

Factors contributing for Non-compliance with TB treatment among TB patients: in Sodo Woreda, Gurage Zone, SNNPR.

A Qualitative study

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## SUMMARY

**Background:** Tuberculosis affects individuals of all ages and both sexes. In order to the TB control program is concerned many country extensive expansion of DOTS service and response many commitments. Regardless of such, efforts, TB is still the major public health problem because of default rate is high and non-compliance common and it is a common cause of morbidity and mortality. TB treatment compliance is a complex behavioural issue. In order to improve treatment outcomes for TB, it requires a full understanding of the factors that prevent people from taking their medications correctly including factors that could help them complete treatment.

**Objective:** To explore factors contributing for Non-compliance with TB treatment among TB patients in Sodo Woreda, Gurage Zone, Southern Nation 2013/2014.

**Methods:** A qualitative, phenomenological study design using in-depth interviews was conducted. The Data was collected by using pre-tested open-ended topic guide. The method employed was in-depth interview. Data analysis was begun with transcription. Transcripts were coded using ATLAS.ti-7.software using content analysis.

**Results:** The most frequently mentioned reason for non-compliance to treatment was economic factors, distance to health facility, using traditional healing system, side-effect of the drug, felt well, daily labourers, food security, patient-provider relationship and lack of community and family support. Although the drugs were given free of charge, many patients were non-compliance because of lack of money.

**Conclusion:** Non-compliance to TB treatment amongst TB patients in Sodo Woreda Gurage Zone Southern Nation is associated with non-availability of food whilst taking TB treatment, poor interpersonal communication between healthcare providers and patients, beliefs in traditional medicines for curing TB, long distance to the health care facility, economic factors, becoming daily labourers, side-effect of the drug, stigma and shame, feeling that the size of the tablet is too big and the pill burden (too many pills to take daily). To overcome the most important barriers in treatment compliance, more sustained health education campaigns should be directed towards patients, health care providers, patients' close contacts, and the community at each visit using local language.

**Keywords:** Tuberculosis, Compliance, Non-compliance, DOTS treatment, phenomenological study, qualitative research

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## **LIST OF ABBREVIATIONS**

ADR	Acquired drug resistance
ART	Anti-Retroviral Treatment
BCG	Bacille calmette Guerin
DOT	Directly observed treatment
DOTS	Directly Observed Treatment, Short-Course
HEBS	Health education behavioural science
HIV	Human immune deficiency virus
IDI	In-depth interview
IUATLD	International Union against Tuberculosis and Lung Disease
JU	Jimma university
MDR-TB	Multi-Drug Resistant Tuberculosis
M. TB	Mycobacterium tuberculosis
RA	Research assistant
SNNPR	Southern Nation Nationality People Region
WHO	World Health Organization



# CHAPTER ONE-INTRODUCTION

## 1.1 BACKGROUND

Tuberculosis is an infectious disease caused by mycobacterium tuberculosis that is spread from an infected person through the air when he or she coughs, sneezes or talk. It can attack other parts of the body like the bones, kidneys and spine .The disease affects the lungs in approximately two thirds of cases, but almost all other organs can be the site of TB infection. It is estimated that about one third of the world's population is infected with TB. However, the infection is contained by the immune system in about 90 % of those infected. The TB bacilli can lie dormant for years, being protected by a thick waxy coat. If the immune system is weakened, for example by an HIV infection or treatment with immunosuppressive agents, the chances of developing active TB become much higher(1).

In order to understand today's management of TB; we need to see the disease in its historical context. TB has burdened societies since prehistoric times. Mycobacterium tuberculosis (M.TB), the pathogen causing TB, is suggested to have caused more deaths than any other microbial pathogen. The history of TB, in which he demonstrates how TB has plagued humankind throughout known history and human prehistory(2).

People suffering from TB have been pictured in early Egyptian art, and The disease has been described by many varying names, such as the ancient Hebrew word schachepheth used in biblical books, phthisis used in classical Greek, and consumption, wasting disease and the white plague in modern English. TB has surge in major epidemics and then subsided, similar to other infectious diseases. However, the time scale of TB challenges common explanations for epidemic cycles (2).

TB reached epidemic proportions in Europe and North America during the 18th and the early 19th centuries. At that time death rates in cities like London, Stockholm, and Hamburg approached 800-1000 per 100 000 population per year. A likely explanation for these figures is that TB transmission increased due to increased population density and crowded living conditions, while other risk factors, such as poor nutrition, increased the risk of progressing from latent to active disease (3).

In the face of an enormous TB prevalence, parts of society responded by romanticizing the disease. However, TB first of all caused fear, not only of catching the disease, but also a fear that one would "catch" or be associated with the predisposing factors linked with TB; such as poverty, poor nutrition, alcoholism, and drug-dependency(4). During the first meeting of specialists in internal medicine, held

in Paris in 1867, TB was found to be the most frequent disease that specialists dealt with. Subsequently, a series of scientific meetings and international congresses devoted particularly to TB were initiated. This eventually led to the establishment of the International Union against Tuberculosis and Lung Disease (IUATLD) in 1920 (5).

Towards the end of the 19th century, after death rates from TB had started to decline, two historic events occurred that had a tremendous impact on the diagnosis and treatment of the disease: The discovery of the tubercle bacillus in 1882, by Robert Koch (1843-1910), and the discovery of X-rays by Wilhelm Konrad Rontgen (1845-1923) in 1895. These two events led to a wave of research that eventually resulted in the development of the BCG vaccine in the 1920s, as well as effective medical treatment. Some of the major breakthroughs were the discovery of the anti-tuberculosis drugs streptomycin in 1944, isoniazid in 1952, and rifampicin in 1965 (6).

Tuberculosis (TB) has been declared a global public health emergency by the World Health Organization (WHO). The disease causes significant mortality and morbidity globally and with the advent of the human immune deficiency virus (HIV) epidemic, TB is regarded as a worldwide public health challenge. The rising incidence of TB due to the effect of HIV in both developed and developing countries is well recognized (7).

The highest prevalence and estimated annual risk of TB infection are in sub-Saharan Africa and Southeast Asia. TB is one of the most widespread diseases affecting 8-10 million new cases annually and nearly 3 million deaths occur worldwide each year. About one-third of the world population is latently infected with *Mycobacterium tuberculosis* with more than 95% of these in the developing world (8).

There has been a disproportionate burden of HIV and TB infection, disease, and death in the African region. According to the WHO Global TB Report 2013, there were an estimated 8.7 million incident cases and 12 million prevalent cases of TB globally, in 2012, of which 1.1 million (13%) were among people living with HIV. About 26% of the incident TB cases occurred in Africa in 2012. The proportion of TB cases co-infected with HIV is highest in countries in the African region; overall, the African region accounted for 79% of TB cases among people living with HIV (9).

According to the Global Report 2013 by WHO, which considered the findings from the national TB prevalence survey, Ethiopia ranked as 8<sup>th</sup> among the TB high burden countries in the world, with an estimated incident of TB 258 per 100,000 populations. The estimated prevalence of TB 237 per

100,000 population is concerned (2013 estimate for 2012). and needs to ensure that it Progresses beyond current achievements toward the Stop TB Partnership targets of halving prevalence and death by 2015(10).

The WHO global plan to stop TB strives to halt and reverse its incidence by 2015 and halve the 1990 prevalence and death rates by 2015. While these goals may appear ambitious they can be achieved through good TB programmes that ensure early case detection and treatment, by putting all patients on treatment and by ensuring they complete it(11).

The STOP TB strategy focus on expansion and enhancement of quality DOTS program, addressing TB/HIV co-infection and MDR TB, health system strengthening, involving all providers including the private sector, empowering of TB patients and communities, and promote and enhance research(12).

To decrease the impact of TB, the United Nations included TB prevention and control among its eight Millennium Development Goals, with a proposal to reduce TB incidence to half the 1990' level by 2015. However, despite this increased effort invested in TB control, the epidemic rages on. More than 90% of global TB cases and deaths occur in the developing world; here 75% of cases are in the most economically productive age group (15-54years). An adult with TB loses on average three to four months of work time. This results in the loss of 20-30% of annual household income and, if the patient dies of TB, an average of 15 years of lost income(13).

Ethiopia TB control programme in search for improved treatment and patient adherence led to development of the DOTS strategy, which have five key elements, of strengthening diagnosis, treatment, outcome monitoring, drug supplies, direct observation of treatment and proper record keeping system. Ethiopia planned to increase the case detection (from 36% to 75% ), Tuberculosis Cure Rate from 67% to 85% , treatment success (from 84% to 90%), proportion of MDR TB cases treated with second line drugs from 2% to 55% (14).

As far as the TB control program is concerned, Ethiopia achieved 100 % geographical and above 92 % health facility DOTS coverage. Despite the extensive expansion of DOTS service in the country, TB is still the major cause of morbidity and mortality and the program performance indicators remain unsatisfactory, especially the case detection rate(15). Ethiopia is still among the countries with the highest tuberculosis burden(16). The rate of default From TB treatment ranges from 12 to 20%, which is also higher than the World Health Organization recommendation of less than 10% (17), and non-compliance is common. Besides well-known risk factors, the most important unresolved challenge in

TB control is the treatment completion. Treatment will only be effective if the patient completes the regimen which includes a combination of drugs recommended by the physicians.

Poor compliance contributes to the worsening of the TB situation by increasing incidence and initiating drug resistance. Resistance to anti TB drugs has also emerged as an important obstacle in the control of the disease. Worldwide patient compliance with anti-TB therapy, with an estimate of as low as 40% in developing countries, remains the principle cause of treatment failure (18). The World Health Organization recommends at least 85% cure rate of all diagnosed TB cases (19). In order to achieve this cure rate, compliance needs to be in the order of 85-90 % (20).

TB treatment compliance is a complex behavioural issue. In order to improve treatment outcomes for TB, it requires a full understanding of the factors that prevent people from taking their medications correctly including factors that could help them complete treatment(21).

The TB control community has recognized and addressed system components in which behaviour is a key issue. Both diagnosis delay and non-completion of treatment are two central behavioural challenges. Patients are expected to seek care and complete treatment. Health care providers are expected to perform successfully a number of actions including offering sputum smear examination to patients, conducting tests adequately, and monitoring medicine intake(22).

Success in TB detection and treatment requires specific behaviours from patients and healthcare providers within contexts that facilitate those practices. It is important to recognize that components of the DOTS strategy are, in fact, responses to behavioural challenges in TB control .Direct observation and supervision of patients is assumed to be more effective than self-administration to ensure that patients successfully complete the recommended six-to-eight month chemotherapy(22).

Several ongoing national and global initiatives that are part of TB control programs also aim to address behavioural challenges. Programs that offer enablers such as transportation and food subsidies for patients assume that by minimizing costs the numbers of patients seeking diagnosis and care would increase. Similarly, incentive programs also assume that modifying the behaviours of health providers is necessary to increase treatment rates, for example, through offering monetary retributions for each patient who completes treatment. Initiatives to expand the outreach of health systems through partnerships between public and private providers also address behavioural barriers (e.g. distance from health services, trust of health providers) that affect care-seeking and adherence(23).

Cultural beliefs also influence how patients treat their symptoms. Some groups, particularly in remote or isolated poor population, have cultural or traditional values about health that lead to seeking traditional or herbal use, ancestral or spiritual healing first and seeking modern medicine only when these traditional interventions fail. Another important reason for the non-compliant behaviour of TB patients is related to their stigmatization. Stigmatization occurs when people are given a negative social label that identifies them as deviant, not because their behaviour violates norms but because they have personal or social characteristics that lead others to exclude them(24).

The continuing health system challenges of TB control can be distributed into 5 key areas: inadequate diagnostics and treatment; the need for expansion of the World Health Organization (WHO) Directly Observed Therapy, short course (DOTS) program; multidrug resistant tuberculosis (MDRTB); and HIV co infection. The diagnostic tools in use for TB are old and often ineffective. Sputum smear microscopy, which was developed in 1882, does not detect extra pulmonary or smear-negative TB, and is less effective people infected with HIV, whose smear results are often negative. Most laboratories also lack the facilities to identify MDRTB(25).

Many countries among 22 high-burden countries conducted at least one prevalence survey; few countries conducted it more than once. In Ethiopia there is no national TB prevalence survey conducted so far(26) and evidence from a variety of literature shows that there are many factors affecting timely TB treatment compliance(27). However, in Ethiopia, only a few studies looked into these factors and reported them quantitatively without further exploration into the issue owing particularly to the underutilization of qualitative research.

## **CHAPTER TWO-LITERATURE REVIEW**

### **2.1 COMPLIANCE TO TB TREATMENT**

Compliance to TB treatment refers to taking tuberculosis medication daily at the right time, in dosages in line with the TB treatment guidelines for 6 months until the patient is declared cured by healthcare professional. Gandhi (2010:2) states that compliance can be defined as the extent to which a patient's behaviour coincides with medical advice. It captures the increasing complexity of TB chemotherapy by characterising patients as independent, intelligent and autonomous people who take active and voluntary roles in defining and pursuing goals for their medical treatment(29,30).

According to the World Health Organization(WHO), (2010:78), locally appropriate measures should be taken to identify and address physical, financial, social and cultural obstacles that can result in non-compliance to TB treatment .To ensure compliance to TB treatment, Ethiopia adopted the DOTS strategy in 1995. Components of this strategy directly linked to improving compliance to TB treatment include the direct observation of treatment (DOT) and ensuring an uninterrupted drug supply (31,32,33).

According to Tshabalala (2007:29), DOT which involves observing the patient swallow the TB drugs is one of the main strategies for increasing compliance to TB treatment. The National TB Guidelines (2009:48) state that DOT should be provided to all TB patients throughout the treatment period and also that the approach to applying DOT should be flexible and suit the patient's needs (34,35).

### **2.2 NON-COMPLIANCE LEVELS**

Non-compliance rate is defined as the proportion of TB patients who fail to follow instructions, particularly in administering TB medication as prescribed, a cause of a less than expected response to treatment and this rate should be less than 5%(34).

Noback and Corolla (2005:7) indicate that, the main contributing factor to non-compliance is the long term treatment (usually six months). And further state that toxicity of TB drugs is one of the major reasons for non-compliance to TB treatment. The benefits of compliance to TB therapy include total cure of the current infection and preventing new infection and the occurrence of multidrug resistant TB(35).

## **2.3 FACTORS AFFECTING COMPLIANCE TO TB TREATMENT**

In the healthcare context, compliance refers to the extent to which patient behaviour coincides with medical advice. A range of factors leading to TB treatment compliance or non-compliance by patients includes demographic, health-service, client-related, social and economic factors. Several authors have explored some of the factors contributing to non-compliance, these being, age, educational status, family support, gender, marital status, access to health services, staff attitudes, patient-provider relationships, cultural beliefs, poverty and socio-economic status, patient knowledge on TB, stigma and discrimination and co-morbidities(38,39). These factors will be explored in this review.

### **2.3.1 DEMOGRAPHIC FACTORS**

Chaulet (2003:23) states that demographic factors are likely to cause noncompliance to TB treatment. A study conducted by Estifanos & Bernt (2007:3) identifies demographic factors associated with non-compliance to TB treatment(38,39).

The study conducted by (Estifanos & Bernt 2007:3 state that regard to age, Patients aged 25 years or older are more likely to be compliant compared to the other age groups). Although Volmink & Garner (2007:315) argue that there is no significant difference in the compliance patterns of patients of different ages. Findings from a study conducted by Kaona, Tuba, Siziya & Sikaona (2004:68) state that age is not significantly associated with compliance to TB treatment(41,42,43).

The study conducted by Malik & Ahmad (2009:17) indicates that with regard to educational status, 55% of non-compliant TB patients were illiterate, 35% had passed primary school, 7% had passed secondary school and 3% were higher education graduates. Ghandi (2010:25) states that in a study carried out in Thailand aimed at determining the patient factors predicting successful treatment, out of 1,241 patients studied, 81% with higher educational levels and knowledge of tuberculosis were successfully treated, the argument being that these factors are associated with better compliance to TB treatment and subsequently treatment success (Okanurak, Kitayaporn & Akarasewi, 2008:1162). A study conducted by Gad et al. (1997: 244-250) indicates that patients with low educational levels can have a poor treatment outcome as they may not read or understand written instructions with regard to TB treatment(30,44,45).

There has been no documented evidence that support by family significantly increases compliance to TB treatment. Volmink & Garner (2007:317) indicate that the difference in compliance between patients who are supported by their families and those who are not is not statistically significant(40).

Gender and marital status have also been explored and are strongly believed to have an influence on the degree of compliance to TB Treatment. From the study conducted by Malik & Ahmad (2009:16), out of 100 non-compliant TB patients surveyed, 63% were males and 37% were females. From the same study, out of the 100 non-compliant TB patients, 72% were married and 28% unmarried(44).

## **2.4 PERCEIVED BARRIERS TO ACTION**

Perceived barriers to action as discussed in this review include health-service, client-related and social factors.

A study by the IUATLD (2002:12) states that factors affecting compliance to TB Treatment includes health service factors such as TB treatment duration, access to treatment, staff attitudes and patient-provider relationships(1).

### **2.4.1. TB TREATMENT DURATION**

Smetherman (2000:2) indicates that patients do not comply with treatment because tablets are taken for too long. According to Stanhope and Lancaster (2006:776) one of the biggest problems with compliance to TB treatment is the required lengthy therapy using multiple drug combinations. This on its own reduces patients' compliance to treatment. Clark (2009:793) indicates that failure to comply with the prescribed TB therapy results in treatment failure and the development of drug resistance(47,48,49).

#### **2.4.1.2 ACCESS TO TB TREATMENT**

Findings from a study conducted by Kaona eta l. (2004:68) reflect that poor access to a health care facility may have an effect on compliance to TB treatment as healthcare services may be inaccessible to patients. It further states that TB patients residing in remote areas with poor road infrastructure may be unable to visit health care facilities to access any form of treatment. Erhabor, Aghanwa, Yusuph, Adebayo, Arogundande & Omidiora (2000:235) concur with Estifanos & Bernt (2007:3) in stating that the distance from the TB patient's residence to the clinic has a direct relationship with the rate of compliance. The longer the distance, the poor the compliance to TB treatment(43,50).

#### **2.4.1.3 STAFF ATTITUDES**

Negative staff attitudes have been associated with TB patients interrupting TB treatment. A study by Mokgoadi (2002:39) suggests that a preventative measure to decrease non-compliance to TB treatment is to improve the attitude of health-care workers dealing with TB patients(29,30).



#### **2.4.1.4 PATIENT -PROVIDER RELATIONSHIP**

A number of studies have shown the importance of the relationship between healthcare workers and their patients as a contributor to treatment compliance or non-compliance. Bam et al (2005:55), in a study conducted in Nepal, found that the quality of the healthcare provider and patient interaction and relationship contributed to differences in treatment adherence(30,51).

#### **2.4.2.1 CLIENT-RELATED FACTORS**

##### **2.4.2.1.1 CULTURAL BELIEFS**

Kobe (2006:32) states that non-compliance of most TB patients with prescribed treatment is caused, to a large extent, by cultural beliefs. Dyk (2001: 126) supports this view by emphasising that no TB prevention programme can succeed in Africa without the input of traditional healers. The idea behind the orthodox view is that traditional healers are regarded as effective agents of change since they function like social counsellors. They are regarded as guardians of the traditional code of morality and values. Adding to the same view, Dyk (2001:126) further indicates that approximately 80% of people in Africa rely on traditional medicine for most of their health needs. Overall, traditional healers are observed to have more influence in communities than health care professionals, hence the reason why it is beneficial to incorporate them into the treatment processes. As such, healthcare workers find it difficult to convince patients to comply with TB treatment as required, because their beliefs make them noncompliant to treatment(52,53).

##### **2.4.2.1.2 POVERTY AND SOCIO-ECONOMIC STATUS**

From an economic perspective the length of time and costs involved from TB diagnosis to subsequent treatment determines the degree of compliance and successful completion of the prescribed therapy. As a result, a proportion of patients, particularly the poor, may drop out completely at any stage of the process towards successful TB treatment (Kamolratanakul, 2009: 576). According to the WHO (2003:1) TB affects the most productive and economically active segment of the population and to a greater extent noncompliance to TB treatment is higher among lower social class group(38 ,54).

A study In India by Pandit et al. (2002:242) however does not find socioeconomic status to be significantly associated with TB treatment compliance(53). A study conducted by Tshabalala (2007:34) finds that poverty is a leading factor that results to TB patients' non-compliance to treatment. Poor TB patients experience barriers to access for effective TB healthcare services, which can lead to non-compliance to treatment. A study conducted by Malik & Ahmad (2009: 17)indicates that 67% of

non-compliant TB patients were of lower social class, 28% from the middle and 5% from higher classes(34,46).

#### **2.4.2.1.3 KNOWLEDGE OF TB**

Gad et al. (1997:244-250) states that compliance with TB treatment is significantly higher among patients who have a good knowledge of TB. Patients who know about the natural history of TB, its complications and the importance of complying with treatment exhibit improved compliance to TB treatment. Another study by Kaona et al. (2004:68) reveals that compliance with TB treatment is significantly higher among patients who have good knowledge about TB compared to patients who do not. In a similar study in India in 1992, the authors found that there was an association between the compliance behaviour of TB patients and their knowledge of specific aspects of the disease(43,45).

### **2.4.3 SOCIAL FACTORS**

#### **2.4.3.1 STIGMA AND DISCRIMINATION**

Ghandi (2010:34) states that the presence or perceived presence of stigma and discrimination in a community may act as barriers to patients disclosing their disease to family or community members, who may provide much needed psychosocial support to the patient. A study by Hodgson, Desclaux & Mukasa (2004:1281-1283) concludes that stigma and discrimination towards TB and HIV patients results in patients delaying seeking testing and treatment and thus poorer health outcomes(30,56).

#### **2.4.3.2 CO-MORBIDITIES**

According to Ghandi (2010:35) while there is no doubt that HIV predisposes an individual to developing TB, there is no consensus on whether HIV is associated with poor TB treatment compliance (WHO, 2002:2). However, possibilities of increased pill burden if the patient is on Anti-Retroviral Treatment (ART), increases incidences of side effects and other co-morbid conditions which result from HIV, such as depression and dementia, and may increase the likelihood of poor compliance to TB treatment. A similar study conducted in Namibia in 2006 also revealed that patients who are receiving other treatments in addition to TB treatment are less compliant to TB treatment compared to patients who are only on TB treatment(30,57, 58).

## **2.5 BEHAVIOURAL FACTORS**

Behaviour is the way an individual conducts himself or herself, or responds to a situation or stimulus(57). In this study, “behaviour” is used to denote what the TB patients do or refrain from doing to comply or not to comply with treatment(58). Refer to Bandera’s claim (1997) that the

behaviour adopted depends on three perspectives of people's understanding: their perceptions of the level of risk, followed by an expectation that the behaviour will reduce the risk and their own expectation of what they can achieve by the change of behaviour. The three perceptions work in combination to effect behaviour intention and influence adoption of behaviour from initiation through to sustaining the behaviour. Initiation is the process or action of starting or introducing something. In this study, initiation refers to the patient's motivation to start TB treatment correctly. Effort is the determination and vigorous attempt (including both physical and mental exertion) to maintain the behaviour initiated in order to achieve the desired goals. "Persistence", according to the Oxford University Press (2006:1069), refers to steadfastness or an act of firmly continuing on a course of action in spite of difficulties or opposition. In the study, persistence is the patient's determination and continuous effort to adhere to or comply with TB treatment until completion. The patient must be convinced that by steadfastly following instructions and complying with the treatment they will be cured of the TB. In other words, the patient must have strong beliefs in the effectiveness of the TB regimen in curing TB disease (outcome expectations)

### ***2.5.1 ALCOHOL AND SUBSTANCE ABUSE***

Alcohol and substance abuse have often been cited as reasons for poor compliance to medication in general. The altered behaviour under the influence of alcohol and other substances is believed to be the reason for such observations. When one is under the influence of alcohol one is likely to forget to take the medicines, and if even if not the chances of developing side effects that may subsequently lead to poor compliance are high(59).

## **CHAPTER THREE**

### **SIGNIFICANCE OF THE STUDY**

Appropriately focusing interventions on the key factors which result in non-compliance to TB treatment have the greatest impact on contribute towards the development of strategies aimed at: Increasing compliance to TB treatment, decreasing the TB defaulter rates and improve the general outcomes of TB patients.

Finally also provide as baseline information to program managers, researcher, non-government organizations and policy makers working towards reducing the burden of TB in the study area.

## **CHAPTER FOUR-OBJECTIVES**

### **4.1GENERAL OBJECTIVE**

To explore factors contributing for non- compliance with TB treatment among TB patients: in Sodo Woreda, Gurage Zone, Southern Nation 2013/14.

### **4.2 SPECIFIC OBJECTIVES.**

- To explore the socio-cultural factors this may result in non-compliance with TB treatment among the TB patients in Sodo Woreda.
- To explore the health system factors which may result in non-compliance with TB treatment among the TB patients in Sodo Woreda.

## **CHAPTER FIVE-METHODS**

### **5.1 STUDY AREA AND PERIOD**

The study was conducted in Sodo Woreda from February 25 to April 27, which is one of the districts from Gurage Zone in Southern Nation and Nationally People Regional State. Sodo is bordered on the south by Meskan and on the west, north and east by the Oromia region. The administrative centre of Sodo is Buee. And it covers an area of 109,943 hectare. The district 178km far from the region, Awssa and 105km far from Addis Ababa .The total population of woreda is estimated to be 175,725 from which 86,106(49%) male and 89,619 (51%) female according to 2007 national census projected to 2012/2013. Urban population's accounts 17907 (10.19%) of the total district population and the rest 157818 (89.81% ) are residing in rural part of the district. The majority of the inhabitants practice Ethiopian orthodox Christianity, with 93.35% of the population reporting that belief, while 3.3% were reported as Muslim and 3.28% were protestant .The three largest ethnic groups reported in Sodo were the Sodo Gurage (85.32%), the Oromo (11.58%), and the Ahmara (1.47%); all other ethnic groups made up 1.7% of the population. Sodo Gurage is spoken as a first language by 91.06% of the population. There are 4 urban and 54 rural kebele under the district. The rural part of the district includes both high land and lowland kebele which have difference in morbidity rate of people. The district has 8 health centres, 54 health posts, and 1 urban health post. In addition to governmental organization there are also 2 private clinics and 3 drug stores in the urban area of the district (60).

### **5.2 STUDY DESIGN**

Phenomenological study design approach was chosen, because Phenomenology is concerned with the study of experience from the perspective of the individual. To be able to fully describe the experience of Compliance with TB treatment among TB patients the researcher must enter deeply into the experience. This is possible using phenomenological approach using in-depth interviews. The purpose of phenomenological research is to describe phenomena as they are lived and experienced by individuals.

### **5.3 POPULATION**

The population of the study was TB patients who were non-compliance, from TB treatment and they were registered in data base or registration book for TB treatment in the health facility of the study area. But, people would be excluded from participation; if he/ she have difficulty to answer questions may be due to serious illness.

## **5.4 SAMPLE SIZE AND SAMPLING TECHNIQUES**

### **5.4.1 SAMPLE SIZE**

Determining an adequate sample size in qualitative research is a matter of judgment and experience in evaluating the quality of the information(61). However, among the 7 health center and 16 health posts that serving DOTs programme in the Woreda, 4 health center and 7 health posts were selected purposively for this study. The selection of the health facility was done purposively by considering the data collection method, availability of resource for study, time for study and nature of the study. A total of 22 respondents were interviewed, 5 in Buee health center, 2 in Kela health center, 2 in Tiya health center, 2 in Refanso health center, 3 in Wacho health post, 2 in Gogeti-one health post, 2 in Agamsenado health post, 1 in Gogeti-three health post, 1 in Wodoget health post, 1 in Gogeti-two health post, 1 in Adazer health post were conducted.(see fig.1) From the total 18 were new-patients and they were under intensive phase and 2 were relapsed they were under continuation phase and 2 were failure they were under intensive phase.

### **5.4.2 SAMPLING TECHNIQUES**

The sampling techniques focus to involve various participants in different health facility was selected purposively to meet the set objectives. The selection was made by after discussing the woreda administrative and the woreda health office about the research objectives, supporting letter from this organization was submitted to the health center then, the health center supporting letter submitted to the DOTs clinic. After participants of the in-depth interview (IDI) was identifying the investigator and HEWs was visit their home.

## **5.5 SAMPLING METHODS AND SAMPLING PROCEDUER**

Criterion purposive sampling was employed. On the criteria to meet the research objectives. For participants selection first start the investigator was discussed or consulted with different Woreda focal personnel, like the Woreda administrative, Woreda health office, health center, HEWs and DOTs clinic nurses to recruit potential participants from data base or registration book.

The researcher was developed the recruitment guidelines that explained the procedure briefly about the potential participants. After Take the address of those potential participants, the investigator and HEWs visit their home. Before enrolled in to the study the participant had to fully understand what the study was and how their privacy was through consent process and the voluntary nature of the participants in the research study was emphasized. If the patient wishes to take part, they were sign the consent form and the investigator was fix the time and date for the interview.

## **5.6 DATA COLLECTION METHODS AND PROCESS**

In-depth interview data collection method was used and the in-depth interviews was facilitated by open-ended topic guide and audio recorded. And the topic guide was refined and made responsive to the research objectives in due course of the research. The activates also include like selecting health facility, sampling purposefully, collecting data and building rapport etc.

In-depth interview is an effective data collection method in qualitative studies for getting people to take about their personal believes, views, experiences, during addressing sensitive topic (62).

The major variables of interest was explores reasons for non- compliance, against TB treatment from lived experience, the views of TB patients, and analysis of, reasons, and of respondents regarding TB. Each session was last about 60-90 minutes for the in-depth interviews. Data was collected by the investigator (I) and the research assistance (RA). The research assistance, who has MPH degree, and has a research experience, would receive training for one week on TB and skills required for the respective responsibilities.

After obtaining consent from participants, in-depth interviews were tape-recorded. Notes were also being taken during the interviews. The investigator was engage with participants by posing question in natural manner, listening participants response attentively and asking follow-up questions and probes based on the participants responses. The interview was conducted face-to-face and one investigator and one participant. The interview conducted a convenient place for the participants. These interviews were taking place in the patient's home, and at health facility.

## **5.7 ROLE OF THE INVESTIGATOR**

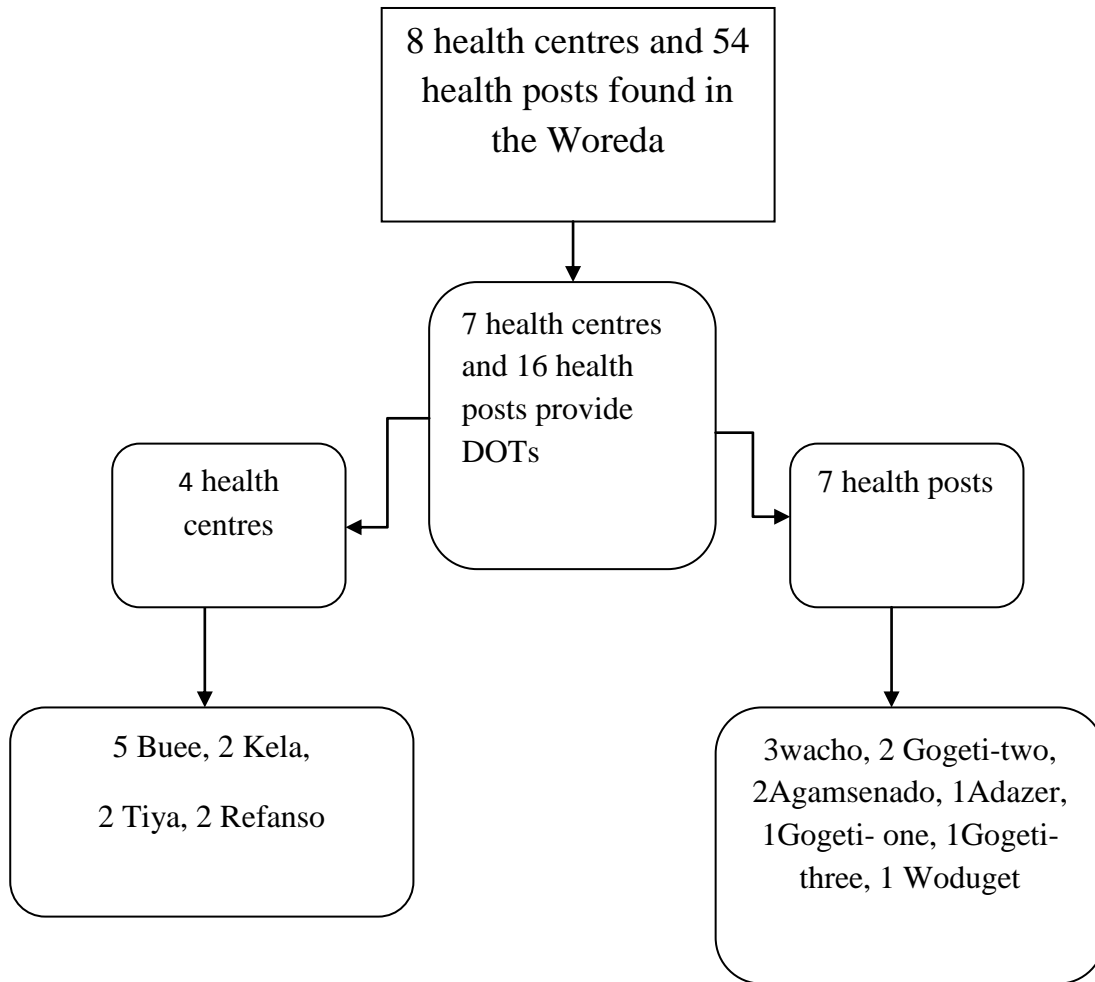
The investigator was done the overall research process. The investigator collects the data during the in-depth interview and select participants' collaboration with nurse in the DOTs clinic and HEWs.

## **5.8 PRE-TEST**

Pre-test was done to checking the methods used, such as audio-taping and building confidence in speaking, building rapport without building bias and to decide the number of data collection day. Three interviews were conducted in jimma university specialized hospital. The data was not included the main study.



Figure 1 In-depth interview participants (total of 22 interview)



## **5.9 DATA PROCESSING AND ANALYSIS**

Data collection and analysis was proceeding simultaneously. After each interview data collection the investigator and the research assistant was listening to the tape recorded interview and thoroughly discussed and clarified the contents. We were take notes while listening, capturing the main essence of the answers provided by each of the participants.

All notes and the recorded audio were transcribed and translated from local language (Amharic and Guragena) into English and used to complete the hand written notes. The write-ups were produced and time was taken to prepare a contact summary, which involves reviewing the main concepts, themes, issues and questions seen during the contact. This guides planning for the next contact, gives a chance for modification in approach and to decide on continuing the data collection until a point of theoretical saturation. Each transcript has given proper identifying label.

The investigator (I) and research assistant (RA) transcribed and translated (close to verbatim) each interview after we were discuss and negotiate the content. Following the transcription, a line-by line coding of the data was done.

The information obtained was coded by the types of coding techniques open coding of the data was done. First starting the early coding of the data 147 codes were emerged. Then by reading the data and using thematic coding, merged to 9 family codes and those family codes were merged to 4 themes. Those emerged codes were aggregated the concepts was defined and elaborated. An inductive approach was followed to allow clustering of ideas and patterns to emerge. The codes were collapsed into categories of central themes. Following the development of central themes of the study, the researcher was rearrange transcripts and write a rich and complete description of the lived experiences from which the essential structure of the phenomena was formulated. To manage the overall coding developing process ATLAS.ti-7 software was used

## **5.10 STRATEGIES FOR MAINTAINING TRUSTWORTHINESS**

In order to maintaining of trustworthiness the study the researcher applied different techniques.

The processes of the study were reported in detail, there was also use of frequent peer-debriefing sessions and triangulation data as well as investigators. To creating honesty in participants during contributing data, reading the consent form, describing the aim of the study in detail, introducing of myself.

### **5.11 ETHICAL CONSIDERATION**

Prior to gaining consent from the participants, permission to carry out the study requested from Jimma University Research Ethics Committee and the necessary permission was obtained from Sodo Woreda administrative councils, Woreda health offices and the health center. After all permission requests were granted an invitation letter was distributed to all participants. This letter explains the purpose of the study and right of participants'. Participants were assured that they can withdraw from the study at any time during study period. The privacy of subjects was fully respected during data collection and dissemination of results. The sessions were arranged in a private and quiet place convenient for the participants. The identities of in-depth interviewees would be changed to ensure that they would not be identified. The tape records and transcripts were kept in a safe place and remain confidential.

### **5.12 DISSEMINATION PLAN**

The findings of this study will be disseminated to college of public health and medical science and department of health education and behavioural science, SNNPRS Health Bureau, Sodo Woreda Administration and Health Office. The finding will be also disseminated to different stakeholders and will be presented in various seminars and workshops and Attempt will be made to get the findings published in a peer reviewed journal.

### **5.13 DEFINITION OF TERMS**

**Compliance** was defined as taking of tuberculosis medication daily at the right time, at a dosage in line with the TB treatment guidelines for about 6months, with the correct diet and avoiding alcohol until the patient is declared cured by a health-care professional(28)

**Non-Compliance:** was defined as not taking tuberculosis treatment daily for the prescribed duration in accordance with the TB treatment guidelines. This includes patients who miss any dose(s) of the TB treatment for whatever reason(34)

## CHAPTER SIX

### RESULT

This qualitative phenomenological study, attempted to explore factors contributing for non-compliance with TB treatment among TB patients in Sodo Woreda, Gurage Zone, Southern Nation.

A total of twenty-two participants were successfully interviewed, of which 14 were female and 8 male. The mean age of the participants was 36 years range 15- 60 years old and they were different categories of TB patients 18 new and 4 re-treatments. Most of the study participants were rural dwellers.

**Table 1 . Characteristics of the study population in Sodo Woreda, Gurage Zone, Southern Nation, 2014.**

Characteristic	<i>N</i>	%
Gender:		
Female	14	64
Male	8	36
Total	22	100
Age Distribution		
<20	3	13.64
20-39	12	54.54
40-60	7	31.82
Total	22	100
Category of patient		
New patients	18	82
Re-treatment	4	18
Total	22	100

In this study one main theme and four sub-themes emerged from the content analysis. The main theme was reasons for tuberculosis treatment non-compliance and the four sub-themes were (1) Client related factors, (2) Health service related factors, (3) Disease and Medical related factors and (4) social influence. Each sub- theme was reported in detail as follows.

## **1. CLIENT RELATED FACTORS**

Regarding to client related factors, the following were mentioned as encouraging noncompliance: Economic factors, Use of traditional healing system, felt well, Lack of community and family support, daily labourers and food security. (See Annex D)

### **Economic factors**

As suggested by the participants the intensive phase of their treatment, were required to take their treatment under a direct observation of health personnel; as a result, patients who came from distant areas needed to rent houses in the towns where TB treatment centers were located. In addition in this study it was found that Patients need money for transportation to health facilities, registration at health facilities, diagnosis, expensive referrals to the nearby hospitals, had to pay for food, and to meet other basic needs.

However, Seventeen of the TB patients confirmed that limited access to money was the main reason for treatment non-compliance.

The overall life conditions of most TB patients as was explained during the interview many of them had severe financial constraints. Patients who faced such challenges prefer to interrupt treatment despite their desire to continue. What participants said about the financial challenges they faced: A TB patient who was absent from collecting her drug before narrated as follows:

*“...Yes, if I had the money, I would have gone back to the health center already.”*

(34 years-old female participant, Wacho health post).

Similarly another TB patient said that: *“Many patients from rural areas do not come to the health facility on time for treatment. I come here when I am seriously sick. Because late enough due to lack of money for transportation and it is far.”*(35 years-old female participant, Tiya health center).

## **Use of traditional healing system**

As said by the participants Belief in traditional medicine for curing TB was associated with non-compliance to TB treatment. Twelve of the TB patients reported about their use of traditional healing systems before and during treatments as well as if their health was no improved. They reported that the treatments were effective, much shorter, helpful, kept away bad spirits and it got in low cost.

The patient also reported that they preferred Traditional healers because traditional healers are more accessible, in communities than the health centres. After the onset of TB symptoms, the patients applied self-medication using traditional medicine before seeking help from health care providers and use combination with their treatment. One non-compliance TB patient reported her use of an alternate healing system hereunder:

*“I tried local herbs and religious remedies in many occasion and I didn’t continue the treatment until my situation reached to a point that I couldn’t milk cow for my children” (38 years-old female participant, Gogeti-one health post).*

As said the participants even though their treatment is caused, to a large extent, by cultural beliefs, the family members were had a role in the treatments behaviours’ of the TB patients.

One TB patient said that:

*“I did feel better after the treatment but in the middle I became very sick. When my condition worsened... My family brought me to a special man, who is known in the whole area for his healing skills. to a traditional healer.... who boiled some herbs for me to drink..... It didn’t really help, but I continued to use it with the hope that I was going to get better. But I noticed that since I started using the medication from the health center, my health has improved a lot.”(49 years-old male participant, Wacho health post).*

## **Felt well**

Eleven participants reported that they stopped taking their anti-TB during they were free of symptoms and feeling well, because they thought when they commence treatment they will be very sick and may be inactive. However, their treatment progresses and their condition improve, and symptoms start to regress, they thought they were cured. Patients feeling better they seen their treatment is a sign that medicines are working well already.

In this study with regarding to perceived severity of ill-health condition, include patients not acknowledging the dangers of not completing TB treatment because of subsiding TB symptoms or feeling better. Subsiding TB symptoms or feeling better patients might not see the need to continue with TB treatment when they are feeling better or well after taking the treatment for a while, usually 2 months out of the 6 months required treatment duration because they forgetting the dangers of not completing TB treatment. As verbalized one non-compliance TB patient:

*“I stopped taking medicines because I feel well already.”*

(31years-old, female participants, Wacho health post).

Similarly another non-compliance TB patient said that:

*“I stopped taking the treatment drugs because I feel okay after one month of treatment.”*

(25years-old, male participants, Tiya health center)

### **Lack of community and family support**

Findings from this study showed that eight of the TB patients reported that lack of family and community support were one reason for discontinued their treatments. The patients revealed that family and community support were found to be crucial for their treatment especially during the intensive phases.

Some patients had been seriously ill when treatment was initiated and needed someone to accompany them for treatment. In addition, families provided food and transportation money since some patients had no income and others had to stop working for some time. Families were also a source of encouragement, give motivation, remind to taking their drug, assisting with the administration of medication and comfort for those patients who had lost hope. How family support can influence treatment compliance is narrated as follows:

*“I didn’t have any positive experience from my family no one is help me because my family is live rural place I am student I live in town, sometimes I will become hopeless during that time I miss the drug.”*(18 years-old female participant, Buee health center).

Similarly another TB patient said that: *“This is where I have found real help I stopped taking my drug because of no support in my family member...”* (33 years-old female participant, Adhazer health post).

## Daily labourers

This study showed how patient's prioritized work over taking treatment and for many there appeared to be a choice between work and compliance. Ten of the TB patients in the study experienced loss of employment or the opportunity to work as one of their main problems during treatment. Patients reported losing their job when their TB diagnosis was known, or because they were too ill to continue working, or were unable to find daily work because of the time consuming treatment arrangements.

In this study found that loss of employment or the possibility to work led to a chain of interrelated barriers for these TB patients. Daily treatment was time consuming and physically demanding, and rigid routines at health facilities reinforced many of the emerging problems. They perceived that the treatment program did not fit into their everyday life creating a condition favourable to miss collecting their drug. Patients with limited access to financial or practical help from relatives or friends experienced that the total costs of attending treatment exceeded their available resources. This was a barrier to compliance already during early stages of treatment. Patients still managed to continue treatment, mainly because relatives or community members provided food, encouragement and sometimes money for transport. Lack of income over time, combined with daily accumulating costs and other struggles, made patients vulnerable to interruption during later stages of treatment.

People who are daily labourers or work in the private sector they can't get any kind of sick leave and they face more problems. The patients interrupt treatment because they don't want to lose their jobs. Daily attendance at a clinic caused high transportation costs, and those that could not afford transportation incurred opportunity costs due to extensive time use. In addition, most patients believed that they had to eat expensive protein food like meat, milk and eggs to get cured. Daily labourers offered an illustration of how the struggle to obtain food increased already pronounced personal crisis caused by loss of income: One non-compliance TB patient explained his experience:

*"I was the only one working in our family, so I couldn't go every morning ..."*

(33 years-old male participant, Adazer health post)

Similarly another TB patient said that: *"Because if you are working you will forget about your medications. You become busy and the nature of our work is heavy. Good if you have a light job and you just sit. You still have time to think about your medicines. But with me, I am just labourers, it's difficult and it will really affect out taking medicines."* (31 years-old female participant, wacho health post).



## **Food security**

Nine of the respondents have experienced of food shortage during treatment and food played a pivotal role in complementing TB drugs; when there was food shortage they failed to comply with TB treatment. These reasons should be considered seriously since they were reported by the patients and must be addressed appropriately in order to improve compliance to TB treatment.

The patients believed that lack of food or intake of inadequate food was associated with more severe side effects and a difficulty to tolerate the drugs. The amount and quality of food needed and the degree of possible side effects were also believed by the patients to be proportional to the drugs taken. Lack of food was mentioned as a factor adversely affecting their treatment by those patients who had insufficient income. Patients mentioned drugs could be harmful on an empty stomach, and that it was better not to take drugs if one had not eaten. What participants said about the food shortage what they faced:

One non-compliance TB patient was narrated as follows:

*“It has been very hard for me to take treatment because I don’t have anything to eat.”*

(60 years-old male participant, Refenso health center)

## **2. HEALTH SERVICE RELATED FACTORS**

Regarding health services related factors, the following were mentioned as encouraging noncompliance: Distance, patient- provider relationship and not good opening time. (See Annex D)

### **Distance**

The main reason for non-compliance during TB treatment was patients’ lack of physical access to health facilities which providing treatment services. Patients attending treatment from urban kebele had shorter walking distances than those from rural kebele. Fifteen TB patients come from rural areas which were within reach of a health facility in a 15 min-5 hour walk. Furthermore, patients were required to travel long distance which was characterized by natural barriers, such as rivers and mountains. The effect of distance on TB treatment compliance was narrated as follows:

*“The distance is so far, I am unable to go and back day to day specially the first two month because it took over half an hour for me to go by foot and. ..Most say about 40 min. to get to the health center.”(18years -old female participant, Buee health center).*

Another 49 years-old male non-compliance patient said that *“I am a man and I had a hard time to reach here. It is difficult to bring children and women along. When they get TB, we treat them with traditional medicine. Sometimes they are cured or they may live with the disease for a long period, or in some cases they die. That is all we can do ....”*

(49 years-old male participant, Wodugut health post)

### **Patient- provider relationship**

As participants said there is Utilization services also includes the exchange of knowledge between their doctors. However, exchange can't take place properly at the health service because of the limited time for each client and interests of health professionals in their patients. The clients in the study don't have enough access to information regarding the reason why they should complete the whole treatment regimen without any interruption. Inadequate information about compliance with anti TB drugs can result from the poor client-provider interaction. One participant said that:

*“As I don't understand that I had to go back to say until six months, I discontinued the drugs myself after I have taken one month of drugs...”* (45years-old female participants, Agamsenado health post)

The study revealed that importance of the relationship between healthcare workers and their patients as a contributor to treatment compliance or non-compliance.

Fourteen of the interviewed non-compliance TB patients were positive about the health care staff. The interviewed patients said to have great confidence in the TB nurses and HEWs and felt supported by them. Patients who feel that their physicians communicate well with them and actively encourage them to be involved in their own care tend to be more motivated to compliance.

On the other hand eight of the non-complaints patients had experienced problems in communication with the health center and HP staffs. This Barriers associated to interpersonal relationship between them related to the drug regimens administered under direct supervision component. It is in this component that patient-provider partnership is established.

This study found out that there is a poor interpersonal communication between the patients and their health providers. They still fail to give clear and accurate information of what their patients need. The patients, on the other hand, fail to express their concerns and expectations about the treatment because they considered the health care providers stigmatized the patients. According to these patients

the HEWs or nurses were sometimes unfriendly and could have little patience and the patient couldn't collect their drug on time because they wait long time at health facilities. This Poor communication with healthcare providers was also likely to cause a negative effect on their compliance: How patient-provider relationship can influence treatment compliance is narrated as follows:

*“My experience at this Clinic is not good. Because I find the nurse that not good at their job, especially Sister (name) is not present I didn't motivated to go the clinic. I have complaints.”*(33 years-old male participant, Adhazer health)

### **Not good opening time**

It is interesting to observe that the participants did not only see factors outside their control as leading to non-compliance. The clinic operational times were one of the common reasons for non-compliance for TB treatments. The clinic opening times may be inconvenient, particularly to patients who are also employed, as the clinic times are often the same working hours of the patients.

Five of the respondents would prefer the clinic to have flexible opening hours. All the respondents in the study reported that medicines were available each time they went to collect them. The supply chain system for medicines was therefore un-satisfactory. Medicine unavailability may mean that even if the patient comes on time to pick up their medicines, if they are unavailable patients will inevitably be forced to interrupt treatment. One non-compliance TB patient was narrated as follows:

*“An opening time not appropriate for me because I am a student I miss morning class because of this reason I didn't like the first 2 month treatment programme.”* (15years-old male participant, Buee health center).

Similarly, another non-compliance TB patient said that: *“other problem was that time of drug collection was not appropriate for me because my husband was died before one year I had work load I didn't collect the drug always .”*(21 year-old female participant, Buee health center).

### 3. DISEASE AND MEDICAL RELATED FACTORS

Disease and Medical related factors were reasons for non-compliance to TB treatment. In this study Side-effects of drugs, pill burden and size of the drug were one of the reasons that make the patient discontinuous their treatments. (See Annex D)

Five of the TB patients in this study had a problem with the tablets. They find either the tablet too big or too many. The pill burden was the reason for missing TB treatment; as many as 5 tablets are normally ingested by a TB patient on a daily basis. This number increases for patients who are taking other illness for Medications like typhoid fever or other disease. From the perspective of some patients, a high number of pills were associated with potential damage to the body and a higher risk of not tolerating the drugs. One TB patient that is who had typhoid fever said that:

*“I miss drug when I was sick in typhoid fever, because other drug was prescribed for this disease so, my mother told to me not taking the all drug at once that my affect my health.”*(33years-old male participant, Adhazer health post)

#### Side-effects of drugs

When asked what factors lead to non-compliance with treatment regimen, the source most strongly emphasized by the some of the participants tended to be the physical side-effects of TB medication. Another contributing factor includes the patient’s negative subjective experience with the medication, which is not often communicated to the health care provider.

One TB patient said that:

*“The side effect of the drug was so dangerous that makes me always tired and vomiting because of this reason I miss the drug and continue ‘Tebel’ that is holly water.”*(30years-old female participant, Refanso health center)

Side effects were experienced by eleven participants, mainly at the beginning of anti-TB treatment or upon initiation of concomitant treatment. Among side effects patients mentioned were generalized body weakness, burning of the stomach, urine turns to red, headache, and rash and vomiting. One non-compliance participant who discontinued his anti-TB treatment after experiencing severe side effects explains:

*“My urine turned red; I thought it was blood caused by the medication. I thought it was safer to stop the medication.”*(25 years-old male participant, Tiya health center).

#### **4. SOCIAL INFLUENCES**

Social influences were affecting the treatments behaviour of TB patents. In this study Stigma and shame attached to tuberculosis was associated with non-compliance to TB treatment.

##### **Stigma and shame attached to tuberculosis**

The existing socio-cultural barriers and taboos associated with TB have also been found to be a factors leading to poor completion rates. The patient thought the presence or perceived presence of stigma in community patients not disclosing their disease to their friends and community members. This problem is exacerbated by the link between TB and HIV/AIDS.

In the study areas the rural part, of the TB patients were not secretive about their disease. The patients initially only told their family and neighbours about their disease, but after a while more and more neighbours found out about their ‘lung disease’. Sometimes the whole neighbourhood knew that the patient had ‘lung disease’. The neighbours and family members were often stimulating and helping the patients with their treatment interviewed patients said they felt really supported by them.

One participant said that:

*“rural people can’t know about TB they didn’t feel anything about my disease.”*(38 years- old female participant, Gogeti -three health post).

In the urban areas, four of the patients did hide their disease. It was clear that patients' beliefs were a major cause of self discrimination. As mentioned by the participants generally isolated themselves from family and friends, and particularly from children, because of a fear of transmitting the disease, avoiding gossip and potential discrimination. Furthermore, some patients felt they were discriminated against by healthcare workers.

One TB patients said that:

*“In the beginning my neighbourhoods didn’t talk to me so much anymore, but after while they got used to it and did normal again.”* (15years-old male participant, Buee health center)

*Other non-compliance TB patients said that: “I arrive early in the morning so that people could not see me. I used to conceal my illness from people.”(42years-old female participant, kela health center)*

**Table 2 Reasons for tuberculosis TB treatment non-compliance in Sodo Woreda, Gurage zone, SNNPR, Ethiopia, 2014.**

Reasons for non-compliance	(Number of participants)
Economic factors	(17)
distance to health facilities	(15)
Use of traditional healing system	(12)
Side-effects of drugs	(11)
Felt well	(11)
Daily labourers	(10)
Food security	(9)
Patents-providers r/ship	(8)
Lack of community and family support	(8)
not good opening time	(5)
Stigma and shame attached to tuberculosis	(4)
Size of pill	(3)
Pill burden	(2)

- Numbers in brackets show the number of patients who reported the reasons. They do not add up to 22 as some patients reported more than one reason.

## CHAPTER SEVEN

### DISCUSSION

This study explored factors that influence TB treatment compliances in patients treated in public health facility in Sodo Woreda, Gurage Zone, SNNPR. It suggests that TB patients have to overcome great challenges in complying with TB treatment. The themes identified in this descriptive review were intricately linked and likely to have a combined effect on patient compliance to TB treatment.

Client related factors, health services related factors, disease and medical related factors and social-influence are all play an important role.

The TB patients reported that economic factor, distance, use of traditional healing system were the main reasons for failing to fully comply with TB treatment and problems of lack of community and family support, food security, felt well, patients-providers relation-ship, not good opening time, side-effect of the drug, pill burden, size of the tablet, stigma and shame also were reasons for failing to fully comply with TB treatment.

The economic factor on TB patients was one of the key issues influencing timely treatment compliance in this study. This finding is similar a study in elsewhere in Ethiopia which is indicated; financial burden is a leading factor that results to TB patients' non-compliance to treatment (63).

In Ethiopia, by the aim of decreasing the financial burden on patients, TB diagnosis and treatment are meant to be provided free of charge (64). However, the main financial burdens, as evidenced in this study, are the costs of transportation, house rent for those come rural place, medical examinations, and expenses for basic necessity. Thus, it might be improving access to DOTS including the required additional treatment services can significantly reduce financial burden on TB patients by providing financial incentives and economic support for those in need and a patient miss a dose, they are immediately followed up their treatments.

Problem like distance to a health care facility may have an effect on compliance to TB treatment as healthcare services may be inaccessible to patients and TB patients residing in remote areas with poor road infrastructure may be unable to visit health care facilities to access any form of treatment (43, 50). This study indicated that many patients still experience difficulties related to travelling to health facilities for diagnosis and daily attendance for treatment. Even though there are 8 health center and 54 health post, there were only seven health centers and sixteen health post in the study area providing health services like DOTS to a population of over 175,725(60). seventeen of the people in these

settings lived in areas which required more than one hour reaching a health facility in an effort to reduce the access gap to health care, it is better to decentralizations of DOTs services in all health posts and health centers and arrange provision transport fee and permitting those unable to come health facility, some poorest and most ill patients to take the medicine at home may me increase treatment compliance. The community-based DOT contributes substantially to increasing compliance to TB treatment, because it is accessible to clients(65).

The use of an indigenous local healing system was also reported by the participants in this study. Twelve of the clients in the study use traditional medicine during or after their TB medication, which means not only not follows with their doctor's medical prescription but instead might be a modification of that prescription. Some clients are using one or another kind of traditional medicine for their bodily discomfort or the side effect of arising from anti TB treatment. Non-compliance of most TB patients with prescribed treatment is caused, to a large extent, by cultural beliefs have been found in other studies (52).

In this study the rural part of the area stigma around TB seemed to have no influence on compliance, although patients always referred to their disease as 'lung disease' or 'yanget-biret' or 'yanget- firafira' instead of tuberculosis because they considered the disease is not severe or it comes from God.

But, In the Urban areas some patients did hide their condition, although they would normally inform their family. Four respondents with TB reported that they isolated themselves from family and friends, partly to avoid infecting them. This self-discrimination remained high throughout the 8 months of treatment.

Another reason respondents isolated themselves from friends was to avoid gossip and potential discrimination. Patients also hid their TB from other members of the community. Furthermore, some patients felt they were discriminated against by health workers. Stigma and discrimination towards TB and HIV patients results in patients delaying seeking testing and treatment and thus poorer health outcome have been found in other studies (30). Patients' preference to hide their TB from other members of the community seems justified, since several Patients reported that they did discriminate against people with TB. The multiple causes of this discrimination will require multiple interventions tailored to the local context and social system. The issue of perceived risk of infection that seems to be widespread throughout the community could be addressed by health education



Food security whilst taking TB treatment was associated with noncompliance to TB treatment. In this study has also documented lack of nutritious food which supports TB treatment has been encouraging non-compliance rate. This is in line with findings from a study; non-availability of food for patients on TB treatment contributes to non-compliance to treatment(66).

Patients in this study, family and community support is identified as an important factor for influencing treatment compliance. It is possible that family support can alleviate patients' economic and social problems and family and community were very important to keep them motivated.

A previous study in the rural part of North Ethiopia found family members can also observe patient adherence to medications, provide encouragement, and remind them of their medical appointments (67). Also a previous study from Ethiopia found that most patients interrupted medication in their third or fourth month of treatment which may indicate fading family support during the later phases of treatment (68)

In this study patients were not compliance to their treatment because they started to feel better, and this was often in combination with lack of money to pay for fees and transportation. This finding is consistent with study; a patient might not see the need to continue with TB treatment when they are feeling better or well after taking the treatment for a while, usually 2 months out of the 6 months required treatment duration(66).

In this study, Patients mentioned side effects as common reasons to stop treatment. The side-effects revealed by participants included a painful body, vomiting, feeling weak, urine turns to red, decrease appetites, and on the body. This study is in line with other study state that ;Adverse reaction or side effect of drugs is another reason of defaulting and Some patients think the side effects of drugs aggravate their symptoms and as a result, some will decide to default than to continue medication(69).

## **CHAPTER 7- CONCLUSIONS AND RECOMMENDATION**

### **CONCLUSIONS**

This study indicates that patients often take their TB medication under difficult circumstances and experience significant challenges, many of which are outside of their direct control.

The result of this study shows that all those factors are a wide range of interacting factors impact on treatment taking behaviour.

Non-compliance to TB treatment amongst TB patients in Sodo Woreda, Gurage Zone, Southern Nation is associated with non-availability of food whilst taking TB treatment, poor interpersonal communication between healthcare providers and patients, beliefs in traditional medicines for curing TB, long distance to the health care facility, economic factors, daily labourers, side-effect of the drug, stigma and shame, feeling that the size of the tablet is too big and the pill burden (too many pills to take daily).

Challenges economic factor and distance to health care facilities were factors that most influenced timely TB treatment compliance.

### **RECOMMENDATION**

Based on the findings, the researcher makes the following recommendations for practices and future research.

In order to prevent non-compliance to TB treatment in Sodo Woreda, Gurage Zone, SNNPR, Ethiopia and elsewhere, the researcher recommends that:

1. To overcome the most important barriers in treatment compliance, more sustained health education campaigns should be directed towards patients, health care providers, patients' close contacts, and the community at each visit using local language. This intensification should be comprehensive to include duration of treatment, possible side effects and how to deal with them, consequences of not completing TB treatment
2. Traditional health practitioners, religious leaders and other should be educated on TB and be involved in TB control program.

3. The Direct Observation of Treatment (DOT) should be decentralized in all peripheral health facilities, including health posts is of vital importance to make progress toward achieving TB control
4. This study should be repeated in quantitatively involving a larger sample and comparing districts in order to identify similarities and differences in the factors which contribute to non-compliance to TB treatment.

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ANNEX A

**Consent form to study Participants**

**JIMMA UNIVERSTY, COLLEGE OF MEDDICAL SCIENCE AND PUPLIC HEALTH**

Hello. How are you? My name is cherinet gugssa I am here on behalf of the Jimma University post graduate research team, and I would like to talk with you about compliance with TB treatment among TB patients: Behavioral, socio-cultural and health system challenges. I am working to explore the reason for non-compliance against TB treatments from lived experience and views of TB patents in your community. I ask you to help me my research study because you have been one of this communities and I would like your valuable participation.

It will take about 60-90 minutes. The information you provide us is completely confidential and will not be shared with anyone else without your consent. Your name or any identifying information will not be registered. You may refuse to answer any question and choose to stop the interview at any time.

There is no direct benefit you for participating in this study however, I hope the information you provide us is extremely important and valuable, as it will help the Government and the health facilities involved in TB treatment service provision to improve services delivery. I will present my final result within 7 months, and will be happy to share them with you if would like to see them.

If you have any question? You may contact cherinet gugssa, an investigator for this study concerning about problem with this work.

Phone at (0921248832) e-mail at [cherinetgugsa@yahoo.com](mailto:cherinetgugsa@yahoo.com)/[cherinetgugsa@gmail.com](mailto:cherinetgugsa@gmail.com)

If you agree to this interview, you may sign below but if you do not agree, you can let me know at this point and I will not proceed with the interview.

Signature/ Thumb print of respondent.....

Date.....

## **ANNEXE B**

### **INTERVIEW GUIDE FOR NON-COMPLIANCE GROUP**

Age -----

Sex -----

Fake name -----

Date of interview -----

Patients first visit to clinic -----

Start time -----

End time -----

### **HEALTH SYSTEM RELATED FACTORS**

Q1. Would you please tell me something about your experiences while going to the clinic this last month?

Q2 .Would you please tell me what possible problem was Experience?

Possible probes

- Would you please tell me the relationship between doctor/staff and you?
- Did you feel that the tablets are just too big?
- How do you see Pill burden-too many pills to take daily?
- Did you feel that the number of tablets you have to take are just too numerous?

### **MEASURING OF COMPLIANCE**

Q3. Would you please tell me your Experience TB treatment compilation?

Q4. Why did you miss your TB medication?

Q5. Have you ever missed your dose(s) of TB drugs before? If yes, why did you miss your TB drugs?

For how long should the drugs for TB be taken?

## **SOCIO-CULTURAL FACTORS**

Q6. Did you inform your family of friends that you were on TB treatment? If no, why ?

Possible probes.

- If yes; how did this person(s) react?
- If no; how do you think these persons would have reacted?
- If no; do you plan to tell your family, spouse, and friends? Why, ?

Q7. Have you experienced being neglected because you have TB? If yes what?

Q8. Were you ashamed because you have TB? If yes why?

Q9. Have you had any negative experiences related to the fact that you have TB?

Q10. Have you had any positive experiences related to the fact that you have TB?

Q11. Have you experienced TB can be cured by using traditional medicines? If yes, how .if no, why?

Q12. Did you have any experienced that you tried any other treatment in this period? Why, why not?



## **ANNEX C**

### **INTERVIEW GUIDE FOR PATIENTS WHO HAD INTERRUPTED TREATMENT/DEFAULTER**

Age-----

Sex-----

Fake name -----

Date of interview-----

First visit to clinic-----

Periods of interruptions/defaulted in treatment-----

Last visit to clinic-----

Start time -----

End time -----

Q1. Would you please tell me about the period you felt the first signs of being ill?

Q2. Would you try other treatment methods first? Why?

If yes, are you still using this treatment?

Q3. How did you feel about taking the tablets?

Q4. How did you see this medicine would cure your illness?

Q5. Did you experience any good changes in the way you felt physically?

Q6. Did you experience any bad changes in the way you felt physically (Side-effects)?

Q7. When you stopped going to the clinic, how did you feel at that point? (Cured? Feeling Well?)

Q8. Did you consider that you could become ill again? Why?

Q9. Did you continue or enter another type of treatment? What is the reason?

Q10. Did people in your neighbourhoods know that you were suffering from TB at this point? How? Why?

Q11. Have you experienced that people think that TB is a disease to be ashamed of? Interaction with the clinic and the health personnel

Q12. How did you experience the first meeting with this (public) clinic?

**Possible probes:**

Who received you? What did they tell you?

Did you understand that you were suffering from TB?

If yes, how did you react? If no, did you get the impression that you were suffering from something else?

Did the doctor/nurse tell you how to get cured?

Did the doctor/nurse tell you how long you had to take medicines? Did you understand why?

Do you remember how you felt after your first meeting with the clinic?

How did you feel about going back?

During the period when you went to the clinic, did you often talk to the same persons?

What did you usually talk about with the health worker?

Q13. From your experience, would you please tell me something good about going to the TB-clinic? (Can you remember a situation that made you feel good?)

Q14. From your experience, would you please tell me something bad about going to the TB-clinic? (Can you remember a situation that made you feel uncomfortable?)

Q15. Did anything of importance change? (Relation to spouse, relatives, Neighbour etc.)

**Possible probes:**

Was it in any way difficult for you to collect your medicines? Why?

Would you please tell me any good or bad changes occur when you stopped going for treatment?

What would have made it easier for you to continue to take medicines?

Did anyone from the clinic try to contact you when you did not come for treatment the

First time? When, how, by whom?

How did the health personnel react when you interrupted the treatment?

Did anyone try to contact you when you dropped out from treatment? When, how, who?

What would you have done to make sure that all the patients came to the clinic and fulfilled their treatment?

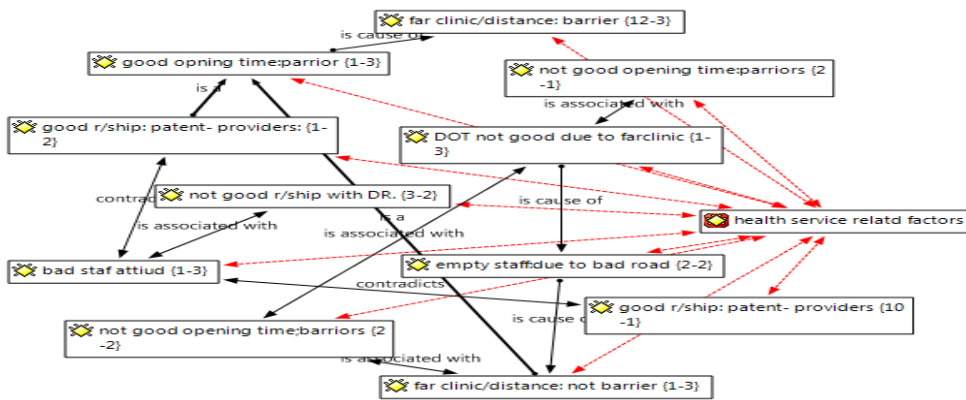
Do you have anything to add?

Thank you

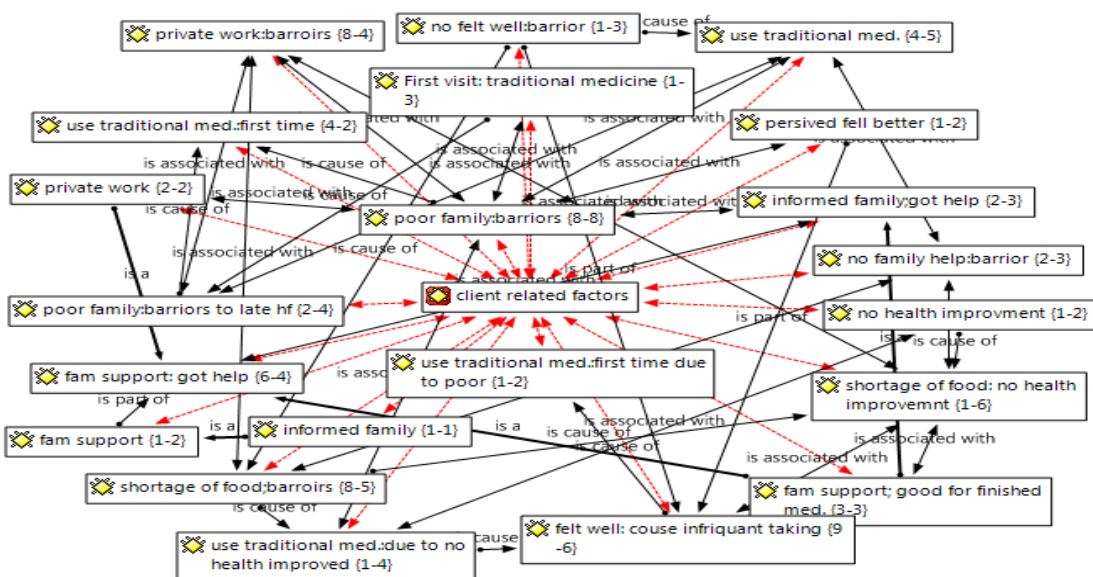
## ANNEX: D

Networks of codes in the data using ATLAS.ti-7

### Health related factors

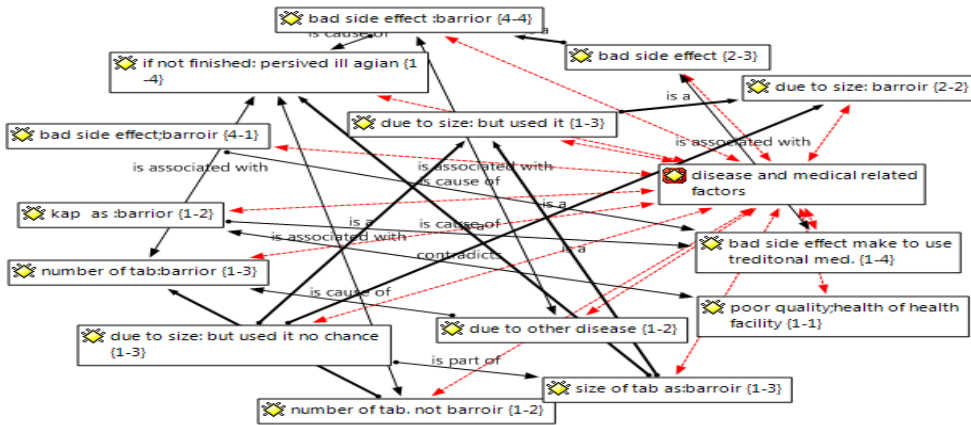


### Client related factors

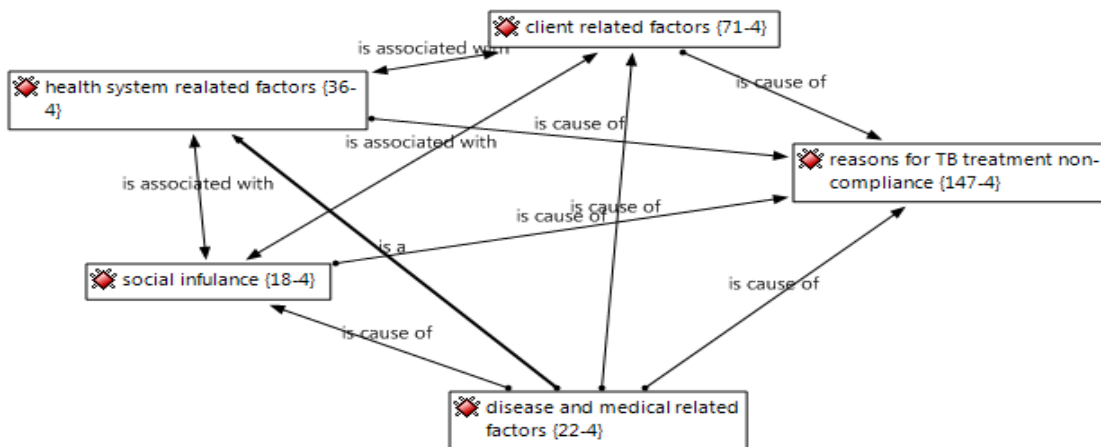




## Disease and medical related factors



## Diagrammatical representation of the data result



DECLARATION

DECLARATION

I, the undersigned, declare that this thesis proposal is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis proposal have been fully acknowledged.

Name of the student: CHERINET GUGSSA BORU (BSC).

Name of the institution Jimma University

Date. \_\_\_\_\_ Signature \_\_\_\_\_

APPROVAL OF THE FIRST ADVISOR

Name of the first advisor \_\_\_\_\_

Date. \_\_\_\_\_ Signature \_\_\_\_\_

APPROVAL OF THE SECOND ADVISOR

Name of the second advisor \_\_\_\_\_

Date. \_\_\_\_\_ Signature \_\_\_\_\_

APPROVAL OF THE THIRD ADVISOR

Name of the third advisor \_\_\_\_\_

Date. \_\_\_\_\_ Signature \_\_\_\_\_





