:…….

Magaca tarjumaha

Signature:……..

Saxiixa

Date:…….

taariikhda

APPENDIX 3:

Serial No:……..

Questionnaire:(su'aalaha)

Survey Objective:(ujeedooyinka kormeerka ama sarfayga) To explore TB-related knowledge, attitudes, stigma and health-seeking practices among Somalia nationals in Nairobi.(inaan wax badan ka ogaado cudurka qaaxadda , siday u arkaan somaalida, habkay u daaweeyaan soomaalida ku nool Naayroobi.

Date:___/___/_Taariikh__

Information to read to participant:(akhbaaraatka loo baahan yahay inuu akhriyo ka qayb galaha baaritaankani

We wish to learn about your Knowledge, attitudes and practices regarding tuberculosis(TB).We hope to understand your needs and the best way to bring information to you,as well as barriers to seeking medical care.The information you provide will be used to improve TB control.(waxaan doonaynaa inaan wax badan ka ogaano, aqoonta, iyo habka ay ula tacaalaan somaalida cudurkani qaaxadda, waxaan rajeynaynaa inaa fahanno baahidaada iyo habka ugu fiican ee aad macluumaad sax ah kuu siin karno, iyo weliba caqabaatka hor taagan inaad is daaweyso, ogowna akhbaarka aad na siisaa waxay sare u qaadaysaa xakamaynta cudurkani.

Your answers will not be released to anyone and will remain anonymous(jawaabta aad na siisaa uma gudbinayno qof kale waxayna ahaa naysaa sir.

Thank you for your assistance(waad ku mahadsan tahay gacanta aad na siisay.

Instructions: Place an X in the box of the selected answer(s)(jawaabta saxa ah ku qor X

SECTION1:General and Demographic questions(waa su,aalo caam iyo bulsho isugu jira

Questions(Su,aal)	Answers(Jawaab)
1.How old are you? Da,dada waa imisaa?	☐ Under 30(soddon ka hoose) ☐ 31-40(waxay u dhaxaysaa 31-40) ☐ 41-50(waxay u dhaxaysaa 41-50) ☐ Over 50(50 iyo wax ka badan)
2.What is your gender? (rag ama dumar kee baad tahay?	☐ Male(rag) ☐ Female(dumar)
3.What is the highest level of education you have completed? Heer kaaga wax barasho halkee buu gaarsiisan yahay?	☐ No School(dugsi ma galin ☐ Primary(dugsiga hoose) ☐ Secondary or High School(Dugsiga sare) ☐ College or University(heer jaamacadeed)
4.What is your migration status? Waa maxay nooca qaxootinimo ee aad tahay?	☐ Undocumented(qaxooti aan diiwaan gashanayn) ☐ Asylum-seeker(qof is dhiib doon ah) ☐ Registered refugee(qaxooti diiwaan gashan)
5.What is your area of residence?(halkee baad degen tahay	☐ Eastleigh(islii)

	☐ Shauri moyo(showri mooyo) ☐ Other(meel kale) _____
6.Are you engaged in any income generating activity or employed? Ma shaqaysa taa mise waxaad tahay shaqaale)	☐ Yes(haa) ☐ No(maya)
7.For how long have you lived in Nairobi(Nayroobi meeqaa sanno ayaad ku nooshahay?)	☐ Less than 2years(wax ka yar labo sanno) ☐ 2 to 5 years(inta u dhaxaysa 2-5 sanno) ☐ More than 5 years(in ka badan shan sanno
8.What is the size of the household in which you live? Qoyska aad la nooshahay imisaa buu ka kooban yahay?	☐ Less than 4(in ka yar 4 xubnood) ☐ Between 5 and 7(wuxuu u dhaxeeyaa 5-7 xubnood) ☐ Above 8(waa in ka badan 8 xubnood)

SECTION 2:TB Knowledge and awareness(aqqon iyo Wacyi galin)

9.Do you know about TB? Ma garanaysaa cudurka qaaxadda?	☐ Yes(haa) ☐ No(maya)
10.If your answer to question no.9 is Yes, where did you first learn about tuberculosis or TB? ?(Please check all that you think are applicable)(hadday jawaabtaada no 9 ay ahayd haa halkee baad ka baratay cudurka qaaxadda	☐ Family, friends or neighbors(qoyska, saaxiibo, ama jiiraan) ☐ Religious or community leaders(sheekhda, ama hogaanka bulshadadda) ☐ Brochures, pamphlets or printed material(buugaagta, ama waxyaabaha daabacan ☐ Electronic media-TV, Radio(tiifiiga ama raadiyaha) ☐ Other(please explain) meel kale faahfaahi

11.In your opinion how serious a disease is TB?(Check one)(fikradaada, cudurkani qaaxaada ma yahay halis?	☐ Very serious(aad buu halis u yahay) ☐ Somewhat serious (waa khatar) ☐ Not very serious(khatar ma leh
12.How serious a problem do you think TB is in your community or area of residence?(Check one)(cudurka qaaxadda dhibbato ma ku hayaa bulshadiina ama degaankiina)	☐ Very serious(aad buu halis u yahay ☐ Somewhat serious(waa halis) ☐ Not very serious(halisi ma jirto)
13.What are the signs and symptoms of TB?(Please check all that you think are applicable)(waa maxay calaamadah qaaxadda?)	☐ Rash(finan) ☐ Cough(qufac) ☐ Cough that lasts longer than 3 weeks(qufac soconayo in ka badan 3 usbuuc) ☐ Coughing up blood(qufac dhiig wata) ☐ Severe headache(madax xanuun daran) ☐ Nausea(tabar darro) ☐ Weight loss(miisaankaada oo dhaca) ☐ Fever(qandho) ☐ Chest pain(xabad xanuun) ☐ Fatigue(daal) ☐ Shortness of Breath(neefsashada oo dhib ah) ☐ Do not Know(ma garan karo) ☐ Other(wax kale)
14.How can a person get TB? (Please check all that you think are applicable)si dee qof ugu dhacaa cudurka qaaxadda?)	☐ Through shaking hands(salaanta sacabadda laysa saaro) ☐ Through the air when a person with TB

	coughs or sneezes(hawada ma qof uu qufaco ama hindisooda) ☐ Through sharing dishes(ama aad weelashada aad wadaagtaan)) ☐ Through eating from the same plate(ama aad weel wax kuwada cuntaan) ☐ Through touching items in public places(doorknobs,handlesin transportation,etc)(ama aad taabatid iridaha,gaadiidka aad wada raacdaan) ☐ Do not know(ma garan karo) ☐ Other(please explain)wax kale sharax ka bixi)
15.How can a person prevent getting TB? (Please check all that you think are applicable) side buu qof ugu hor tagi karaa cudurka qaaxadda?	☐ Avoid shaking hands(iska ilaali inaad qof salaanto) ☐ Covering nose and mouth when coughing or sneezing(inaad sanka ama afka daboosho ☐ BCG Vaccination in childhood(in aad talaalka BCG qaadato caruurnimadda ☐ Avoid sharing dishes(ha la wadaagin weelasha cidna) ☐ Washing hands after touching items in public places(dhaq gacmaha markaad taabato wax yaabaha caamka ah) ☐ By avoiding people you suspect have TB(ka fogow dadaka lagu tuhmo inay qabaan qaaxadda) ☐ Good nutrition(cunno fiican qaado) ☐ Praying(Bari Allah) ☐ Do not Know(ma garan Karo) ☐ Early Diagnosis(in infected)(dhaqso

	iska daawee) ☐ Initiation of treatment(in infected)is daawee) ☐ Adherence to treatment(in infected)Daawada joogtee ☐ Other(please explain)wax kale sharax _____
16.In your opinion, who can be infected with TB? (Please check all that you think are applicable fikradaada yuu cudurkani ku dhici karaa?)	☐ Anybody(qof kasta) ☐ Only poor people(dadka faqriga ah) ☐ Smokers(dadka sigaarka caba) ☐ People living with HIV/AIDS(dadka aydhiska qaba) ☐ Evil/bad people(dadka xun) ☐ Other(please explain)wax kale sharax _____
17.Can TB be cured? (ma la daaweyn karaa qaaxadda)	☐ Yes(haa) ☐ No(maya)
18.How can someone with TB be cured? (Please check all that you think are applicable) Si dee loo daaweyn karaa qof qaba cudurkani?	☐ Herbal medicine(geedo-geedo) ☐ Rest(nasasho) ☐ Specific drugs given by the health centre(daawooyin gaar ah oo ay bixiyaan rugta caafimaadka ☐ Praying(baryo Rabi) ☐ Do not know(magaran karo) ☐ Other(wax kale) _____

SECTION 2:TB Awareness and Sources of Information

19.Do you feel well informed about TB?ma dareemaysaa in cudurkan qaaxadu aad macluumaad badan ka haysatid	☐ Yes(haa) ☐ No(maya)
20.Do you wish you could get information about TB? Ma jecleed in aad macluumaad ka heshid cudurkan qaaxadda?	☐ Yes(haa) ☐ No(maya)
21.What are the sources of information on TB that you think can most effectively reach people like you?(Please choose the three most effective sources)maxy tahay habka ugu haboon aad is leedahay wuu gaari karaa dadka adiga oo kale ee cudurkan qaaxadda?	☐ Newspapers and Magazines(wargaysyadda) ☐ Posters, brochures and other printed material(wardaha darbiga lagu dhajiyo) ☐ Billboard(boorarka waaweyn ee la suro wadooyinka) ☐ Electronic media-Radio, TV(radiya iyo tiifiga) ☐ Health workers(shaqaalaha caafimaadka) ☐ Family or relatives,friends,neighbours(qoysaa, jiiraanka, ama saaxibadda) ☐ Community or religious leaders(sheehkyaasha, iyo hoogamiyaasha bulshada) ☐ Other(Please explain)(wax kale sharax)
22.What worries you the most when you think about TB? Maxay tahay waxa aad kuu murug galiya markaad ugu fiirto cudurkan qaaxada?	_____ _____ _____

SECTION 3:TB Attitudes, Stigma and health seeking behavior

Answer questions 23-33 if you DO NOT have TB infection

23.Do you think you can get TB?(ask respondent to explain his/her answer) Cudurka qaaxada ma kugu dhici karaa	☐ Yes(because…)(haa) _____ ☐ No(because…)(maya) _____
24.What would be your reaction if you were diagnosed with TB?((Please check all that you think are applicable) sideed u arki la hayd hadii lagaa daaweeyo cudurka qaaxada	☐ Fear(cabsi) ☐ Shame(xishood) ☐ Surprise(la yaab) ☐ Embarrassment(ceeb) ☐ Sadness or hopelessness(Rajo darro) ☐ Other(wax kale _____
25.Why? Give reasons for answers above Sharax ka bixi sababaha kor ku xusan	_____ _____
26.Who would you talk to about your TB infection?(Check all that are applicable)(yaad jeceshahay inuu ka hadlo cudur qaaxada?)	☐ Doctor or healthcare worker(dhaqaatiirta) ☐ Family member or close friend(xubin qoyska ah ama saaxiib) ☐ No one(qofna) ☐ Other(wax kale) _____
27.What would you do if you thought you had symptoms of TB?(Check all that apply) maxaad samayn la hayd hadii lagu	☐ Go to a health facility(isbitaalka ayaan aadi lahaaa

arko calaamadaha qaaxadda?	☐ Go to a pharmacy(fasmishiyaha ayaan aadi lahaa) ☐ Go to a traditional healer(waxaan aadi lahaa ninka geedaha wax ku daaweeya ☐ Other(wax kale
28.If you had symptoms of TB, at what point would you go to the health facility?hadaad calaamadaha qaaxada isku aragtid ma tagaysaa rugaha caafimaadka?	☐ When drugs I get from the pharmacy do not work(markay daawada aan ka gato farmashiyaha uu shaqayn waayo ☐ As soon as I realize that my symptoms might be related to TB(markaan isku arko calaamadaha qaaxadda) ☐ When my TB like symptoms last for more than 2 weeks(markay calaamadaha qaaxaada ay labo asbuuc marayaan ama ka badan ☐ I would not go to a health facility
29.If you would not go to a health facility, what is the reason? Maxaa kuu diiday ina aad isbitaal tagto	☐ Fear of arrest due to migration status? Isbitaalka ayaan adayaa anigoo ka baqaya in la ii xiro ☐ Do not trust medical workers(ha aamini dhaqaatiirta) ☐ Do not like the attitude of medical workers(qaabka ay iila dhaqmaan dhaqaatiirta ma jecli ☐ Fear of the truth being confirmed(waxaan ka baqaa in cudurla qaaxada lagu xaqiijiyo) ☐ Other(please explain) wax kale
30.Do you know people who have/had TB? Ma garanaysaa dad qaba cudurka	☐ Yes haa

qaaxada?	☐ No may
31.What statement is closest to your feeling about people with TB disease?(Check only one answer) siddeed u aragtaa dadka qaba cudurka qaaxada	☐ "I feel compassion and desire to help" ☐ "I feel compassion but I tend to stay away from them" dulqaad baan u leeyahay lakiin waan ka fogaan ☐ "I feel no compassion because it is a punishment from God for their evil ways"uma dulqaato waay waa ciqaab Alle ka timid ☐ "I fear them because they may infect me" waxaan ka baqaa inay igu ridaan ☐ Other(please explain)wax kale sharax _____
32.In your community, how is a person who has TB usually regarded or treated by others? Dadkaaga siday u arkaan qof qaba qaaxo?	☐ Most people reject him/her wey nacayaan ☐ Most people are friendly but avoid him or her(qaar saxiib bay la yihiin laakiin wey iska ilaaliyaan ☐ The community supports him or her(bulshadu qofka qaaxadda qaba wey gargaaraan ☐ Other wax kale _____

Answer questions 33-38 if you already HAVE TB infection

33.Did you ever think you could get TB?(ask respondent to explain his/her answer) waligaa ma ku fikirtay in ay qaaxo ku dhici karto	☐ Yes(because…) haa _____ ☐ No(because…) maya _____

34.What was your reaction when you were diagnosed with TB?((Please check all that you think are applicable) haddi qaaxo lagaa daaweeyo waa side dareenkaadu	☐ Fear cabsi ☐ Shame xishood ☐ Surprise yaab ☐ Embarrassment ceeb ☐ Sadness or hopelessness rajo xumo ☐ Other wax kale _____
35.Why? Give reasons for answers above Sharax ka bixi sabaha kor ku xusan	_____ _____
36.What prompted the TB diagnosis? Maxaa keenay in qaaxo la daaweeyo	☐ Incidental finding during Health Assessment (si nassiib ah ayaa loo helay daaweeyteeda ☐ Had symptoms and sought medical care waxaa la helay calaamadaha markaas baa daawo loo helay
37.If you had symptoms of TB, at what point did you go to the health facility? Haddad isku aragtid calaamadaha qaaxada maxaa keenay in aad aadid isbitaal	☐ When drugs I got from the pharmacy did not work(markuu shaqayn waayey daawadii farmashiyaasha ☐ As soon as I realized that my symptoms might be related to TB(ma fahmay in calaamadahani ay yihiin qaaxo ☐ When my TB like symptoms lasted for more than 2 weeks(markii ay calaamadihii qaaxada ay I hayaan wax ka badan labo usbuuc
38.In your community, how would you say you	☐ Most people have rejected me

have been regarded or treated by others as somebody with TB? Bulshadaada siday u arkaan qof qaba qaaxo?)	(wey karatiilaan) ☐ Most people are friendly but avoid me(dad badan wey dulqaataan lakiin wey iska ilaaliyaan ☐ The community has been supportive of me(bulshadu wey gargaartaa qofka qaba qaaxadda ☐ Other wax kale _____ _____

Thank you very much for participating in our survey (waad mahadsan tihiin)

APPENDIX 4:

FOCUS GROUP DISCUSSION GUIDE:

Date:……

Study Location:……

Research Assistants :……

Introduction:

'Good morning to all the participants. My name is Dr. Curtis Marubu an employee of IOM, carrying out a thesis for award of a Master of Public Health degree at the University of Nairobi. Thank you for consenting to participate in our group discussion which will be mainly on Knowledge, Attitudes and practices on TB guided by some theme questions. Please discuss freely and we encourage everybody to participate equally'

Discussion Topics

1. What is TB and how can a person get TB and prevent from getting TB and can TB be cured?
2. What are the sources of information on TB that you think can most effectively reach people like you?
3. What worries you the most when you think about TB, and do you think you can get TB?
4. How serious a problem do you think TB is in your community or area of residence?
5. What would you do if you thought you had symptoms of TB, and whom would you talk to?
6. In your community, how is a person who has TB usually regarded or treated by others?