FACTORS ASSOCIATED WITH DELAY IN SEEKING CARE FOR TUBERCULOSIS PATIENTS IN TEMEKE HOSPITAL DAR ES SALAAM, TANZANIA

By

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dar- es- salaam a dissertation entitled, "**Factors Associated with Delay in Seeking Care for Tuberculosis Patients in Temeke Hospital, Dar es Salaam, Tanzania"** in partial fulfillment of the requirements for the degree of Master of Public Health of the University of Dar es salaam.

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DEDICATION

This Dissertation is dedicated to my lovely husband Aggrey Kajru, my daughter Vanessa and sons Elias and Stewart.

ABSTRACT

Introduction

Tuberculosis is a major public health problems in Tanzania. Although Tanzania has been among the developing countries in which TB is the leading cause of disease burden, the main control strategy is still passive case finding whereby people with cough are expected to go to health facilities for further examination. Delay in diagnosis tends to worsen disease progression and increase the risk of poor clinical outcome, including death and enhance transmission of TB in the community.

It is therefore important to determine factors responsible for delay in seeking care both among patients already receiving treatment and among the general population and to develop strategies to address them.

Objective

The study objective was to determine whether there is delay in seeking care for PTB and associated factors among patients attending general OPD and DOTS clinics in Temeke Municipality.

Methodology

This study, which was cross-sectional in nature, was designed to determine delay and associated factors in Temeke Municipal Hospital in 2006. There were two study groups, one of patients attending the general outpatient clinic and the other of patients attending the DOTS clinic at the same hospital. A systematic random sampling procedure was used to select members of the study population for both groups. Information on factors

on delay was obtained by using a structured questionnaire with closed and open ended questions and data were processed using the Epi-info statistical software vision 6.04.

Results

A total of 354 patients were recruited into the study from Temeke municipality. Out of these, 177 were from the general outpatient department while a similar number, 177, was recruited from those attending the DOTS clinic. Of the total study population, 193 (55.0%) were males and 161 (45.0%) were females. Age of the patients ranged from 18 to 54 years with a mean of 32 years.

While delay to seek care was present in each of the components studied (patient, diagnosis and treatment) patient delay constituted the most important contribution (72.9%) to the total delay. Hence, efforts must be made to reduce this component of delay.

The study found that respondents with high knowledge of TB (66.7%) were the ones who reported longer delays than those with moderate or poor knowledge (29.4%). This could be explained by the observation that knowledge is a necessary but not sufficient factor to influence care seeking in TB. The factors playing significant role in delayed health seeking were found to be lack of transport to health facilities and poor perception about tuberculosis.

Recommendations

Education programmes to improve health seeking behaviour and to reduce patient delay should be put in place. Through mobilization of the general population must be mobilized to participate in TB control activities, including community organizations. It is important to make clear to the population that tuberculosis is curable and that there is no discrimination or stigma attached to the disease.

Most patients reported visiting hospitals for care as their first point of contact with health care personnel. This was a good sign, which shows that patients know the importance of hospital care. However, efforts should be made to improve health care services so that provider delay is minimized. The Temeke Municipality should strengthen Education programmes on PTB for Health care providers, and the community as a whole.

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LIST OF ABBREVIATIONS/ACRONYMS

AIDS	-	Acquired Immune – Deficiency Syndrome
AFB	-	Acid Fast Bacilli
BC	-	Before Christ
BCG	-	Bacilli Calmette – Guerin
DOTS	-	Directly Observed Treatment, Short Course
DTLC	-	District Tuberculosis and Leprosy Coordinator
DMO	-	District Medical Officer
DALY	-	Disability Adjusted Life year.
FDC	-	Fixed Dose Combination
HIV	-	Human Immune-deficiency Virus
IDC	-	Infectious Disease Clinic
IUATLD	-	International Union Against Tuberculosis Lung Disease
IV	-	Intra Venous
MOH	-	Ministry of Health
MUCHS	-	Muhimbili University College of Health Sciences
NTLP	-	National Tuberculosis and Leprosy Programme
OPD	-	Out Patient Clinic.
RMO	-	Regional Medical Officer
RTLC	-	Regional Tuberculosis and Leprosy Coordinator
SPHSS	-	School of Public Health and Social Sciences
TB	-	Tuberculosis

CHAPTER 1

1.1 Introduction and background

Tuberculosis (TB) has been among the top ten causes of the burden of disease globally. It has been estimated that approximately one-third of the world's population were infected with the tubercle bacillus, and that each year 8 million people developed tuberculosis disease and 1.8 million die of it each year. About 80 percent of tuberculosis cases were found in developing countries, which included countries from Africa and South-East Asia (Styblo, 1999)

Tanzania has been among the developing countries in which TB has been the leading cause of disease burden. The major strategy for case finding in 2004 as in previous years was passive case findings whereby people with cough and other related symptoms reported to health facilities for further examination (NTLP, 2004). Diagnosis of TB among suspects was based on sputum smear microscopy and for those who were smear negative chest X-ray was needed for confirmation (NTLP, 2003). Since November 2004, the programme started piloting a partially active case finding approach involving the Community in seven regions under the FIDELIS project that was financed by IUATLD (NTLP, 2004)

Overall, 65,665 cases of Tuberculosis (all forms) were notified in 2004 in Tanzania, which was an increase of 1,000 cases compared to those of 2003 when 64,665 cases were notified. The proportion of new smear positive cases increased by less than 1%

compared to that of the previous year. The rapid increase of tuberculosis cases in recent years in Tanzania was mainly associated with HIV epidemic, but factors like population growth and urban overcrowding have also contributed (NTLP, 2004).

1.2 Natural history

Bacteria of the genus mycobacteria were the causative organisms or agents of tuberculosis. The species mycobacterium tuberculosis was attributed to most of tuberculosis disease. Less common species causing the disease are M. bovis and M. africanum. Tuberculosis infection was spread by droplets on coughing, sneezing, talking singing or laughing. Droplets were excreted into the air by patients with sputum which positive for the causative agent (mycobacterium) and can stay suspended in the air for several hours. The density of droplets inside the house remains high if the rate of air exchange with outside was low or if the population density is high. Thus, risk of infection was high in high population density and poor housing where sputum positive cases exist (Styblo, 1999).

The microorganism actually enters the body by inhalation and mostly occurs indoors. The inhaled droplet nuclei are too small to be caught by mucocilliary defense system of the bronchi and settles in the terminal alveoli of the lungs resulting into a primary lesion called "Ghon focus". Some TB bacilli escape and enter the surrounding lymph system to the nearby lymph nodes, mainly the hilar lymph nodes. The primary lesion combined with the hilar lymphdenopathy is called "primary complex". If the bacilli are

spread by blood to other organs they cause disseminated disease in the form of, TB lymphadenitis, meningitis, pericarditis, or milliary tuberculosis. If the body resistance is good the primary complex is contained. There will be exudation; caseation at the site of the reaction and finally most of tubercle bacilli will be killed leaving very few bacilli surrounded by exudation material, which later calcifies. While this process is taking place, the body develops a long lasting immunity against *Mycobacterium tuberculosis*. The calcified area heals and may have few dormant bacilli in which may multiply again if the body immunity was lowered (Rieder, 1999).

1.3 Cause and Transmission:

Tuberculosis has been for long a communicable bacterial disease resulting from infection with Mycobacterium tuberculosis whose principal reservoir is man. The diseases also infrequently caused by other mycobacteria belonging to the mycobacteria tuberculosis complex (Crofton et al, 1999). Once infected with M. tuberculosis, only a small proportion of individuals (about 10-12%) would develop the disease. The incubation period of tuberculosis was highly variable and range from few weeks to many decades. The risk of developing the disease declines steeply with time after infection. Primary tuberculosis appears within a short period after infection (usually with 5 years) and disease due to reactivation or re-infection normally appears after 5 years (Wandwalo et al, 2005).

The disease usually affects the lungs although any other organ and tissue may be affected. In absence of treatment, tuberculosis has a high case fatality rate, ranging from 60-70% for smear – positive pulmonary tuberculosis and 40 to 50% for others forms of tuberculosis, depending on the site of the disease (Wandwalo et al, 2005) Lack of awareness was also cited in study done in South India which showed less than half of the respondents were not aware if they were delaying to seek health care for TB with more men than women. Furthermore, the study revealed that public awareness on chest symptoms were not adequate, a situation which could implicate delay to seek treatment (Rajeswari et al, 2002).

1.4 Tuberculosis suspects

The following are the most common symptoms that can lead one suspect the presence of pulmonary tuberculosis:

- Persistent cough for three week (3/52) or more.
- Sputum production, sometimes bloodstained (hemoptysis), shortness of breath, chest pain.
- Fatigue (tiredness), general malaise, loss of appetite, loss of weight, night sweats and fever.

Tuberculosis is much more probable in patients with these symptoms who are, or were also in contact with sputum positive TB case than among those with no known contact (NTLP, 2003). However symptoms for extra-pulmonary TB depend on the organs involved. The following are examples of such symptoms.

- Chest pain from pleurisy.
- Swelling of lymph nodes in TB lymphadenitis.
- Pain and swelling of joints in TB arthritis.
- Deformity of the spine in Pott's disease.
- Signs of meningitis when there is tuberculosis meningitis: headache, fever, stiffness of the neck and mental confusion (NTLP, 2003).

The NTLP provide for initial diagnosis and treatment of tuberculosis patients to be carried out in health facilities on ambulatory basis provided patients were strong enough to follow their treatment and were free from complications that need hospitalization (NTLP, 2003).

Diagnosis relies on passive case finding whereby patients present to a health facility once they suspect themselves to have symptoms suggestive of tuberculosis Priority was given in identifying infectious cases through sputum microscopy examination. Every TB suspect was required to provide three sequential sputum specimens on separate days for TB diagnosis following the spot – morning – spot method, if any two of the examined sputum specimens were positive for Acid Fast Bacilli (AFB), the patient was taken to be a case of TB. Diagnosis of smear negative and extra pulmonary TB patients follows a clinical algorithm. Diagnosis of TB patients is integrated into the general health care services. TB suspects were attended and investigated by any clinician at the OPD as it is for other patients (NTLP, 2003).

1.5 Risk Factors

Risk factors for tuberculosis could be grouped into four risk categories. These are (1) risk factors for exposure, (2) risk factors for infection given exposure, (3) risk factors for progression from tuberculosis infection to disease, and (4) risk factors for tuberculosis mortality given disease (Rieder, 1999).

Predisposing factors for TB infection include overcrowding, old age and poor nutrition not vaccinated with BCG and close contact with a sputum positive case. Others are HIV infection and IV drug abuse. Tuberculosis infection prevalence, which represents the probability of being infected at any one point in time during one's life, increases with age. However the risk of reactivation of dormant infection to develop tuberculosis disease was dependent on age, immunity status and nutrition. Progression from tuberculosis infection to pulmonary tuberculosis disease was also strongly age dependent. Active TB disease occurs when the TB infection in a person's body overwhelms their immune system and the TB bacilli begin to multiply such as in alcohol abuse, HIV and other viral infection, diabetes, immune suppressing drugs etc (Rieder, 1999).

Tuberculosis has been more common among those below 15 years of age and the very old. However; the ongoing HIV epidemic has changed the age pattern of tuberculosis disease to include even those in the middle ages. It has been recognized that

tuberculosis in HIV infected individual's manifests as either smear-positive and smear-negative TB (Rieder, 1999).

HIV infection has been an important factor, which influenced the progression of latent TB infection to active disease. Progression of primary infection to TB disease occurs when immune response fails to prevent the multiplication of bacilli and then becoming re-activated. Re-activation of dormant bacilli results into multiplication and spread of mycobacterium tuberculosis. The risk of disease declines steeply with time after infection and disease may also occur after re-infection. (Rieder 1999)

1.6 Intervention

Interventions to alter the natural history of TB include BCG vaccination, improved environment, and nutrition. Once disease occurs early onset of treatment using effective drugs coupled with efficient health care system and high patient's compliance constitute the most effective interventions. (Rieder, 2002)

To avoid poor or incomplete treatment, which can lead to relapse, increased transmission, and drug resistant TB, WHO developed and advocated the use of the DOTS strategy? This strategy is considered to be a very cost-effective health intervention that has a large positive impact. The key components of the strategy were: political commitments, early diagnosis by sputum smear microscopy. Availability of short-course chemotherapy with first line drugs using regimes for 6 or 8 months, and

with direct observation for at least the first 7 months. There also have to be a regular and uninterrupted drug supply, and a recording and reporting system allowing evaluation of the outcomes for each individual patient and the program as a whole (Rieder, 2002).

TB treatment duration was eight months with rifampicin containing regimen during the intensive phase; but now since 2006 there has been a new regime of 6 months with rifampicin during the intensive phase to continuation phase (NTLP, 2006). Under the current treatment policy, patients have to come to a health facility daily for directly observed treatment (DOT) supervised by a trained health worker for six months. This new regime was started in 2006. Follow up of patients was done by checking sputum at two months, five month and at the end of treatment. Every patient was registered in a district TB register, kept by the DTLC, and in the unit TB register, kept at the respective health unit. The cohort of report TB patients was compiled and reported quarterly (NTLP, 2006)

Despite these developments the disease still has been causing high morbidity and Mortality. Many of the risk factors could be addressed, for example over 90% of all children get immunized with BCG, which protects them against infection. Ongoing poverty reduction programmes were likely to address risky factors related to poor nutrition and overcrowding in cities and towns on the long term. However the most pressing problem was how to deal with the already diseased individuals most of whom

were the main source of disease transmission and further spread to susceptible population, which increases day by day due to HIV.

1.7 Statement of the problem

Tuberculosis is a leading health problem in the world. Government run health care services in low-income countries are making efforts in providing equitable access to high quality care for diseases of public health importance like TB. But despite these efforts, the numbers of TB cases in poor countries are on the increase (Donald et al, 1994). Moreover TB in our country is still a big problem. It is not equally distributed in the population whether individually or geographically. For example, Dar es Salaam alone, contributes about 24% of all cases of TB in the country in terms of absolute number while Tanga contributes 6%, Arusha 7%, Mbeya 6%, Mwanza 7%, Morogoro 6%, Iringa 7% and others 37%. (NTLP, 2004)

Until the late 1980s Tanzania was one of the few countries which were making slow but satisfactory progress towards TB control. However this progress was curtailed by the appearance of the HIV/AIDS epidemic. This good progress was due to strong national TB programs of improved case finding and availability of effective treatment, with improved treatment case finding is still the biggest problem facing control programs

Many studies have shown that delay in care seeking on the part of the patient frustrates any efforts to improve case finding. However few studies have systematically attempted

to examine the problem of delay in care seeking and the factors associated with it. The few studies have shown delay in seeking care for TB to be associated with lack of knowledge about TB, their symptoms and transmission. A study conducted in Zambia report that as a result of poor knowledge on the benefits of completing TB course 20.8% of 382 patients stopped treatment regime after they started feeling well. Poor knowledge has been found among older and less educated people in Nepal.

In Tanzania studies have found that, in some communities, patients with low knowledge about TB were more likely to visit tradition healers and pharmacists rather than DOTS providers. A study conducted in Mwanza showed that 29% of the patients knew at least one correct side effect of anti TB drug, which is positive effect. In the study there were significant delays. Facilitation of utilization of health service, raising awareness of the disease and incorporation of private practice into tuberculosis control could help to reduce these delays (Wandwalo et al, 2000).

A joint review of NTLP activities conducted in 2004 highlighted major challenges facing the programme. These included: inadequate human resources, inadequate knowledge of TB among health workers and in the community, low case detection rates, effects of health sector reforms on NTLP, lack of effective coordination between TB and HIV prevention and control activities and the lack of community involvement in TB care (NTLP, 2004).

Therefore, the argument in this study rests on the claim that there is not sufficient knowledge about the factors responsible for delay in TB treatment. Hence by determining the factors associated with delay in care seeking (patient delay) the resulting information will be useful in raising community awareness about such factors and so provide a platform for encouraging symptomatic patients to seek care early. Such awareness will in addition contain the problems associated with poor communication, poor referral system and poor knowledge and skill of handling such patients among the health providers. (WHO, 2002)

1.8 Literature review

It has been estimated that approximately one third of the world's population is infected with the tuberculosis bacillus and that each 8 million people develop Tuberculosis disease and 1.8 million die of the disease. Approximately 80% of Tuberculosis cases are found in developing countries, in Africa and south –East Asia .The Tuberculosis situation has worsened over the past two decades in Africa owing to the HIV/AIDS epidemic. In Eastern Europe in addition to HIV infection it is associated with multidrug resistance, following deterioration of the health infrastructure (Rieder, 1999).

Tanzania has been among the developing countries in which TB was one of the leading causes of the burden of disease. The number of TB cases in Tanzania has increased from 11,753 in 1983 to about 61,603 in the year 2001, almost five fold .The annual increase was between 5- 15% and the majority of the cases appeared in the young adult

population groups aged 15 – 45 years. This was the same age group affected by HIV/AIDS. The rapid increase of TB in Tanzania was mainly associated to HIV epidemic, but factors like population growth and urban overcrowding have also contributed (NTLP, 2003).

Dar es Salaam contributes to about 24% of all cases of TB reported in Tanzania. In 2001 Dar es Salaam noticified 15,764 cases which TB contributed 25.6% of all cases. In 2002 the city noticified 16,496 cases, which contributed 26.2%. Only in Dar es Salaam has noticification rate of 136% of its estimates surpassing that of WHO estimates (NTLP, 2002).

The main Tuberculosis control strategy has been the WHO developed DOTS strategy. It aimed at diagnosis and treatment of smear-positive Tuberculosis patient self – reporting to the health services. The impact of treatment of smear -positive TB patients on mortality has been impressive. Without treatment 60 –70% of smear- positive TB patients would die within few years. Implementation of DOTS in developing countries, the case fatality rate had been reduced to approximately 5% (18) although in various African countries the case fatality rate has been much higher; these additional deaths were attributed to HIV rather than tuberculosis (Rieder, 1999).

The WHO DOTS strategy has widely been accepted as a cost effective health intervention if applied widely it might have a large impact on the global burden of the

disease due to Tuberculosis. However it was recognized that this impact would take decades to be achieved. Reasons for the slow progress include slow epidemiological trend of TB itself and the slow speed at which the DOTS strategy has been spreading in the World. Recently the G8 has called for scaling up of intervention against HIV, Tuberculosis and Malaria aiming at reducing Tuberculosis mortality by 50% by the year 2015. With the DOTS strategy alone, this target might be difficult to achieve. Therefore it may be worth exploring to what extent additional impact can be expected from additional TB control measures (Rieder, 1999).

Additional strategies, which may be considered, were diagnosis and treatment of self-reporting of patients with smears negative Tuberculosis. In countries with a high prevalence of HIV infection, the need to deal with smear negative Tuberculosis patients was felt more urgently, as pulmonary Tuberculosis patients with HIV infection have a higher probability of being smear negative. Unfortunately, the diagnosis of smear negative tuberculosis was difficult to make. It was unlike in patients with pulmonary Tuberculosis and without immunodefficient generally who have abnormal chest X-rays (Rieder, 1999)

The direct health impact of treating smear-negative patients was considerable. Without treatment, case fatality rate would be in the order of 20% in those without immunodeficiency. With treatments and especially DOTS, the case fatality rate was well below 5% in trials using 12-month regime without rimfampicin. As advancing

immunodeficiency associated with HIV infection was raising there was also an increase in the case fatality in those not treated. The impact on life years gained was more likely to be much smaller in this group. (Rieder, 1999)

Case detection rate was an important determinant of the success of a DOTS programme, using additional methods to improve case detection would seem an obvious extension of this strategy. The DOTS strategy focused on patients presenting themselves at the health services to detect cases, e.g. among contacts of patients, certain risk groups such as prisoners or the homeless, or in the general population (Rieder, 1999).

The major constraint to scaling up the available Tuberculosis control intervention was lack of political commitment, resulting in shortage of funding and Human resources for Tuberculosis control. However in recent years there were encouraging signs of increasing political commitment other constraints were related to involvement of the private sector, health sector reforms, and management capacity of Tuberculosis programmes, treatment delivery and drug supply. Global Tuberculosis control could benefit strongly from technical innovation, including the development of a vaccine giving good protection against smear-positive pulmonary Tuberculosis in adults, drug regimens for treatment of Tuberculosis diseases and latent infections required fewer contacts between patients and the health service and or shorter duration of treatment, and tools allowing better and easier diagnosis of Tuberculosis infection and disease (Rieder, 1999).

The major objective of this chapter was to explore factors associated with delay in seeking care in Tuberculosis treatment raised by other studies. This includes the magnitude of patient delay, health seeking behavior and factors responsible for making delay.

1.9 Patient delay

1. Time delay

Delay in the diagnosis of TB exacerbates the disease in affected individuals, increases their risk of death and prolongs the period of time they are infectious (Lienhardt et al, 2001). In another study it was revealed that the current approach to the control of Tuberculosis relied on passive case findings that depends on whether and when the people decide to present themselves to the health facility for help. Delays in the diagnosis of TB exacerbate the disease in affected individuals, continue infecting others and increase their risk of death (Demissie et al, 2002)

More over in another study done in five districts in Malawi showed that 72% (1099 out of 1518) patients with pulmonary Tuberculosis were interviewed, it was found that the median time for delay was 8 weeks. All received sputum smear results after median duration of 4 days, it was shown that less than half (43%) were aware of their diagnosis at the time of receiving the smear results (Benerjee et al, 2000). This observation was significantly associated with lack of knowledge of TB.

2. Age and Gender

Other studies carried in Japan revealed that patient delay was longer in the younger men aged 30-59 years had higher rates of longer patients delay and longer patients delay rates increased through the 16-year observation period (Ohmori et al, 2005), while in Dar es salaam the situation was reversed with delay among patients aged 45 year old being three times longer than among patients below 45 years (Wandwalo et al, 2000)

Social demographic characteristics also play a role in detection and treatment uptake .It was shown also that age appears to interact with factors such as income levels and education to produce vulnerability to severe disease, which include delay in seeking care (Fausset et al, 2002).

Tuberculosis was diagnosed more often in Men than in Women Most countries of the World. The main explanation appears to be that tuberculosis occurs more often in Men than Women, since the sex ratio in notified cases is generally similar to the sex ratio in incident cases. This epidemiological sex difference may result from differences in exposure, risk of infection, and or rate of progression from infection to disease (Godfrey et al, 2002). Gender related factors also account for differences in care – seeking decisions. Studies showed that women were more likely than men to seek medical care much earlier. However they were also more likely to seek care from non-DOTS providers (e.g. traditional healers, drug sellers) who may neither know TB symptoms nor use recommended diagnostic tools.

3. Place of first visit

Delay in reporting to the health facility may be influenced by the place where patients first visited. In Malawi it was known that many patients visit a traditional healer before they attend western medical services provided by government or missionary health institution in the country. Nearly 40% of smear- positive pulmonary TB patients receiving treatment at Queen Elizabeth central hospital, Blantyre stated that they visited a traditional healer before they were diagnosed with TB (Harries et al, 1997). In a study conducted in Dar es Salaam it was reported that 51.3% of newly diagnosed TB patients first visited a traditional healer before reporting to the health facility, mean delay was 21.2 weeks (Wandwalo et al, 2000). Patients believed that traditional healers could cure them and thus could utilize their services; they could be used as intermediary step to reduce delays in referrals. It is therefore important to discuss the infectious form of Tuberculosis with them so that such patients could be referred to health centers for sputum examination. This could bring the patient at the attention of medical personnel.

4. Poverty and TB

The relationship between poverty and TB or poverty and HIV is not new. Poor people are vulnerable to these infections due to the nature of their living conditions. On the other hand, once individuals succumb to these infections they easily become poor, since they are not able to become economically productive – and the vicious cycle of the triad persists (Killewo, 2002). The prevalence of TB infection has been higher among poor countries, a positive relationship has been observed between the incidence rate of

sputum smear –positive cases and percentage of the population living below poverty line. Delay in seeking treatment was among poor patients and especially females and the elderly. Poverty often precludes health seeking until the patient could be no longer able to contribute to livelihood of the family and household. In Ethiopia 243 TB patients were interviewed to assess factors influencing the decision to seek medical attention. It was found that delays over 4 weeks were significantly associated with rural residence, transport time over 2 hours, overnight travel, transport cost exceeding US dollar 1.40, having sold personal assets prior to the visit, and use of traditional medicine (Cambanis et al, 2005).

1.10 Healthcare seeking behavior

1. Accessibility and availability

Structural factors contributed to care seeking decisions. Difficulties in access to services may account for delay. Even when health care delivery functions satisfactorily distance, and direct opportunity cost (e.g. Transportation and missed work) discourage people from getting tested.

Distance from DOTS clinics accounts for longer delay. A study in Ethiopia found that default is higher among patients who need to travel longer distances to health centers and pay for consultation. Factors associated with the patient delay were economic; like cost of transport, prolonged transport time, rural residence. The median transport time

was 2 hours (Demissie et al, 2002). More than 65 million inhabitants of Ethiopia live more than 10 km of the nearest health facility (WHO, 2003)

In Tanzania the existing health infrastructure, more than 80% of the patients reported living within 5km of a healthcare facility. On average almost 50% of the patients reported using less than an hour to get at the health care facility. There was no significant difference between males and female with regard to accessibility to healthcare. (Wandwalo et al, 2000)

Potential TB patients with long-term cough in the non-program area of china have poor access to tuberculosis care, which could affect the detection of TB patients in population. Medical insurance is one of the most important factors to influence patients' access to TB care. (Fei et al, 2006)

Studies in Africa investigating health-seeking behaviour by interviewing TB patients have revealed patient knowledge issues and significant delays to diagnosis. Those that visited an alternative health provider first were significantly older than those who visited the health system first. The majority of people with cough in this population seek appropriate help early. Improved case detection might be achieved through the use of chest x-ray in addition to sputum smear. (Kasse et al, 2006)

2. Social economic and gender

Study done in Lusaka, Zambia regarding health seeking behavior revealed that there were longer delays for women corresponding to more lost working days and lost income, also heavy work load of women combined with their lack of mobility, independency and financial resources could be a potential explanation for this findings. In the high rate of epidemic of TB and HIV co- infection in the population, is the major cause associated with stigma may delay patient, especially women in seeking care (Hudelson, 1996). Also there is a barrier of transportation and time cost (Needham et al, 1998)

3. TB and HIV/AIDS

Tuberculosis and HIV /AIDS is remaining a stigmatized disease. Studies conducted in Thailand provided a perspective the degree of stigma differ between men and women HIV negative TB patients, also confusion of TB and HIV/AIDS symptoms and fear of AIDS detection, which delay seeking TB treatments. This study reported perceptions that culture belief of separating eating and drinking utensils for TB patients contributed to general hygienic practices, this could hardly be preventive in TB transmission. Causes, forms and effects of TB stigma among different cultures were comparable. It was concluded that education strategy for health staff and for community could help to improve TB and AIDS control (Ngamvithayapong et al, 2000).

4. Knowledge of TB and its cause

Knowledge about general management of Tuberculosis among TB patients has long been recognized as an important factor influencing compliance with TB treatment. Disruption of treatment often occurs because patients fail to fully understand the necessity and importance of prolonged, uninterrupted chemotherapy (Wandwalo et al, 2000).

Patients with low knowledge about symptoms were more likely to postpone seeking medical care and get tested. Poor knowledge has been found among older and less educated people in Nepal (Yamasaki et al, 2004) and marginalized groups with limited access to media in Vietnam (Hoa et al, 2003). A study conducted in Zambia reported that as result of poor knowledge on the benefits of completing TB course 29.8% of 382 of patients stopped the treatment after they started feeling well (Dale et al, 2001).

In Tanzania studies have found that in some community patients with low knowledge about TB were more likely to visit traditional healers and pharmacist rather than health facilities thereby delaying examination and TB diagnosis. But preference for non – DOTS providers cannot be related as a result of low knowledge only, rather it seemed to be a common care seeking practice based on trust and familiarity with non DOTS healthcare providers .A study conducted in Mwanza showed that 29% of the patients knew at least one correct side effects of anti TB drugs. Living in Rural areas, less

educated and old age appeared to be significantly associated with lack of knowledge on drug side effects and consequently delay in seeking care (Wandwalo et al, 2000).

1.11 Rationale for the study

TB is on the increase mainly due to HIV/AIDS. The hallmark of successful TB control was adequate case finding, early diagnosis and treatment of pulmonary TB. If there is significant delay in seeking care among sputum positive pulmonary TB patients, case finding and early diagnosis cannot succeed. Hence TB incidence will increase. It is therefore important to determine the factors responsible for delay in seeking care both among patients already receiving treatment and among the general population and to develop strategies to address them. Such strategies will consist of combined effort of health care workers in case finding and community members in encouraging those with symptoms to seek care early.

1.12 Objectives

Broad Objectives:

To determine whether there is delay in seeking care for pulmonary tuberculosis and associated factors among patients attending general out patient department and the DOTS clinic in Temeke municipal.

Specific Objectives:

1. To determine the health seeking behavior for chronic cough among patients attending general out patients department and the DOTS clinic in Temeke Municipality hospital
2. To assess the knowledge of TB, it's transmission, prevention and treatment among adult patients attending general out patient department and DOTS clinic at Temeke hospital.
3. To determine the mean duration between onset of symptoms and seeking of treatment among patients attending general out patient department and DOTS clinic at Temeke hospital.
4. To determine the proportion of patients with chronic cough who are referred to Temeke hospital for TB diagnosis and treatment.
5. To determine the proportion of patients with chronic cough who are referred for DOTS at the Temeke hospital
6. To assess perception about delay among patients attending general out patient department and DOTS clinic at Temeke Hospital.

CHAPTER 2

Methodology

2.1 Study area

The study was conducted in Temeke hospital inTemeke municipal. Temeke municipal is in Dar es Salaam. Dar es Salaam City lies between 6.34 and 7.10-degree south on the western side of the Indian Ocean. Dar es Salaam region consists of three districts namely Kinondoni, Ilala and Temeke altogether consisting of 52 administrative wards and covering a total area of 1393 square kilometers, the rural part of the district covers 945 square kilometers (Bureau of Statistics, Population and Census, 2002).

According to the 2002 national population census Dar es Salaam had a population of 2,497,940 of whom 1,261,077 were male and 1,236,863 were females. Approximately 499,588 were children under 5 years while 1,049,135 were persons aged 15-49 years. The annual population growth rate was 4.3 and average household size was 4.2 (Bureau of statistics, Population and housing Census, 2002).

Temeke is one of the three administrative districts of Dar es Salaam region with a population of about 700,000. Residences are mixed ethnicity and are engaged in low income economic generating activities, mainly in informal sector and petty trading. The district has rapid population growth and is characterized by low socio-economic indicators (Bureau of statistics, 2003)

Although Temeke has good health service coverage with about 90% of population living within 5 kilometer of health facility, other important health indicators remain poor (Temeke District Report, 2001). The population per physician ratio is 1/18,637 and mortality rate among children under five years of age is 181/1000, compare to 154/1000 for Tanzania (Health Statistics Abstract, 2002) Tuberculosis and AIDS are leading causes of death in the district, representing 36.5% of years of life lost for all age group(Adult Morbidity and Mortality Project, 1998)

Due to high TB burden, Temeke is regarded as an NTLP region and has been sub-divided into six NTLP districts namely; Wailesi, Tambukareli, Mbagala, Yombovituka, Kigamboni and Keko. Tuberculosis services are provided in 18 out of 120 health facilities found in the district (Temeke Tuberculosis and Leprosy Programme Annual Report, 2002)

2.2 Study design

The study was a cross-sectional survey to investigate whether there is delay in seeking care for TB treatment and what factors are associated with delays in seeking care in Temeke hospital in Dar es Salaam.

2.3 Study population

The study population consisted of two groups. The first group included patients attending the general out patient department of Temeke hospital while the other involved patients attending the DOTS clinic at the same hospital.

2.4 Sample size estimation

The sample size was estimated using the formula,

$$n = z^2 \frac{pq}{\varepsilon^2}$$

Where,

n = expected minimum sample size.

z = is a standard value which corresponds to 1.96 (at 95% Confidence Interval).

p = proportion of patients delay by socio economic factors (p = 30% - Wandwalo et al, 2000)

ε =Is the Margin of error on **p** =5%

q = 100-p, 100- 30 = 70

Therefore $\mathbf{n} = 1.96^2 \frac{30 \times 70}{5^2} = \mathbf{323}$

It was assumed that 10% were likely not to respond, then upward adjustment of the Sample size was made such that the adjusted minimum sample **n** was given by

n = (**n** x 10)/ (100)

$$\mathbf{n}= \frac{323\times10}{100} = \mathbf{32.3}$$

$$\mathbf{n}= 323 + 32.3 = 355$$

Distribution of patients will be as follows

$$\frac{355}{2} = 177.5$$

Hence 177 patients will be interviewed from OPD and 177 from DOTS.

2.5 Method of data collection

2.5.1 Sampling procedure.

A simple random sampling procedure was adopted to select the sample from those patients attending the out patient department and those attending the DOTS. Using a systematic random procedure every 5th patient was picked until the appropriate number of patients was reached. The numbers of patients picked for interview were from general out patient and from DOTS clinics.

At the first visit after diagnosis, eligible patients were approached by research assistants, who explained the purpose of the study and requested verbal consent. The patient if he/she is willing to participate he/she is requested to sign the consent form.

The sampled patients were reached out by the assistance from the general out patient health care providers and from DOTS health care providers in Temeke Hospital. Patients selected were reached at the respective out patient clinics and DOTS clinics.

Each DOTS center has attendance book for recording all patients who had attended clinic.

2.5.2 Research instrument

A structured Questionnaire was developed in English, translated into Kiswahili and back to English again to ensure consistency in the meaning of the two languages. The Kiswahili version was adopted as a tool for the study because it is the more commonly used language.

2.5.3 Recruitment and training of research assistants

Four research assistants were recruited and trained for three days before the study was conducted and they were given written consent and distributed questionnaire with instruction. Research assistants were selected to assist the principal investigator (PI) in data collection. The selection criteria was based on whether a person was:

(i) Completed nursing grade B and above.

(ii) Experience in research undertaking.

(ii) Experience in working with patients.

(iii) Willing to work long hours.

(iv) Knowledge of health facilities in Temeke.

After being selected they were familiarized with statement of the problem, objectives of the study, data collection techniques and tools used and plan for data collection and

handling. They were also trained on how to seek consent from the respondents and to administer questionnaires.

2.5.4 Pretest of research instruments

A pretest of research tool was carried out before the actual study took place. Pretesting was done on few participants on DOTS at IDC (Infectious Disease Center). The aim was to check the extent to which the targeted population understood the questions and to identify areas, which would need modification, hence to effect the changes prior to data collection. After the pretest the tool was revised to obtain the final version before it was used for interviews.

2.5.5 Structured interviews

Once the interviewer identified the respondents a series of steps was followed throughout the interviews. Those who were selected for interview, they must see the doctor first then they come for interview. First the interviewer introduced himself / herself as working for research project under MUCHS and that he /she wanted to interview the respondent about the condition that brought him or her to the hospital. Second informed consent for the interview was sought according to the consent form and only when consent was given did the interviewer proceed with the interview. Respondents were also informed that any information collected during the interview would be kept confidential.

The questionnaire had four parts. The first part of the questionnaire included items concerning social economic and demographic background variables (e.g. age, sex, occupational status, education and marital status). The second part of the questionnaire included questions concerning patients knowledge on Tuberculosis (e.g. knowledge of TB, source of information, causes of TB, transmission, symptoms, whether TB is treatable or not. The third part included question on health seeking behavior with question on major symptoms, which first made the patient to seek care in the place of first visit. The fourth part of the questionnaire included questions concerning accessibility care such as distance to a health facility and means of transport. The questionnaire also had questions on factors associated with patients and health care system delays in the diagnosis of Tuberculosis.

Each interview took approximately 10 to 15 minutes. At the end of each day the researcher checked the filled questionnaires and corrected them with the help of the interviewers.

2.5.6 Data processing and analysis

All questionnaires were arranged by clinic and questions coded before they were entered into a computer soft ware programme using Epi info version 6.04 for data capturing. After data entry, frequencies for each variable were run to enable the cleaning of data entry errors. Inconsistencies were identified by cross tabulations and corrected.

Data analysis was done using the Epi info software to generate appropriate tables of frequencies, cross tabulation or making their combinations. Significance was tested using **chi- square** test and **p** values for categorical variables while the **t-test** was used for continuous variables.

2.5.7 Ethical clearance.

Ethical clearance for study was sought from the MUCHS Ethical /clearance committee. Copies of letters of introduction from SPHSS were submitted to RMO, DMO's and Medical Officer in charge to enable the researcher to obtain permission to do the study in Temeke Hospital. As indicated in the section on interview informed consent was sought from the respondents by reading out the consent form after explaining the purpose of the study. Confidentiality of the collected information was also assured to the respondents. Questionnaires were numbered instead of using respondent's name to assure the respondents that the collected information could not be used by someone not involved in the study.

2.5.8 Limitation of the study

The well-known issue of stigma attached to HIV /AIDS might prevent one from volunteering to participate in the study for fear of being stigmatized. In order to overcome this limitation every effort was made to assure the patients at the clinic that all information to be collected would be treated as confidential.

2.5.9 Operational definitions

1. TB symptoms

The following symptoms and signs were used to identify possible cases of TB.

(i) Cough

(ii) Fever

(iii) Chest pain

(iv) Blood in sputum

(v) Weight loss

(vi) Weakness/fatigue

(vii) Loss of appetite

However having chronic cough of more than 3 (three) weeks was used for estimating the onset of symptoms for the study subjects.

2. Patient delay

The time from the onset of symptoms until a patient first visited to a health facility. It includes time spent with all the non- formal health care providers like pharmacy shops and traditional healers. Delay in this study was measured by the number of days from the time of onset of symptoms to the time when treatment started. A patient with a chronic cough of three weeks (21 days) onwards or more who had not consulted a health care provider was considered delayed.

Total delay was the time from onset of symptoms until the start of treatments.

Figure 1: Conceptual framework for delay

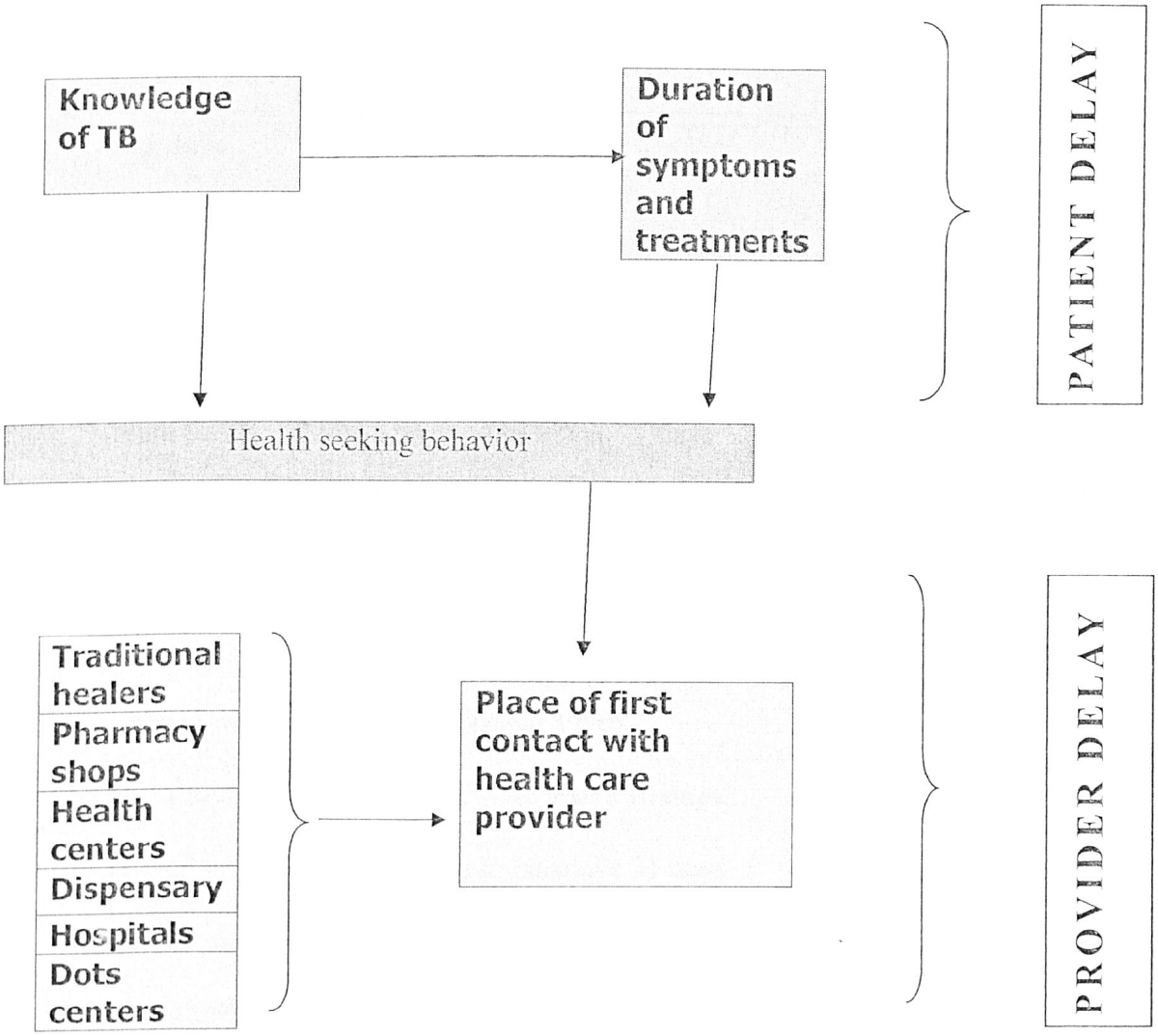
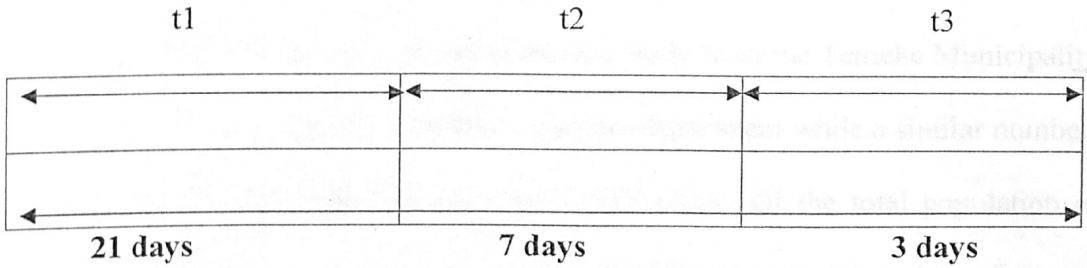


Figure 2: Concept of delay in tuberculosis treatment



Key:

t1 = Patient delay __ the time from onset of symptoms until the patient visits a health care facility which is taken to be above 21 days.

t2 =Diagnosis delay__ the time from the first health care seeking for diagnosis until diagnosis is made provider delay which is taken to be above 7 days.

t3 =Treatment delay__ the delay from the time diagnosis is made until treatment is started which is taken to be above 3 days.

t2 + t3 = Providers delay is taken to be above 10 days.

t1 + t2 + t3 = Total delay is taken to be above 31 days.

3. Chronic cough

Is the cough which persistent more than three weeks (21 days)

CHAPTER 3:

RESULTS

3:1 Socio-demographic characteristics of the study sample

A total of 354 patients were recruited into the study from the Temeke Municipality .Out of these, 177 were from the general outpatients department while a similar number, 177, was recruited from those attending the DOTS clinic. Of the total population of 354 patients, 193 (55.0%) were males and 161 (45.0%) were females. Age of the patients ranged from 18 to 54 years with a mean of 32 years. Other social-demographic characteristics are presented in Table 1 below.

3.2 Health seeking behavior among patients with chronic cough.

There were 195 patients with chronic cough of whom 56 (28.7%) reported to have been referred to a higher level of health facility. Before the referral, however, patients reported to have sought treatment (on seeing the signs and symptoms of the disease) from the following places: dispensary (17.9%), health centre (20.5%), hospital (82.1%), traditional healers (2.1%), and TB health centre's that provide DOTS (4.6%), while 2 (1%) had bought some drugs from pharmacy shops. Reportedly, more than 90% (i.e. 180 out of 195 patients) had been screened for TB, and 177 (91%) had received some form of treatment. Following the treatment at respective places patients expressed their conditions as improved 138 (78%), no change 32 (18%) and worsened 7 (4%).

Table 1: Distribution of selected socio-demographic characteristics by sex

Characteristic	Sex		Total (n=354)
	Male (n=193)	Female (n=161)	
Age (in years):	**n (%)**	**n (%)**	**N (%)**
<30	76 (39.4)	82 (50.9)	158 (44.6)
30-39	69 (35.8)	53 (32.9)	122 (34.5)
40+	48 (24.9)	26 (16.1)	74 (20.9)
Marital status:			
Single	83 (43.0)	63 (39.1)	146 (41.2)
Married	96 (49.7)	70 (43.5)	166 (46.9)
Divorced	8 (4.1)	13 (8.1)	21 (5.9)
Other	6 (3.1)	15 (9.3)	21 (5.9)
Level of education :			
None	24 (12.4)	20 (12.4)	44 (12.4)
Primary	149 (77.2)	130 (80.7)	279 (78.8)
Secondary and beyond	20 (10.4)	11 (6.8)	31 (8.8)
Occupation:			
Peasant	22 (11.4)	7 (4.3)	29 (8.2)
Business	84 (43.5)	44 (27.3)	128 (36.2)
Employed	28 (14.5)	17 (10.6)	45 (12.7)
House wife or unemployed	59 (30.6)	93 (57.8)	152 (73.7)

3.3 Knowledge on TB

The respondents were assessed about knowledge on transmission, treatment and prevention of TB by asking some basic questions about cause, important symptoms, mode of transmission, and diagnosis and treatment of tuberculosis. There were 18 questions intended to measure the level of knowledge. Table 2 below shows the responses per question.

Table 2: Responses to knowledge questions on TB (n=354): number of respondents with correct answer by clinic type

Question/Item	Type of Clinic		Total (%)
	OPD (%) N=177	DOTS (%) N=177	
Mentioning 1 major symptom of TB	134 (75.5)	144 (81.4)	278 (78.5)
Mentioned correct cause of TB	68 (38.4)	77 (43.5)	145 (41.0)
Mentioned that TB is treatable	158 (89.3)	166 (93.8)	324 (93.0)
Mentioned correct place for TB diagnosis	86 (48.6)	150 (84.7)	236 (66.7)
Mode of TB transmission	99 (55.9)	151 (85.3)	250 (70.6)
Procedure for correct diagnosis of TB	113 (63.8)	133 (75.1)	245 (69.5)
Mentioned that TB is preventable	71 (40.1)	99 (55.9)	170 (48.0)
Mentioning 1 preventive measure against TB	42 (23.7)	50 (28.2)	92 (26.0)
Mentioning "isoniazid" as a TB drug	2 (1.1)	17 (9.6)	19 (5.4)
Mentioning "ethambutol/isoniazid" combination	177 (100.0)	1 (0.6)	178 (50.3)
Duration of TB treatment	79 (44.6)	38(21.5)	117 (33.1)
Consequences of not completing TB treatment:			
Fatal outcome	49 (27.7)	50 (28.2)	99 (28.0)
Disease complication	5 (3.4)	2 (1.1)	8 (2.3)
Relapse of disease	2 (1.1)	5 (2.8)	7 (2.0)
Non-recovery	43 (24.3)	82 (46.3)	125 (35.3)
Develop drug resistance	38 (21.5)	25 (14.1)	63 (17.8)
Remain infectious	9 (5.1)	5 (2.8)	14 (4.0)
HIV infected case will develop TB	19 (10.7)	50 (33.9)	79 (22.3)
Total patients	**177 (100)***	**177 (100)**	**354 (100)**

* Figures in brackets are percentages

It can be noted from Table 2 that quite a good number of respondents from OPD department and DOTS clinic (93%) knew that TB can be treated: this was a positive

high level of awareness towards control of the disease. Likewise, the fact that more than three quarters of TB patients in the study could mention at least one sign of the disease was a good sign, since it implied that such patients could seek early treatment for the disease.

The correct signs and symptoms of TB which were expected to be mentioned by the patients included chronic cough, night sweats, loss of weight, chest tightness, chest pain and blood in sputum . However, respondents performed generally very poorly on aspects of consequences of not completing a TB treatment. Among DOTS and OPD respondents, 2.3% were not aware of TB complications, relapse of disease (2.0%) or developing drug resistance (17.8%) and thus still they could remain infectious (4.0%) to others in the community. This can have a negative impact on the prevention and control strategy of the disease. Such patients were likely to develop the tendency of stopping treatment once they feel better after some days of taking TB drugs. Meanwhile TB patients least know the combination drug of ethambutol/isoniaze as only one patient mentioned it.

Further analysis was performed on the results of the responses from the 18 questions. The responses were then used as indicators in a combined form to provide an overall measure of the level of knowledge on TB. The level of knowledge was then graded as "Good", "Average" and "Poor or low" depending on the number of correct responses given by the patients out of 18 points based on the 18 questions (Table 3).

The criterion used in grading level of knowledge was as follows:

1) High knowledge: 15-18 points
2) Average knowledge: 9-14 points
3) Poor knowledge: 0-8 points

Table 3: Overall assessment of knowledge on TB among patients

Level of knowledge	Number of patients (%)
High	93 (26.3)
Average	184 (52.0)
Poor	77 (21.8)
Total	**354 (100)**

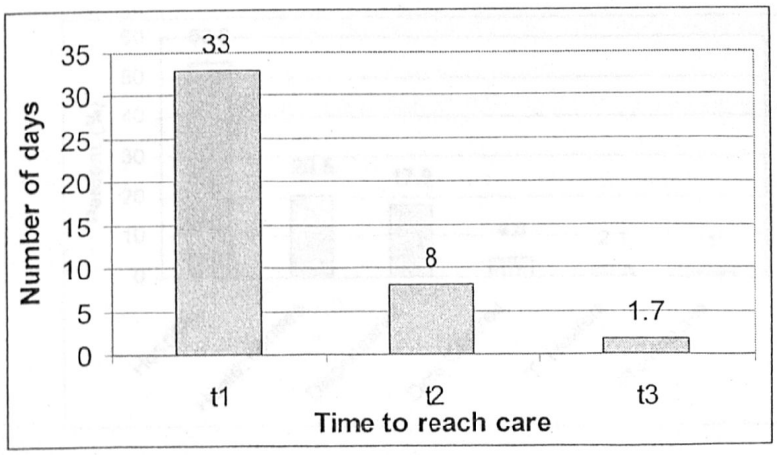
It can be noted from the Table 3 that, using the above scale of assessment, 26.3% the respondents had high knowledge, while 52% of the respondents were in the category of those with average knowledge on TB. However 21.8% of the respondents had poor knowledge level of TB disease.

These knowledge levels could be related to patient's tendency in delaying to seek care at the health care facility, this can be related to 61.7% of the suspected patients of having TB who reported late for treatment. This has also an impact to health seeking behavior as it was seen in this study that 2.1% of patients has seen traditional healers and 1% bought drugs by themselves at the pharmacy shops.

3.4 Delay in reporting for treatment among patients with chronic cough

The time taken between a patient suspecting to be suffering from tuberculosis and seeking for treatment was used to assess delay in reporting for treatment. The total number of patients suspecting to be infected with tuberculosis was 128 (36% of the study sample). A patient was declared to have reported late for treatment if the duration between seeing a symptom and seeking for treatment was more than three weeks (21 days) for that patient. With this operational definition of late reporting for treatment, it was found that 79 (61.7%) out of 128 patients suspected of having TB reported late for treatment. Otherwise, the duration between suspect of onset of symptoms and seeking treatment for all the patients ranged from 1 day to 365 days, with a mean of 33 days. This means that the average time taken by the patient to reach care was 33 days from the time of starting symptoms to the time care was sought. The average was 8 days from the time of first contact with a health care provider to the time diagnosis was made while it was on average 1.7 days from diagnosis to treatment (see Figure 3).

Figure 3: Average number of days taken to reach care by category of care



3.5 Chronic cough Patients referred to DOTS

Patients were classified in terms of those with chronic cough and those without chronic cough. A patient was known to have chronic cough if one had persistent cough for more than 3 weeks or blood in sputum. It was found that 195 patients (about 55%), out of the 354 in the study sample, had chronic cough while the rest (i.e. 45%) had no cough. It was found that 173 (88.7%) of the 195 patients with chronic cough had been investigated and diagnosed to have PTB through microscopic examination of sputa. These were thus referred to Temeke DOTS for anti-TB treatment after being confirmed microscopically as TB cases. The remaining 22 (11.3%) patients were referred to DOTS clinic before being screened for sputum microscopic examination and diagnosis.

Patients were asked if they had been referred for DOTS to other health facilities apart from Temeke hospital. Overall, 56 (28.7%) patients had been referred before, with 33 males (59%) and 23 females (41%).

Figure 4: Place of first contact with health care providers

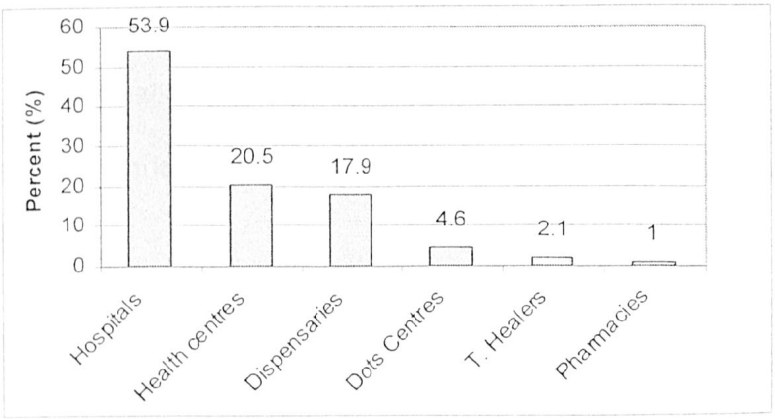


Figure 4 above shows the pattern of respondents' first visitation to healthcare providers after the perceived symptoms. It was shown that most of the respondents (53.9%) first visited the hospitals for care while 20.5% visited health centers and dispensaries (17.9%) for care. A small proportion of respondents was shown to visit traditional healers (2.1%), DOTS centers (4.6%) and pharmacies (1%).

Figure 5: Proportion of patients by type of delay

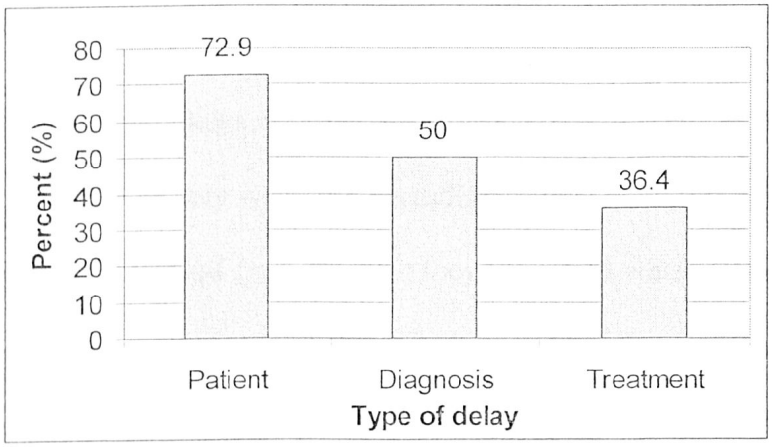


Figure 5 shows delay categories and percent of patients in each category. According to the definition of delay used in this study, 72.9% of the respondents delayed to seek health care (t1). In the diagnosis delay category, 50% of the respondents delayed in getting diagnosis (t2) while 36.4% of the respondents getting treatment after the diagnosis was made.

3.6 Perception about delay.

The respondents were asked about delaying to seek care at some stages in accessing care since first experienced the first symptoms. Of the 354 respondents, 164 (46%) admitted that they were delayed to seek care at some stage. Most of the respondents (93.9%) belived that they delayed mostly at the stage between onset of symptoms and the time they decided to seek health care. Most likely patients decide and could be triggered to seek health care when they at last feel pain or discomfort related to the infection such as chest pain from chronic cough.

However 4.3% of the respondents revealed that they delayed to seek care at the moment they sought care to the time they were told what disease they were suffering from. Also it was shown that 1.8% delayed from the time they were told what they were suffering from to the time of receiving treatment. Table 4 shows respondents who perceived they delayed to seek healthcare service while actually they were delayed. This was statistically significant in this study (p=0.00024).

Table 4: Actual Patient delay by perceived delay (t1)

Perceived Delay	Actual Delay		Total
	Yes (%)	No (%)	
Yes	62(72.9)	23(27.1)	65
No	17(39.5)	26(60.5)	43
Total	**79(61.7)**	**49(38.3)**	**128**

P=0.00024

Table 5 shows social economical and demographic factors and their influence to Delay in seeking care. In this study transport was among the factors that were seen to delay respondents to seek health care services. Most of the respondents (63.5%) walked to health providers while 56.25% used motorcar and bicycles. However this finding was not significant (p=0.3359). When the respondents were interviewed about their awareness concerning TB treatment, it was shown that a high proportion of them were knowledgeable (66.7%).However the majority of them delayed to seek health care services indicating that knowledge is a necessary but not sufficient factor to influence care seeking in TB. The average proportion of those with no knowledge seemed not to delay to seek care once needed (29.4%). Statistical test was significant in this study concerning knowledge and delay to seek care. (p=0.0033).

Table 5: Delay by Demographic – Social economical characteristics

Transport	Delay		Total
	Yes (%)	No (%)	
On foot	61(63.5)	35 (36.5)	96
Bicycle/motorcar	18(56.25)	14(43.75)	32
Knowledge			
Yes	74(66.7)	37(33.3)	111
No	5(29.4)	12(70.6)	17
Occupation			
Employed	39(61.9)	24(38.1)	63
Not employed	40(61.5)	25(38.5)	65
Education			
Low	16(55.17)	13(44.82)	29
Medium	55(65.47)	29(34.52)	84
High	8(53.33)	7(46.67)	15
Total	**79 (61.7)**	**49 (38.3)**	**128**

Categorically, peasants, house wives, and all who were not employed were included in Unemployed group(61.5%).the rest were business men and women ,and formal employed people, who collectively formed Employed group (61.9%). Findings showed that despite varied economic status and job description, being employed or not employed was not significant associated with delay to seek care at the healthcare centers (p=0.7631).

Educational status among the respondents was categorized as low (standard one to eight), medium (form one to four) and high (form five to college) levels of education. Findings showed that most of the respondents had average (medium) level of education (78.8%), the rest low (12.4%) and high (8.8%). However education level was not associated with delay to seek care among the respondents (p=0.485).

CHAPTER 4

DISCUSSION

This study has examined whether there is delay in care seeking for PTB and associated factors.

In this study, factors that contributed to delay for treatment among TB patients were (1) Availability of knowledge of TB transmission. (2) Inappropriate health care seeking behavior (3) and stigma resulting from knowledge of the association of TB and HIV.

A number of studies have revealed that delay in getting appropriate care of TB may lead to adverse effects on the patients, their families and the society as a whole. Therefore, understanding what proportion of symptomatic TB patients delay in seeking or accessing care and why they do so may prove crucial for the design of appropriate intervention. (Aschl et al, 1998), (Long, 1999)

Knowledge has been an essential component of self-care. In this study most of the patients seemed to know that, TB as a disease can be treated and that knowledge concerning the risk of TB is important in preventing its spread, and seeking appropriate health care. Despite this high level of knowledge there was delay in care seeking. Lack of community awareness of the risk posed by the presence of a sputum positive pulmonary case may lead to failure to control TB (Bhat et al, 1999). Although some studies by (Lewis et al, 2003), (Leinhardt et al, 2001), (Needham et al, 2001),

(Wandwalo et al, 2000), (Madebo et al, 1999), (Rajeswari et al, 2002), (Steen et al, 1999) have recommended awareness rising among the general population toward TB disease, this study found that knowledge about TB disease did not reduce the delay in care seeking for TB. It was found that respondents with knowledge about TB disease had a longer delay in seeking care than those with no knowledge about the disease. This scenario could be attributed to the fear of being known to have the disease by other people in the community. Those with high knowledge may also know that TB is associated with HIV. Therefore, such knowledge may bring about stigma, which may cause delay in seeking care.

Lack of knowledge as an independent variable was found to be associated with significant delay in seeking care for TB as reported in Ethiopia (Demissie et al, 2002). However, such association was not found in Lusaka (Faussset et al, 2002). In the Lusaka study, awareness programmes provided general information about TB and assumed that patients would be encouraged by such information to seek care early. However, the study found that having this information cannot predict occurrence of delay.

Furthermore, it is clear from the experience with the HIV epidemic that knowledge of risk does not necessarily translate into appropriate behavioral change. Since the general level of understanding of TB was found to be average in this study, it is possible that those with high or low level of knowledge of TB who did not get TB disease or did not

seek care from public health services (NTLP recognized centers), may have been missed in this study. The awareness raising programmes aimed at minimizing the transmission and severity of TB disease may also reflect a coping mechanism, rather than undesirable effects of lack of information necessary for TB control. Consequently, health education efforts should not overstate or over-dramatize the issues, as these could reinforce stigma and denial, thereby further delaying health seeking for care from the public health facilities. In Lusaka, where patients' perceptions about the health services were found to be greatly associated with delay, poor perception of patients about the cause and the severity of disease, its economic, health and social impact were found to be significantly associated with longer delay (Fausset et al, 2002).

However the study in Manila Philippines (Auer et al, 2000) reported no relationship between perceived cause of TB and delayed health seeking. In this study, it was found that patients had low awareness about possible implication of failure to complete TB treatment and related adverse effects of not completing TB treatment; which could probably help to explain delay for TB treatment among some of the patients. Like wise, there was low awareness about the relation between TB and HIV/AIDS. Few patients admitted that they were aware about the possibility of HIV infected case developing TB. This lack of awareness could be among the factors that promote delay in seeking care for some of the patients.

This study found more than a half of patients who were interviewed had consulted two or more types of health facilities for seeking care from the time they recognized the symptoms of chronic cough to the time they were diagnosed with TB and treatment started. This finding resembles a situation reported in Bombay, (Nair et al, 1997), which reflected a process of multiple and varied health seeking, and treatment demand and their implication for delay in getting appropriate diagnosis and treatment. In the current study, patients who had visited two or more types of health facilities for seeking care were at great risk of being delayed to receive proper investigation and diagnosis of the disease in Temeke Municipal hospital.

Moving from one-health facility to another was reported by 180 out of 195 patients who had been investigated for TB, of whom 177 (91%) received some form of treatment not specific for TB. From the findings of this study, it is clear, that the majority of patients expressed the outcome of treatment as improved (78%). These results are a clear indication of how patients could be delayed in seeking appropriate health care in different low-level health care facilities just because of temporary improvements. It is possible therefore that, those who reported improvement, it was for a short time because they might have reported to Temeke municipal hospital again for further investigation and management. Lack of skilled health care personnel and appropriate diagnostic facilities could be significantly associated with delay in diagnosis and starting of treatment. Also it may increase the potential pool of patients' likelihood of developing

multidrug resistant TB, and often increase the costs to the patients moving from one health facility to another.

Studies in other countries have shown that patient delay for diagnosis and treatment at the health facilities involve a varieties of factors ranging from host oriented, environmental and behavioural in seeking treatment (Lienhardt et al, 2001). A study done in Ethiopia showed that there was no significant difference between social economic status for those who delayed and those who came earlier to the health facility. Another study in Urban, Zambia also found that diagnostic delay was associated mostly with being a women of low education visiting private or traditional health provider (Needham et al, 2001, Madebo et al, 1999). The authors also found that decentralization of public health TB care and improved integration with private sector providers was helpful in reducing diagnosis delay.

Lack of awareness was also cited in a study done in South India which showed less than half of the respondents were not aware if they were delayed to seek health care for TB with more men than women being unaware. Furthermore, the study revealed that public awareness of chest symptoms of TB was not adequate. The implication of such lack of awareness is to delay health seeking (Rajeswari et al, 2002).Studies in Thailand and Nepal showed that women had a longer delay time than men, which could be attributed to having negative HIV test results, having no health insurance, borrowing money for treatment, and not making previous visits to Hospital,. Also women were seen to seek

care from traditional healers more than men as well as at the public health care facilities (Ngamvithayapong et al, 2001, Yamasaki-Nakagawa et al, 2001, Lonnroth et al, 1999, Artet et al, 2003, Lewis et al, 2003, Wandwalo et al, 2004, Long et al, 1999).

In this study it was shown that 79 out of 128 patients who had suspected of having TB reported late for treatment with a mean duration of 33 days between onset of symptoms and the time of care seeking. Other studies have found higher mean durations of 78.2 days (Demmissie et al, 2002), 8.6 weeks (Needham et al, 2001), 7 weeks (Liam et al, 1997) and 2.3 –3.3 months (Yamasaki-Nakagawa et al, 2001). These differences could be explained by differences in the provision of TB services in different countries as well as differences in the levels of perceptions about stigma.

Delay has also been associated with hospital procedures such as examinations and investigations involving microscopy and sputum cultures, which could be reduced by rigorous training of health care staff (Lawn et al, 1998, Liam et al, 1997). The observed long patient delay could be related to factors such as stigma of being known to have the disease and that of being suspected of being HIV infected as well. The finding in our study that respondents with high knowledge of TB were the ones who reported longer delays than those with moderate or poor knowledge could be explained by this observation.

This study also found that diagnosis delay affected 50% of the patients. This is part of provider delay and can be explained by delays in sputum investigations by laboratory staff. Some patients may have been referred for the investigation due to poor set up of health facilities that do not have the necessary equipment or skilled staff. Results showed that 53.9% of the patients were seen at hospitals as their first point of contact with health care providers. This situation makes hospitals congested and increases delay in both diagnosis and treatment. Health centers and dispensaries should be equipped and staffed adequately so as to provide the necessary care for those who report there.

The study also showed that 56 patients who were referred for DOTS also had been referred to other health facility before attending Temeke hospital, indicating that some patients spend a lot of time being referred from one facility to another and hence cause delay in getting care and treatment for TB. This observation is similar to what other studies had reported in Malawi (Harries et al, 1997) and in South India (Banerji, 1995).

A high proportion of patients 72.9% were observed to have delayed to seek care (patient delay) while 50% delayed in getting correct diagnosis (diagnosis delay). Only 36.4% delayed getting treatment for TB. These findings indicate that patient delay is the most important factor in case finding and hence in the control of tuberculosis in the study area. What may influence patient delay are the other factors of transport, health seeking behaviour and stigma.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS:

CONCLUSION:

This study has shown that 72.9% of the TB patients delayed to seek health care for more than 21 days. Among the factors playing a significant role in delayed health care seeking is patient delay, which is coupled with lack of transport, inappropriate health seeking behaviour and stigma.

The study found that it is the people's perception about cause and severity of the disease as well as, economic and social factors that determine their decision to seek health care, rather than knowledge about the disease.

The study found that 72.9% of the respondents delayed to seek health care. The most important reason for delay to seek care was lack of transport. Also those with high level of knowledge were found to have delayed to seek care compared with those having a low level of knowledge.

RECOMMENDATIONS

The current study found that the main thrust of delay is with patients, largely due to lack of awareness about TB, causes, symptoms, transmission and treatment. There is need therefore to raise awareness through different means and the media for individuals

and communities to recognize TB symptoms and to take action toward treatment promptly.

Education programmes to improve health seeking behaviour should be put in place. Most patients reported visiting hospitals for care as their first point of contact with health care personnel. This was a good sign, which shows that patients know the importance of hospital care. However, efforts should be made to improve health care services so that provider delay is minimized.

The Temeke Municipal Council should improve their record keeping system to record patients' correct physical addresses, their next of kin and influential community leaders for them to encourage and support patients to adopt good health care seeking behaviour.

The general population must be mobilized to participate in TB control activities, including community organizations. It is important to make clear to the population that tuberculosis is curable and that there is no discrimination or stigma attached to the disease. Community participation is essential to encourage individuals with symptoms suggestive of TB to present themselves to the health services for diagnostic examination and to ensure that tuberculosis patients continue to take their treatment until they are cured.

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Appendix A

QUESTIONNAIRE (ENGLISH VISION)