Health seeking behavior, practices of TB and access to health care among TB patients in Machakos County, Kenya. A cross-sectional study

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Abstract

Despite efforts to implementation of the DOTS programme in Kenya since the year (1993) and achieving 100% coverage by the year 1996; new TB cases continue to emerge in communities, a significance of TB transmission. The success of the DOTS programne require total adherence to treatment for those infected with TB and appropriate control measures as stipulated in TB treatment guidelines, trained manpower to manage the infected patients and surveillance. The main objective of this study was to examine the health seeking behavior of TB patients, practices of TB and access to health care. A cross- sectional survey of TB patients was done in Athi-River, Machakos level 5 and Mutituni TB treatment health facilities in Machakos County. A pre-tested self administered questionnaire/ interviews was used to collect data. The data was analyzed by use of statistical package for social sciences (SPSS) version 16. Pearson Chi-Square analysis was used to determine the relationships between variables. Level of significance was fixed at 0.05 (p=0.05).The results of this study reveal TB is affecting more males than females (60.4%).Most of the TB patients are young below 40 years accounting for (71.8%), are poor and unemployed (65%).When the TB patient realized they were sick, most of them (81.4%) sought informal remedies from private practioners or self medicated. This delayed early opportunity to seek heath care for more than one month by (82%) of the respondents. Failure of the informal treatment and unbearable pains in advanced disease forced the majority (96.8%) to seek health care in designated TB treatment facilities. There is secrecy in TB status disclosure as (75.5%) declined to openly disclose. For those who disclosed (78%) was to a selected family member mainly to seek assistance (90.7%). Across age groups, educational level, marital status, disclosure of TB status was of no statistical significance p=0.462 and openness of status p=0.112 respectively as the majority remained secret. Health education received by (52.8%) in the TB clinics was observed to significantly influence clinic attendance p=0.014 and adherence to treatment p=0.008 as 78.5% attended regularly and 85.5% adhered respectively. Treatment in public facilities is free with the majority (89.9%) reporting attendance. TB patients care in the community is mainly by family members (74.8%), there is no follow up by heath workers and social support group is minimal at (11.4%).The ministry of health needs to address control measures by initiating strict surveillance of TB, initiate community education on best practices of TB and to distigmatize the disease.

Key words: Health seeking behavior of TB patients, practices of TB and access to health care in Machakos County

1.0 Background information

Tuberculosis (TB) is second only to HIV/AIDS as the greatest killer worldwide due to single infectious agent Mycobacterium tuberculosis and occasionally by Mycobacterium bovis and Africanus bacteria (WHO, 2014).The global tuberculosis 2013 report 9 million people develop TB every year and 3 million are missed by health systems. The disease is transmitted through air mainly by coughing or sneezing. Tuberculosis symptoms include coughing, night sweats, fever, loss of appetite and weight loss. If not treated, each person with active TB infects on average 10-15 people every year. Globally failure to complete TB treatment and mismanagement of medicines lead to 1.4 deaths every year (WHO, 2012).Currently, 450,000 multidrug resistant TB patients (MDR-TB) have been diagnosed with virtually all the countries reporting cases of (XDR-TB),the extensively resistant tuberculosis cases (WHO,2012).

Sub- Saharan Africa carries the greatest proportion of new TB cases per population with over 225 cases per 100,000 population in the year 2012.The TB burden increased with the advent of HIV/AIDS in the early 90's. People infected with HIV are 21-34 times likely to be infected with TB.

 Kenya currently with a population of 43 million people continue to shoulder the burden of TB with approximately 132,000 new TB cases and incidence rate of 142 new sputum smear positive cases per 100,000

population each year (WHO, 2013).The reported MDR-TB cases in 2012 were 1,344, laboratory confirmed 225 and 202 started on treatment. The country is ranked 13 th among the 22 World countries with high TB burden that collectively contribute about 80% of TB cases. Tuberculosis is treatable, can be prevented and controlled if the internationally recommended strategy for TB treatment, prevention and control (DOTS) recommended measures are applied and adhered. The DOTS package in TB treatment is to ensure early case detection and diagnosis of TB through quality assured bacteriology, provision of standardized treatment with supervision and patient support. In addition in this package are effective drug supply, management, monitoring of performance and impact, and adequate financing through political commitment (WHO, 2013). In Kenya, the most affected are mainly the young and economically productive in age groups 15 – 45 years which has caused a significant reversal of the benefits of good health and socio economic development in the communities (MOH, 2006). Further the emergence of HIV/AIDS has further complicated TB control measures due to stigma that is associated with the epidemic. In the year 2012, Kenya recorded 35,837 TB/HIV positive patients. An estimated 48% of new TB patients are co- infected with HIV and 50%-60%) of the TB infected patients in Kenya are HIV infected (WHO, 2013; MOH, 2007). Tuberculosis is infectious and its transmission is sustained where there is misconception and poor practices in regard to effective prevention, treatment and control. The current efforts made in Kenya in TB prevention and control have so far been positive but little information is available on health seeking behavior of TB patients , practices of TB and access to health care which will be addressed in this study.

1.1 Statement of the problem

 Despite the Directly Observed Treatment Short Course (DOTS) success in new case sputum smear and positive detection rate that has reached the WHO target of 70% and 72%, respectively, and treatment success rate of 85% since the year 1997, TB transmission continues to be witnessed in Kenya. The (WHO, 2012) report MDR-TB cases in 2012 were 1,344, laboratory confirmed 225 and 202 started on treatment, an indication of TB that is resistant to treatment is spreading in communities. The TB patients, not on treatment continue to transmit the infections especially to the close contacts, notably house hold associates, in TB treatment facilities and in communities at large. The documented information in studies on the current initiatives on TB treatment, prevention and control in Kenya is available but little effort has been made to quantify the health seeking behavior of TB patients, practices of TB and access to health care that will be addressed in this study. To fill in this information gap, factors known to sustain TB transmission in communities such as the duration taken before initiation of treatment, acceptance of TB status and reasons of seeking health care, TB status disclosure, openness of one's TB status which is key in TB prevention, treatment and control through surveillance will be examined. In Machakos County, between the years 2005-2009, an average of 3,000 new TB cases was continually diagnosed. This pose a health risk to the study community and other communities living in other Districts as TB is air borne, spreads very fast is infectious, this require urgent control measures.

2.0 Literature review

2.1 Historical background of Tuberculosis (TB)

The WHO Global TB (2013) report tuberculosis is still a major health problem that killed 1.3 million people in the world with 8.6 million who developed the disease in the year 2012. Among the TB deaths, 320,000 were HIV-positive. Tuberculosis (TB) is the leading killer of people co- infected with HIV/AIDS, the highly stigmatized disease the world over (WHO, 2009; 2010). TB is transmitted through air by in prolonged close contact. The TB germs spread from person to person through cough, sneeze or spit that propel them to the air that is inhaled by the uninfected. If not treated, each person with active TB infects on average 10-15 people every year (WHO, 2009). The WHO estimates by the year 2020 there will be 1 billion people infected with TB bacillus, 200 million people will develop clinical tuberculosis and 35 million will die from the disease if preventive measures are not instuted,a, a prediction that needs to be closely monitored. Reports indicate Multi-drug resistant tuberculosis (MDR – TB) has become a major problem in several countries in Europe, Africa, Asia and it threatens the rest of the world (UNAIDS, 2005).Studies have consistently shown that TB is transmitted in environments of poverty, inadequate ventilation, overcrowding and malnutrition WHO, 2010). It is estimated TB will rob the world poorest countries of an estimated 1-3 trillion US dollars over the next 10 years. Reductions of TB incidences require improvement in socio-economic conditions that lead to access of quality care and its rational use (WHO, (2010). In the developed world, successful TB control programmes have emerged where committed policy makers, public health and communities develop well defined strategic plans, demonstration areas and trained manpower inputs (World Bank, 2007). MDR-TB and XDR-TB have emerged in countries with no stringent measures of TB control due to unsatisfactory treatment success rates, general lack of infection

control measures, outdated manuals and guidelines, inadequate labs, weak surveillance of drug resistant TB services, limited general access to TB services and inadequate human resource (WHO, 2009). In order to remove the threat of TB, communities need to be empowered through awareness of primary issues and healthy behaviors. The TB epidemic cannot be addressed without involving those most affected by the disease, and the resulting consequences of their sickness (WHO, 2010).The communities can help provide practical solutions to the problems many people face when they fall ill and need diagnosis and proper care as well as lead to more interventions by health care professionals (WHO, 2010)

Sub- Saharan Africa carries the greatest proportion of new TB cases per population with over 225 cases per 100,000 population in the year 2012 (WHO,2013). The TB burden increased with the advent of HIV/AIDS in the early 90's. People infected with HIV are 21-34 times likely to be infected with. TB. Tuberculosis remains an important but neglected cause of adult and childhood morbidity and mortality in the African region (WHO, 2004). The epidemic has reached emergency proportions despite significant efforts by member states in collaboration with WHO, other donor and technical partners to implement the internationally recognized DOTS programme (WHO, 2005). An estimated 1.6 million new cases and 600,000 deaths occur annually in the region that is also ranked 9th out of the 22 global TB high burden countries in the world responsible for 80% of total global TB burden (WHO, 2010 a)

Africa which is home to 11% of the world's population has a disproportionate burden of tuberculosis as the continent reports more than a quarter of the global burden of TB (WHO, 2004). Increase of TB in Africa is in line with the spread of HIV/AIDS scourge which is the single most important factor contributing to the disease incidence (WHO, 2010). In Africa more than 5 million of the 13 million Africans now living with HIV will develop TB and more than 80% will die early deaths (KEMRI, 2000).

The HIV epidemic is now considered the most important factor driving the TB epidemic that is threatening to overwhelm even effective TB programmes in the region. It is estimated that about 30-50% of the newly diagnosed TB cases are also HIV positive and 40% of all HIV deaths in the region are due to TB (WHO, 2004; WHO,2010 a). Tuberculosis has social and economic burden on ill people and their families. The poor people are especially vulnerable to TB because of their underlying health status, diverse living conditions and their limited treatment access.

Kenya started the implementation of the DOTS programme since the year (1993) and achieved 100% coverage by the year 1996. Despite this, the country is ranked 13 [th] among the 22 World countries with high TB burden that collectively contribute about 80% of TB cases. The global estimates show the country has approximately 132,000 new TB cases and incidence rate of 142 new sputum smear positive cases per 100,000 populations (WHO, 2009). According to the latest surveillance and estimates of TB incidence, Kenya is the first country in Sub-Saharan Africa to have achieved the global targets for both case detection and treatment success. In 2007, the DOTS case new sputum smear and positive detection rate reached WHO target of 70% and 72%, respectively, and treatment success rate of 85%. Tuberculosis is mainly affecting the young and economically productive age groups 15 – 45 years and has caused significant reversal of the benefits of good health and socio-economic development in Kenyan communities (MOH, 2006). Further the emergence of HIV/AIDS has further complicated TB control measures due to stigma that is associated with the epidemic. The fear of association of the two diseases has been reported in studies in Kenya to cause delay to seek treatment for those infected with TB (Wesonga, 2002., Ayisi,2011., Mutinda, 2013). An estimated 48% of new TB patients are co- infected with HIV and 50%-60%) of the TB infected patients in Kenya are HIV infected (CDC, 2007; MOH, 2006., WHO,2010).The WHO recommend control measures of early and accurate diagnosis, immediate accurate treatment which is supported and supervised so that drugs are taken for the appropriate duration of time. This should be complemented with awareness creation of primary issues of TB and healthy behaviors in communities and those affected (WHO, 2013).

3.0 Research Methods

3.1 Study site and respondent selection

Machakos County was randomly selected for this study. Like the rest of the 47 Counties in Kenya, new cases of TB continue to be witnessed. The study was carried out in Central and Athi River Divisions of Machakos County in Kenya, formally in Eastern Province. Cluster and simple random sampling by lottery was used to select the Divisions (clusters). To achieve this, a list of all the 12 Divisions of Machakos County was made and a simple random sampling by lottery was done that selected Athi-River and Central Divisions. The two Divisions have three major TB health treatment facilities namely; Mutituni, Machakos Level 5 Hospital and Athi-River which

were purposely selected for the study. Tuberculosis patients were selected from these TB treatment facilities where the TB patients go for treatment. The 2009 census in Kenya show, Machakos County is inhibited by 293,434 persons with a growth rate of 2.0. Poverty level stands at 60%, the area has unreliable rainfall with subsistence farming as the main source of income (KNBS, 2009).There is 160 health facilities distributed in the 12 Divisions that deal with preventive, promotive and curative services.

The interviews were held with 316 TB patients in the TB clinics, whose ages were 18 years and above and those who consented. Selection of the respondents was done mainly during clinic days by use of simple random sampling. The respondents who met the study criteria filled in the questionnaires. To achieve this, ballot papers were prepared and written yes or no, folded then put in a container and mixed thoroughly. The TB patients who entered the treatment room and who met the study criteria were informed of the nature and purpose of the study. They were then asked to pick a ballot paper that was prepared. This ensured an equal chance of representation or inclusion. Only the respondents who picked papers written yes were recruited for the study and were given questionnaires to fill. To ensure no repetition of interviews, patients TB/clinic number was marked and oral confirmation of identity by the patient was accepted, data was then collected. The procedure was followed for the rest of clinic days until the required sample of 316 respondents was achieved. There are two main TB clinics days in a week. In each clinic day an average total of 30 patients were recruited, giving a total average of 60 patients per week. The survey was executed in the month March and April in the year, 2011 and was completed in 6 weeks and 2 days.

3.2 Interviews

The questionnaires had closed-ended questions that were analysed quantitatively and open ended questions that permitted free responses that gave qualitative information and reported verbatim. Preparation of the study tool was done in English and translated verbally to Kiswahili and the local Kamba language where necessary.

3.3 Ethical clearance

The study protocol was done after approval by Mt.Kenya University; clearance was given by the Ministry of Higher education, Science and Technology, Ministry of Medical Services and the Medical Officer of Health, Machakos County.

3.4 Data analysis

Data analysis was performed using the Statistical package for Social Sciences (SPSS) version 16.0 for descriptive statistics and Pearson's Chi- square tests to test relationships.

4.0: Results

4.1: Socio-demographic and economic characteristics of the study respondents

Out of a total 316 TB patients who consented to the interview, 60.4% (n=191) were males and 39.6% (n=125) females .Their age- range was 18-78 years, mean age of 35 years, median age of 32 years and standard deviation (SD) 11.5 respectively. The distribution show the TB patients to be in age range within (19-40) accounting for (66.7%), the peak age was between 31-35 years 24% (n=76) and those above 60 years were few 4.4%. (n= 14) Level of education attainment was mainly primary 43% (n=135), followed by secondary 39.3% (n=124) with few having attained mid level and university education 12.9% (n=40), no formal education 5%) (n=16). A total of 55.3% (n=175) were employed with 42.5% (n=134) not in employment. Among the 175 employed, 46.9% (n=149) were self employed in low paying agricultural activities and 22.6% (n=72) were casual laborers. Seven accounting for 2.2% were idlers. The permanently employed were 18.2% (n=58) mainly teachers and clerical officers. Distribution of income show 66.7% (n=211) earned below Ksh.4000 and 33% (n=105) were above. The community is predominantly of Christian faith accounting for 90.6% (n=286), the rest are Muslims and other faiths.

4.2: Health seeking behavior among TB patients

4.2.1: Action taken when the respondents were sick

With regard to action taken after the respondents realized that they were sick, 50.9% (n=161) bought drugs, 24.6% (n=78) visited a private doctor, 3.4 %(n=11) bought herbal medicine, while (1.5% (n=5) visited a witchdoctor, and 59 (18.6%) visited a government health facility, 0.6% (n=2) did nothing .Figure 1.1
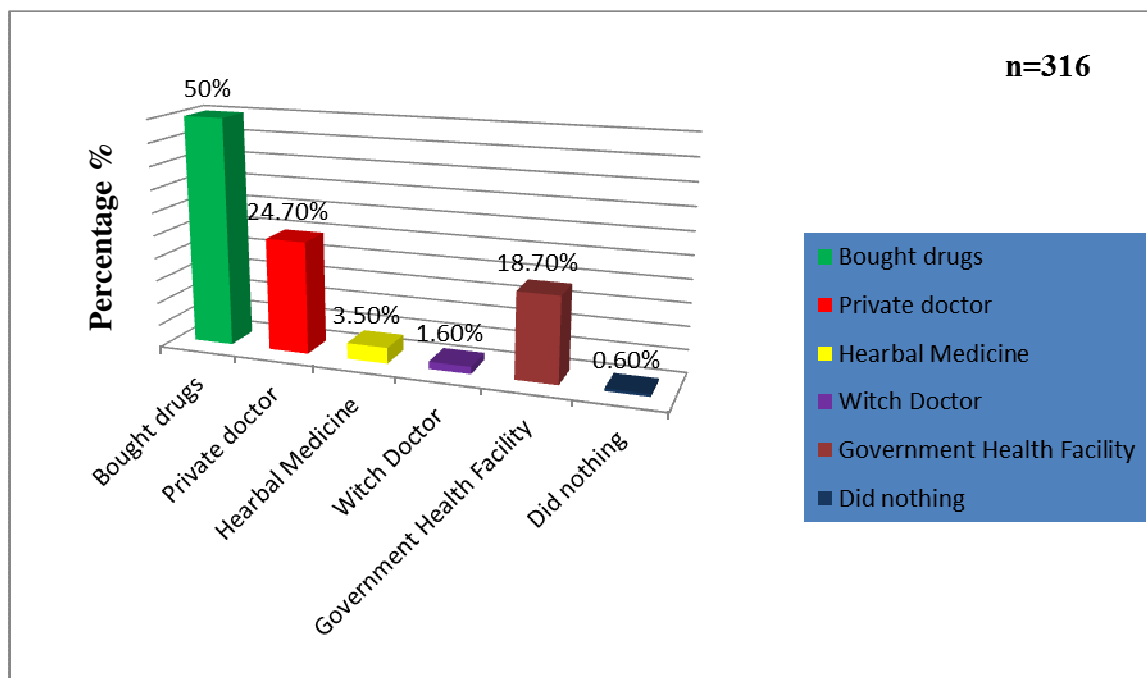

 Figure 1.1: Action taken by the TB patients when they realized they were   Sick

4.2.3: Duration taken by the respondents to seek treatment

The time taken to seek medical treatment by TB patients is as shown in Figure 1.2. The respondents who went to seek treatment in a duration of less one month were 18% (n=57), within 1 – 5 months 30.4% (96) above 5 months – 1 year 45.3 % (n=143) and more than 1 year (2.5 %(n=8), (3.8% (n=12) did not specify.
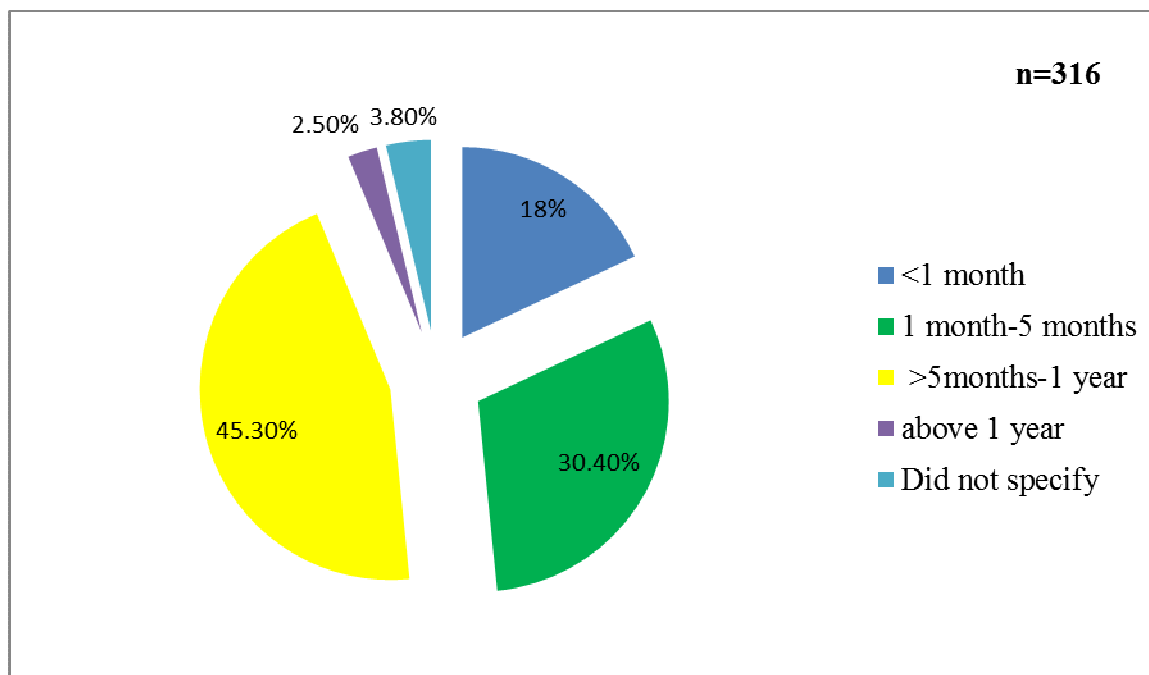
Figure 1.2: Duration taken by the TB patients before initiation of formal medical treatment.

4.2.4: Reasons to seek medical treatment

The reasons that made the respondents to finally seek treatment in the designated health facility show 35.4% (n=112) felt self medication was not working, 39.2% (n=124) were too sick to bear the pains, while 16.8% (n=53) were advised by relatives and friends to seek medical care, 5.4% (n=17) were forced to seek medical care while 3.2% (n=10) did not specify. Figure 1.3
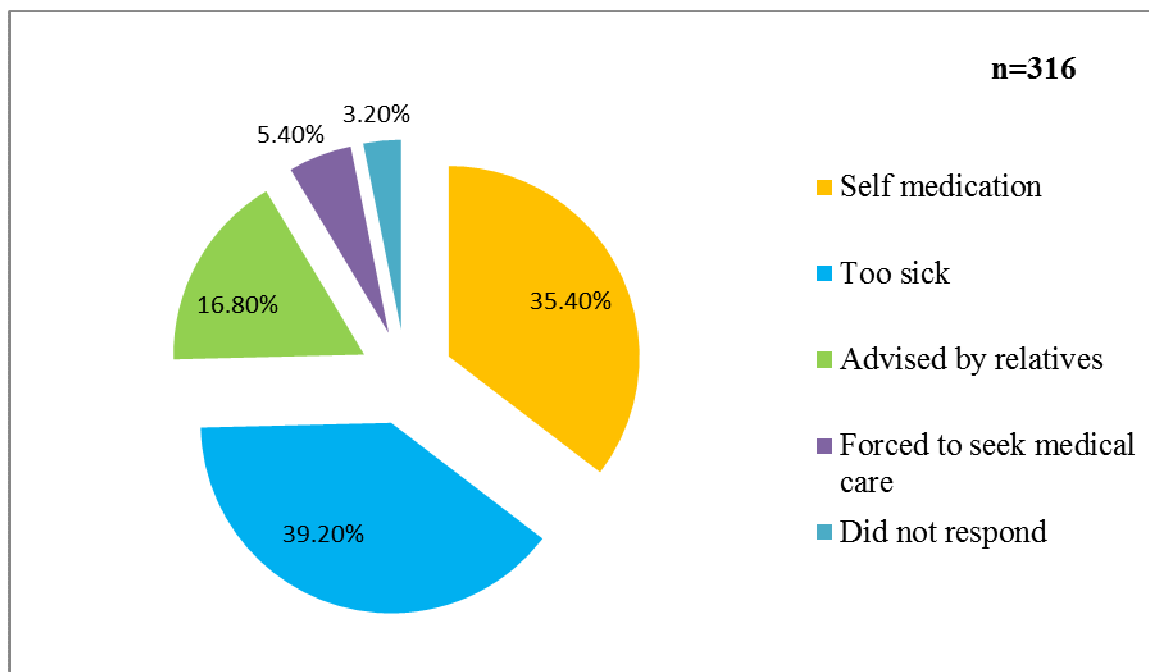

Figure 1.3: Respondents' reasons for seeking treatment at TB health facilities

4.3: Practices of TB by TB patients

On realization that the respondents had TB, 74.1 %(n=234) accepted TB status while 25.3% (n=80) denied. Among them 82.3 % (n=260) disclosed their status while 17.7% (n=56) did not. The disclosure was mainly to a selected family member 78% (n=203), with 22% (n=57) disclosing to others. The reason of this disclosure was mainly to seek assistance by 90.7% (n=236), while 9.3% (n=24) had other reasons. Only 24 %(n=77) openly disclosed TB status to others outside family, 75.6% (n=239) remained secretive as presented in Table 1

Table 1: Represents practices of TB by TB patients n=316

Practices	Yes	No
1)Accepted TB status	74.1% (n=234)	25.3% (n=80)
2) Disclosed TB status	82.3% (n=260)	17.7% (n=56)
3) Openly disclosed TB status	24% (n=77)	75.6% (n=239)
4) Disclosed status to seek assistance	90.7%(n=236)	9.3% (n=24)
5)Disclosure of TB status to a selected family member	78% (n=203)	22% (n=57)
6)Shared meals and utensils	65.5% (n=207)	34.5% (n=109)
7) Respondent's regular attendance to clinic appointment	78.5% (n=248)	21.5% (n=68)
8) Adherence to treatment instructions (taking of prescribed drugs)	85.8% **(n=**271) ,	14.2% (n=45)

4.4: Access to health care among TB patients

The TB patients who reported for treatment in the public health facilities received their prescribed drugs 87.7% (n=277), while the rest did not, citing various reasons. The treatment was free as indicated by 89.9 %(284) but a few report to pay. There was no reported follow-up of TB patients by health workers in the community 71.6% (n=224).The TB patient assistance in treatment was mainly from Family members 74.8 %(n=238), the rest were assisted in the community. The TB patients who belonged to a social support group were 11.4% (n=36%) and 86.7 %(n=274) had no support. The TB patients who received health education from health workers were 52.8% (n=167) and 47.2% (n=149) were not taught.

Table 2: Represents access to healthcare by TB patients n=316

Access	Yes	No	Others
1.Received prescribed drugs	87.7% (n=277)	11.4% (n=36)	0.9% (n=3)
2.Received free treatment in public health facilities	89.9% (n=284)	5.3% (n=17)	----------
3.Assistance in taking drugs by health workers in the community	- ------------	71.6%(n=224)	28.4% (n=92)
4.Received health education on TB from health workers	52.8%(n=167)	47.2% (n=149)	- ------
5.Family members support in TB treatment	74.8% n=238	2 4.8% (n=78)	0.4 (n=1)
6.Existence of TB patient support group	11.4% (n=36)	86.7% (n=274)	1.9% (n=6)

5.0 Discussion

5.1: Socio-demographic and economic characteristics of the study respondents

Out of the sample of 316 respondents who had TB, males were more than the females accounting for (60.4%) and females (39.6%) respectively. The male gender has been cited to be more infected with TB than females in other studies in Indonesia 54.6% and Nigeria 54.5% respectively (Mahedradhata *et al.,* 2008 and Umar *et al.,* 2012). Overall, the TB patients were within age range of 18-78 years with a mean of 35 years, median age of 32 years and standard deviation of 11.5years respectively.

The majority (71.8%) of the TB patients were aged between (18- 40) years. The study findings agree with the current data in Kenya that the majority of TB patients are within the age-group 15 – 44 years (MOH, 2006). Further this age-group is associated with the highest number that is co-infected with HIV/AIDS scourge in Kenya which stands at 40-50% (MOH, 2005; WHO, 2009)

 HIV infection weakens the immune system and cause quick progression to TB. In the study area, the data show 40-50% of patients reporting for treatment in the TB health facilities are HIV positive, an observation that concur with data in Sub-Saharan African countries that about (40-60%) of the TB patients are HIV positive (World Bank, 2010).

 Furthermore the TB patients group is within the identified (15-49) economically productive group in Kenya and therefore has a significant impact on socio-economic development in terms of care for the sick and loss of productivity. This is against the fact that the study community has (60%) of the population on the lower wealth quintile, earning less than one US dollar in a day (KDHS, 2008-2009). The finding is comparable to the findings in a study in Nigeria (Umar *et al.,* 2012) that TB poses tremendous burden in terms of time, finance and productivity to patients and their households. The observed ages represent a youthful population and a decline in the older generation at (4.4%) in Kenya.

5.2: Health seeking behavior among the TB patients

The study reveals when TB patients realized they were sick, the majority (81.4%) did not seek formal treatment in the designated TB treatment facilities. Further it was established most of them (75.5%) bought drugs or visited a private doctor; others bought herbal medicine or visited a witchdoctor. Only (18.6%) initiated formal treatment by visiting a health facility for proper diagnosis. Similar findings were observed in a study in Western Kenya (Ayisi *et al*., 2011) that most patients initially self- treated with herbal remedies or drugs from kiosks before seeking professional care. The findings further agree with a study in Tanzania (Hinderaker *et al.,* 2011) that TB patients from rural and urban settings sought traditional healers before initiation of formal treatment.

Initiation of self medication and others listed above which cannot be quantified are some of the factors known to delay formal treatment therefore worsening the disease process and risk of TB transmission.

Majority of the TB patients (78.2%) took more than one month and some even up to one year to begin formal treatment. In a DOTS implementation programme more than 30 days delay to initiate TB treatment is considered a prolonged period after onset of the TB symptoms (Mesfin *et al*., 2009). The findings agree with findings in a study that investigated reasons for delay in initiating treatment among TB patients in a DOTS programme in Ethiopia that nearly half of TB patients delay seeking health care at district health facilities while getting treatment from informal sources (Mesfin *et al*., 2009). Delay to seek health care enhance the disease progression, expose the contacts of the patients to risks of contracting the infection and complicates the treatment process. In a related study that observed delay to seek diagnosis among TB patients in Nepal, (Basnet *et al.,* 2008) agree with this study that delay to seek treatment have risks of transmission of TB, further suggesting identifying the reasons for delay in diagnosis and treatment is important to reduce suffering of patients. In addition, (Basnet *et al.,* 2011) suggest increasing public awareness of TB and expansion of the facilities with assured quality could be helpful to curb delay in diagnosis. In Vietnam (Huong *et al.,*2007) similarly observe delay to seek treatment by TB patients for an average of 4 weeks and observe, analysis of delay can indicate target group areas to strengthen the referral system.

The study further establishes most (96.4%) of the respondents were forced by various circumstances to seek health care. The circumstances were failure of self medication, too sick to bear the pains, advice by relatives and friends after worsening condition or were forced to seek treatment. This is against the information that (60.1%) of the respondents knew TB is curable before visiting the TB treatment facility and could have chosen the

earliest opportunity but ignored to seek early treatment (Mutinda, 2013).Health education was significantly associated with adherence to prescribed treatment p=0.008 as 85.5% of the respondents adhered. Few, 14.5% however skipped taking their prescribed medication and were treated by witchdoctors, medical workers outside hospital, self or abstained. Non adherence to the prescribed TB treatment poses great risks to develop multi- drug resistance TB (MDR-TB) or extremely difficult to treat TB (XDR- TB) that require other expensive measures of treatment to cure. In Kenya there were about 1,344 reported MDR-TB cases in 2012, with 225 cases laboratory confirmed and only 202 started on treatment (WHO, 2013).The TB patients who were not started on medication continue to spread the infection in the communities.

Similarities in factors posing challenges in the TB treatment facilities resulting to resistant TB were observed in studies in China (Guang Xue He *et al*., 2008).In China where drug resistance are nearly twice the global average, 10% of TB infected cases are resistant to treatment. The contributing factors to drug resistance was given as, inadequate use of antituberculous drugs in public hospitals, lack of supervision of treatment, absence of infection control measures and availability of TB drugs without a prescription

5.3: Assistance received by TB patients

The study further established 71.6% of the TB patients report no follow up in the community by health workers. This was observed to compromise surveillance of TB as recommended in the DOTS implementation programme. Assistance reported was mainly from family members 74.8% who have minimal knowledge on TB disease, the rest were self assisted 24.8% and 15.2% were assisted in their local churches. In a related study in Kenya (Ayisi *et al*., 2011) observed the family is influential in helping patients to seek care through economic support and in assistance to identify appropriate health facilities. It is however doubtful whether there is disclosure of TB status to those directly involved in the care for self protection and could be the transmission route.

TB treatment require a multi- sectoral approach and this study recommend, family and churches to collaboration with MOH, in terms of support and knowledge empowerment to be used in treatment adherence and surveillance in control and prevention of TB.The study further established most of the TB patients (86.7%) did not have a social support group that could assist their members when very sick. Social support is vital especially in the intensive phase of treatment and lack of it can negatively affect adherence (Ayisi *et al.,* 2011).

This finding agree with a study in South Africa (Cramm *et al*., 2010) that 95% of the respondent said people with TB fear what others will say, and this stigma affect case holding and case finding. Further, the findings concur with (Wesonga, 2002) in a study involving slum dwellers in Nairobi that the society associate TB with HIV infection and this cause's societal stigma hence default from TB treatment. In addition in Ethiopia (Gebremariam *et al.,* 2010) observed similar findings that the community believe there is association of TB and HIV, and feared this would predispose them to stigma. Further in a stigma related study in Thailand (Kipp *et al.,* 2011) observed low level of education, beliefs that TB increases the chances of getting HIV infection were associated with higher TB stigma.

The finding begs more questions on what happens to those who are able to afford their treatment, keeps secret about their status, mix with the unsuspecting community members and are perhaps having resistant TB. This could be a silent TB transmission route. This study calls for all inclusion TB surveillance to be undertaken in all communities beginning with the private practitioners, community healers to individuals and families to report suspected cases of TB. This suggestion agrees with a study in Cameroon (Njozing *et al*., 2011) that harnessing the enormous potentials through a multi-displinary approach to include traditional healers in TB/HIV service delivery is indispensable. This will go a long way to demystify fear and misconceptions about TB in the community through strict surveillance, proper health education on mode of transmission, clinical presentation early diagnostics/ treatment adherence and its relationship with HIV/AIDS.

5.4: Availability of health services

The study found that the majority of the respondents received their prescribed medication but a few (11.4%) did not receive citing reasons such as out of stock, lack of money while others did not specify. The respondents who did not receive treatment, were observed to compromise continuity that expose them to risks of developing drug resistance to TB which is reported in many countries. The conclusion concur with an observation in a study in China (Kemen *et al.,* 2010) who found interruption of TB treatment was a factor strongly associated with none cure of TB.

5.5 Conclusion

Delay to seek formal health care in designated health facilities is due to fear of stigma that is associated with TB. This resulted to delay in diagnosis, initiation of early treatment and advancement of the disease process. There is secrecy to disclosure of TB status and the TB patients were forced by poverty to disclose to a family member who could assist, keeping the rest in the dark. As a result the TB patients continue to spread the infection to contacts and the unsuspecting family members' majority who offer care to their kin with no knowledge of the illness. As a control measure, this study recommend the Ministry of Health to initiate behavioral change communication strategies to educate the communities on clinical presentation ,the need for early diagnosis, treatment adherence and curability of TB. Further to initiate mandatory surveillance and TB patient treatment supervision by health workers in communities to stop transmission of TB.

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